Uzsuvtaminot JSC

Karakalpakstan and Khorezm Water Supply and Sewerage Project

Environmental and Social Management Planning Framework (ESMPF) for Water and Sanitation Activities in Khorezm Region

Volume 1

April 2024

www.gbs.uz

Global Business Services
21 Khusnutdin Asomov St.
Tashkent, 100084,
Uzbekistan
Tel.: + 998 71 235 00 64
+ 998 71 235 15 14
www.gbs.uz

Contact information:

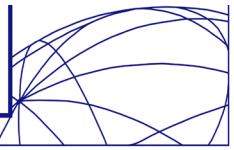
Project Director	Laly Sattarova	laly@gbs.uz
Team Leader	Val Votrin	votrin@gmail.com
Water Supply / Environmental Engineer	Camille Hennequin	camille.hennequin@veolia.com

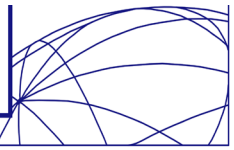
Document Information and Control

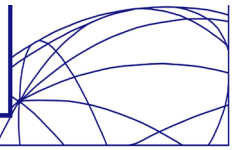
Document Title	Environmental and Social Management Planning Framework
Project	Karakalpakstan and Khorezm Water Supply and Sewerage Project
Project No.	
Financier	Asian Infrastructure Investment Bank
Assignment	*Preparation of Environmental and Social Management Planning Framework for Water and Sanitation Activities in Khorezm Region*
Client	Uzsuvtaminot JSC

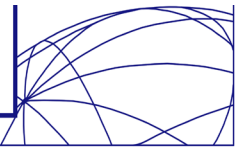
Version	Date	Author(s)	Approved	Comments
V1 (draft)	13/02/2024	Val Votrin	Laly Sattarova	Draft to client
V2 (draft)	18/03/2024	Val Votrin	Laly Sattarova	Draft after AIIB's comments
V3 (draft)	14/04/2024	Val Votrin	Laly Sattarova	Draft after AIIB's comments

Contents

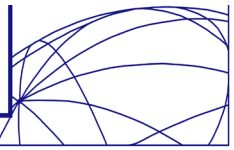








Tables:



Figures:

Acronyms

ACHS	Archaeological and Cultural Heritage Site
AIIB	Asian Infrastructure Investment Bank
AoI	Area of Influence
BOD	Biological Oxygen Demand
CEIU	Complaints Resolution, Evaluation, and Integrity Unit
CFU	Colony-Forming Unit
COD	Chemical Oxygen Demand
DO	Dissolved Oxygen
EBRD	European Bank for Reconstruction and Development
E&S	Environmental and Social
EHS	Environment, Health, and Safety
EIA	Environmental Impact Assessment
ESF	Environmental and Social Framework
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Management Plan
ESMPF	Environmental and Social Management Planning Framework
ESP	Environmental and Social Policy
ESS	Environmental and Social Standard (ESS1, ESS2, ESS3)
EU	European Union
FAO	Food and Agriculture Organisation
FGD	Focus Group Discussion
GAP	Gender Action Plan

GBV	Gender Based Violence
GIIP	Good International Industry Practice
GoU	Government of the Republic of Uzbekistan
GRC	Grievance Redress Committee
GRM	Grievance Redress Mechanism
JSC	Joint Stock Company
IAM	Independent Accountability Mechanism
IFC	International Finance Corporation
IFI	International Finance Institution
IPP	Indigenous Peoples Plan
IPPF	Indigenous Peoples Planning Framework
KII	Key Informant Interview
LAP	Land Acquisition Plan
LAPF	Land Acquisition Planning Framework
LARP	Land Acquisition and Resettlement Plan
LARPF	Land Acquisition and Resettlement Planning Framework
LLC	Limited Liability Company
LRP	Livelihood Restoration Plan
NGO	Non-Government Organisation
NTS	Non-Technical Summary
O&M	Operations and Maintenance
PAP	Project-affected Party
PCU	Project Coordination Unit
PDL	Permissible Discharge Limit

PFU	Plaque Forming Unit
PIU	Project Implementation Unit
PM	Particulate Matter
PMC	Project Management Consultant
PPE	Personal Protection Equipment
PPM	Project-Affected People's Mechanism
PPQ	Project Processing Query
RCR	Request for Compliance Review
RDR	Request for Dispute Resolution
RP	Resettlement Plan
RPF	Resettlement Planning Framework
SEAH	Sexual Exploitation, Abuse and Harassment
SEP	Stakeholder Engagement Plan
SS	Suspended Solid
SSESMP	Site Specific Environmental and Social Management Plan
TDS	Total Dissolved Solid
UzWJSC	Uzsuvta'minot Joint Stock Company
WDU	Water Distribution Unit (station)
WHO	World Health Organisation
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant

Executive Summary

Introduction

The Government of the Republic of Uzbekistan ("GoU") requested financing from the Asian Infrastructure Investment Bank ("AIIB" or the "Bank") towards the development of the Karakalpakstan and Khorezm Water Supply and Sanitation Project intended to address issues of the water supply and sanitation in Uzbekistan's autonomous Republic of Karakalpakstan and Khorezm Province. The project implementation will provide reliable, safety and sustainable water supply and sewage services and improve the public health and living conditions of people living in those regions in Uzbekistan.

The Project Implementation Agency is Joint Stock Company (JSC) Uzsuvtaminot, Uzbekistan's national water company.

This Environmental and Social Management Planning Framework (ESMPF) was prepared for one of the two key components of the Karakalpakstan and Khorezm Water Supply and Sanitation Project, namely the modernisation of municipal water supply and sewerage infrastructure in Khorezm Province (the "Project").

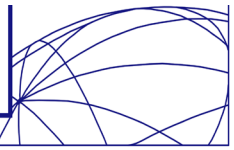
An ESMPF is a practical tool to identify and assess the generic environmental and social (E&S) impacts and risks associated with various sub-projects funded under a specific programme, where details of those sub-projects have not yet been become known, and to formulate appropriate generic mitigation measures to address those E&S impacts and risks.

A comprehensive Environmental and Social Impact Assessment (ESIA) was undertaken in line with the International Finance Corporation Performance Standards (IFC PS) as part of the feasibility study of the Project. The ESMPF for the Project was built on the findings of the Project ESIA and sets out the policies and procedures for the assessment, management, monitoring, and audit of E&S impacts and risks associated with the Project activities in the Khorezm Province.

Project Overview

Khorezm Province is located in western Uzbekistan and borders the Republic of Karakalpakstan in the north and west, with Turkmenistan in the south and with Uzbekistan's Bukhara Province in the east. According to the initial assessment of JSC Uzsuvtaminot, the province area is 6,300 km². With the total population being 1,958,091 people as of Q1 2023, the population density of the province is 310.80 people per square kilometre.

The proposed Project activities will be implemented by the Project Coordination Unit (PCU) to be established within Khorezm Suvtaminot Limited Liability Company (LLC), the regional branch of Uzsuvtaminot JSC.



The Project comprises the following three components:

- *Investment in Water Supply Infrastructure*

  The subprojects under this component include the construction and rehabilitation of wells and intakes, reservoirs, water mains, water treatment facilities, pumping stations, and distribution networks.

- *Investment in Sewerage Infrastructure*

  The subprojects include the construction of centralised sewerage system in the seven district centres of Khorezm Province. The sanitation infrastructure will include but not limited to construction of sewer network, pumping stations, sewage treatment plants, etc.

- *Capacity Building and Implementation Support*

  This component's activities will be divided in two sub-components:

  Component 1: *Capacity Building Sub-component* will address critical institutional development and capacity *gap* of the water utility – *Khorezm Suv Taminoti* and will include among others asset management system, client management and complaint handling system, and billing and collection system.

  Component 2: *Project Implementation and Management Support Sub-component* will be intended to assist to the Project Implementation Agency in ensuring seamless coordination, efficient implementation, and compliance with the relevant policies.

The project covers nine of eleven districts of Khorezm Province, as follows:

- Gurlen, Urgench, Khanka, and Shavat districts are included in the water supply investment programme.
- Bagot, Urgench, Khazarasp, Shavat, Yangiarik, Yangibazar, and Kushkupir districts are included in the sewerage investment programme.

Project Area of Influence

According to the AIIB Environmental and Social Framework (ESF), an area of influence (AoI) includes the territory likely to be affected by the project components including permanent and temporary facilities, its ancillary aspects, and unplanned developments. As no specific subproject sites have been identified at this stage, the Project AoI will be the nine project districts, namely Gurlen, Urgench, Khanka, Shavat, Bagot, Khazarasp, Yangiarik, Yangibazar, and Kushkupir. More specific AoI will be determined once subproject sites are determined.

Environmental and Social Baseline

Climate. Khorezm Province has a mid-latitude desert climate with hot and dry summers and relatively cold winters (BWk under the Köppen climate classification). The climate conditions of the Project area largely depend on the surrounding deserts, including Karakum Desert, Kyzylkum Desert and Usturt Plateau Desert. Another desert in the area, the Aralkum Desert, developed on the former seabed once occupied by the Aral Sea, is the source of airborne salt and dust contaminated with agricultural pesticides being carried over from the former seabed to the Khorezm oases and globally. The mean annual temperature in the province is 12-14°C, 0.92% higher than Uzbekistan's averages. The mean summer temperature in July is 32°C to 36°C, with a maximum of 51 °C. In winter, the average air temperature is 0 °C to -10 °C in January, lower by 5-8 °C compared to the rest of Uzbekistan's southern and eastern parts. Precipitation is uneven within the province. The average annual precipitation across the province ranges from 78 mm to 103 mm. The highest amount of rainfall is in spring and autumn. The region has 22.86 rainy days (6.26% of the time) annually. With respect to the Project area, Khorezm Province, along with the Republic of Karakalpakstan and Syrdarya Province, was found to be among Uzbekistan's regions that are most affected by climate change. According to most climate scenarios, the number of days experiencing temperatures of above 39°C in Khorezm Province is likely to increase twofold between 2021 and 2040. Droughts will be observed more frequently due to the area's long distance from the upper watersheds and many years of intensive water use practices. Extreme temperatures may negatively impact the performance of equipment installed in the water and wastewater treatment facilities and intensify odours.

Topography. The province is located along the Amudarya River and between two deserts namely Karakum Desert and Kyzylkum Desert. The average height of the Khorezm Province is about 100 m above the sea level. The terrain of the area is mostly flat. It has a general surface slope from east to northwest, with absolute elevations varying from 92 to 116 m. The province is crossed by small rivers and a number of irrigation and drainage collector canals.

Geology and Soils. The geological conditions of the Project area were formed during the Golotsen and Upper Pliocene periods, comprising Cenozoic clays, sandstones, and loamy-sandy loam of river sediments. Khorezm Province comprises the territory on both

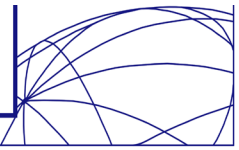
sides of the Amudarya River, whereas the river's left bank is an oasis formed by the Amudarya River sediment depositions. The geology of the right bank of the river is similar to that of the Kyzylkum Desert. The Project area lies on the left bank of the river. The terrain of the Project area represents the plain depressions between the small hills, often filled with salt marshes, grey meadow soils, saline soils, intra-oasis sands and *takyrs* (salt flats). Soil texture is dominated by silt loams, loams, and sandy loams, constituting almost 80% of all soil layers. Organic matter in irrigated soils is low, including, on average, 0.75% in the topsoil layers and decreasing in the deeper layers. Over 32% of the lands are highly saline, and the remaining soils are moderately salty and dispersed.

Seismicity. The Project area is located very close to the active seismic South Tien Shan zone and has a seismic intensity of up to 6-7 and with a frequency of once in 1000 years. The project area has a history of some strong earthquakes including Kunya-Urgench Earthquake of 1208 with magnitude of 6.2.

Surface Water. The Project area lies within the Amudarya River Basin. The Amudarya is the largest river in Central Asia, with a drainage area of 309,000 km^2 and a length of 2,540 km. This transboundary river is crossing Afghanistan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan and has three main tributaries: the Kafirnigan, Sherabad and Surkhandarya rivers. The total average annual flow of the Amudarya River is 73 km^3, with a storage volume of 24 billion m^3. The Amudarya River flows along the north-eastern and southern borders of the Project area. For the last decade, the Project area has faced a water deficit, particularly during the vegetation season when the need for water resources is much higher than at other times. The peak of the water deficit falls on April-May and through the summer. In the Project area, the water of the Amudarya River is also diverted into the province's local canals for cotton, wheat, and fodder cultivation. Several irrigation and drainage agricultural canals are present in the area.

Groundwater. Within the Khorezm oasis, the groundwater table depends on the water level in the Amudarya River. The overall groundwater table in the Project area is highest during the Amudarya River flood period (in spring), while in autumn and winter, it drops sharply. On irrigated lands, the groundwater regime also changes, rising sharply during irrigation and decreasing during the non-irrigation period. Considering the relatively high groundwater table, the water utility uses the Tukmangit aquifer in the Shavat District as a drinking water source despite its relatively high mineralisation. In some areas of Khorezm Province, groundwater is the only source of drinking water and water for household needs. Most of the households and businesses in the province, in addition to the tap water, have wells in their yards.

Nature Protected Areas. Khorezm Province has only one national protected area, Kyzylkum State Reserve which was established in 1971. It is divided between Khazarasp District, in Khorezm Province, and Romitan District in Bukhara Province but is mostly situated in Khorezm Province occupying 8,844 hectares (ha). A nature reserve of regional significance, Yangibazar Reserve was established in the Yangibazar District in



accordance with Order of District Government 738 on 10 May 2003. The reserve comprises a lake and the *tugai* system inhabited by semi-aquatic birds and fish.

Terrestrial Biodiversity. The Project area is rich with biodiversity, with high biodiversity value area found mainly within the existing nature protected areas. More than 148 plant species, belonging to 46 families and 110 genera, are found in the Kyzylkum Nature Reserve, 40 of them endemic to Central Asia. There are 29 species of reptiles found in the Amudarya River delta, mostly on the right bank of the river. The bird fauna consists mainly of migratory birds since nesting and sedentary birds are represented by a relatively small number of species living within the boundaries of the tugai forest and in the sandy desert. In different seasons, 267 species were recorded in the reserve. Mammals are represented by 35 species. Among them, a special place is occupied by the Bukhara deer, whose acclimatisation in the reserve was successful, and currently, this species is a prominent representative of tugai ecosystems.

Waterfowl and Fauna around Lakes. Fish farms and surrounding lakes in Khorezm Province are located on a waterfowl flyway, e.g., *Ciconiiformes*, *Anseriformes*, and *Laridae*, migrating between their breeding areas in Russia and Northern Kazakhstan and wintering places in Central and Southern Asia. Due to the area's natural water shortage, the role of artificial watersheds in the study area has significantly increased. Waterfowl moved from their lost habitats in the Aral Sea to the artificial water reservoirs, small natural ponds, discharge lakes, and wetlands in Khorezm Province. One hundred forty bird species have been recorded since 1994 in the Amudarya River Basin, where more than 30 species are waterfowl. Mammals are represented by 17 species, where *Gazelle subgutturosa* is included in the National Red Book (2003), and *Lynx caracal* and *Gazelle subgutturosa* are on the IUCN Red List. There are 36 species and subspecies of fish from nine families live in small lakes and ponds across the region.

Protected Species. Natural habitats and the nature protected areas in Khorezm Province host a wide variety of wildlife species that fall into various categories of national and international protection status and are included on the IUCN Red List and/or the National Red Book. Those species include:

- Goitered Gazelle (*Gazella subgutturosa)* (included in the National Red Book (2009) and the IUCN Red List (listed as Vulnerable)).
- Saker falcon (Falco cherrug) (IUCN Endangered category)
- African houbara (Chlamydotis undulata) (IUCN Endangered category)
- Steppe eagle (*Aquila nipalensis*) (IUCN Endangered category)
- White-headed duck (*Oxyura leucocephala*) (IUCN Endangered category)
- Marble teal (*Marmaronetta angustirostris*) (IUCN Near Threatened category)
- Russian tortoise (*Testudo horsfieldii*) (IUCN Vulnerable category)
- Desert monitor (*Varanus griseus*) (included in the National Red Book)
- Amudarya shovelnose sturgeon (*Pseudoscaphirhynchus kaufmanni*) listed by the IUCN Red List as Critically Endangered.

- Small Amudarya shovelnose sturgeon (*Pseudoscaphirhynchus hermanni*) (IUCN Critically Endangered category).
- Aral barbel (*Luciobarbus brachycephalus*) (IUCN Vulnerable category).
- Korolkov's tulip (*Tulipa korolkowii*) is included in the National Red Book (2009) and the IUCN Red List (listed as Near Threatened).

Cultural Heritage. A total of 48 cultural heritage sites were identified within the Project area. Most sites are in the Khazarasp district.

Demographics. The population of Khorezm Province is generally young. As of 2022, the population of Khorezm District was 1,924,163, where children 0-17 comprised a noticeable share, 34.14%, and young working adults (18-39) made up 36.4%. Women account for a higher share of the population in Bagat, Khiva, Shavat, and Urgench districts, while in Khiva city, there are more women than men. The districts of the province with the greatest population are Khazarasp District (202,200 people), Khanka District (194,900 people), and Urgench District (209,200 people). While ethnic Uzbeks make up 92.84% of the total population. Turkmens, Tajiks, Russians, Tatars, Koreans, Kazakhs, Ukrainians, and other nationalities are represented in small numbers.

Educational and Healthcare Facilities. The province has 433 preschool facilities, 567 secondary schools, 4 academic lyceums, 48 vocational schools and 6 universities (all of them located in Urgench). The healthcare system of Khorezm Province is represented by 72 hospital facilities and 419 outpatient centres with the total of 21,700 medical personnel as of 2021. All the surveyed adult population is literate. The secondary school enrolment rate for household members aged 7-14 is 100%, consistent across the districts. All settlements has at least one primary school and middle school in the vicinity, whereas vocational schools and high schools are mainly in the urban settlements. Only 11.22% have a higher education level, where 9.21% have a bachelor's and 2.01% have a degree. Women are more active in obtaining higher education; their share is 53.68%, while men comprise 46.32% of those with higher education.

Employment. About 40.9% of survey respondents reported having a job. Labor force participation was higher among males. About 63.2% of males aged 18 and above, or 31.5% of the total sample, reported being employed. The women were less economically active and those employed comprised 18.8% of females aged 18 and above or 9.93% of the total sample. Some 18% of the respondents reported being retired and receiving a state pension. Another significant share was migrant workers, who reported more than 12% but seemed much more extensive than reported. Most were said to have gone to work in Russia, and a minor part in Kazakhstan and Turkey. During the interview, people said they usually planned to leave for no more than six months.

Access to Water Supply System. All of respondents reported having access to a safe drinking water source, where 54.5% were connected to tap water, and 39.2% purchased water from private water traders. Due to the lack of water in the water supply system and the high-water costs from private traders, some residents use

groundwater as a primary source for drinking and food preparation. Significant differences were recorded in the access level to the public water supply system. Most of those connected to the water supply system were among the residents of Khanka and Shavat Districts, who accounted for 93.30% and 96.30%, respectively. The smallest number of the population connected to the water supply system was noted in Yangibazar and Khazarasp Districts, 30.77% and 46.43%, correspondingly.

Access to Sewage System. Almost all respondents (98%) of individual houses reported having separate pits for toilets and domestic wastewater. Given the high groundwater table, regular pits for domestic wastewater are 1 m deep and 1 m wide. Pits for domestic wastewater were often connected to collector irrigation canals by a discharge pipe. Only 1.91 % of respondents reported having a connection to the sewage system.

Waterborne Diseases. Contaminated water and poor sanitation are linked to transmission of diseases such as cholera, diarrhoea, dysentery, hepatitis A, typhoid, and polio. The province has high number of incidences of waterborne diseases, mainly acute gastroenteritis affecting in average 1.6% of population. Meanwhile, hepatitis cases decreased from 1.72% in 2018 to 0.42% in 2021.

Potential E&S Impacts

The Project is expected to generate benefits in improving the efficiency of water use and wastewater management and enhancing the environment, hygiene, and public health security in the Khorezm Region. The proposed project will bring significant benefits or positive impacts, including economic benefits (e.g. cost savings, health benefits from prevention of sicknesses, etc), employment opportunities and enhanced community health and safety.

The proposed Project activities have the potential to cause various adverse E&S impacts. These impacts would be associated with waste generation, increased noise, air pollution, wastewater, water pollution, disturbance to community and traffic, health, and labour safety issues, etc. The key E&S impacts assessed as Significant by the Project ESIA include loss of livelihoods as a result of permanent or temporary land acquisition and impacts on cultural heritage, particularly associated with the wastewater treatment plant (WWTP) sites that will likely be located outside populated areas where undisturbed archaeological cultural heritage may be present. In addition, the field visits noted many registered and abandoned cemeteries, which may also be disturbed by the project activities.

None of the impacts for the Project operation phase were assessed as significant. The main issues foreseen during operation of the Project will be related to water management. Operation of new water supply infrastructure may cause some direct and indirect negative impacts on the water. These include excessive water withdrawal, discharge, and seepage of wastewater from the newly constructed sewage system in the Project area. Wastewater effluent, if not properly treated, could significantly

contribute to various water pollution problems, including adverse health risks for the users of surface water resources and the aquatic ecosystem. Lack of skilled personnel for the operations and maintenance (O&M) of a WWTP may contribute to the project area's adverse environment, health, and safety.

E&S Management Procedures for Subprojects

Screening and Categorisation. Not all the locations of the proposed subprojects have been identified. The exact subproject sites along with any associated infrastructure which would be needed to support the subproject will be determined later. The Project has to ensure that relevant national and AIIB requirements are applied to adequately manage the potential E&S impacts from the subprojects to be financed. Therefore, each subproject will have to be screened and categorised by the PCU using the criteria in paragraph 19 of the AIIB Environmental and Social Policy[1] (ESP) and the national EIA categorisation criteria as provided in this ESMPF.

Subproject ESIA. In terms of the national Environmental Impact Assessment (EIA) process, the subprojects were classified as Category III (low environmental impact). Category III projects require the preparation of an EIA. The regulatory EIA reports for the nine regional projects have been prepared by Uzsuvtaminot in December 2023 and submitted for regulatory approval. The spatial scope of the regulatory EIAs was limited by the administrative boundaries of each of the Project districts and therefore the specific E&S impacts that would arise from the relevant subprojects were not assessed in detail by the regulatory EIAs, as recommended by the applicable lender standards. Some subprojects, particularly those requiring a new land-take may have significant adverse E&S impacts that are irreversible, cumulative, diverse and/or unprecedented. Those impacts may have not been captured by the regulatory EIA process, and thus those subprojects could be classified as Category A projects under the AIIB ESF and require a full-scale ESIA.

Biodiversity Conservation. While impacts on biodiversity were not assessed as significant in the Project ESIA, a number of internationally and nationally protected species may potentially be present within the subprojects' footprint. This aspect will be covered in the subproject specific ESIAs.

Framework ESMP. The ESIA identified the significant adverse E&S impacts that may potentially result from the proposed Project activities. To manage and mitigate these impacts, a range of measures has been developed to reduce the overall residual impacts to as low as reasonably practicable. The Framework ESMP summarises the ESIA outcomes and formulates the actions to address and mitigate the impacts identified.

The ESMP covers the Project's planning, construction, and operation phases with their potential to affect, positively or negatively, the environment and communities in the

[1] https://www.aiib.org/en/policies-strategies/_download/environment-framework/Final-ESF-Mar-14-2019-Final-P-PDF.pdf

Project area. It can be used as a framework for a more subproject specific ESMP following an ESIA process.

The level of detail for a subproject ESMP should be sufficient to describe the implementation of mitigation actions, the desired outcomes, the responsibilities, resources, and timeframes for implementing the mitigating actions.

E&S Monitoring. E&S monitoring and auditing of the commitments will be implemented from the planning phase through the construction and operation phases. The monitoring plan is aimed to monitor the identified impacts via a selection of parameters. Site inspections will be undertaken regularly in relevant areas of the project. The inspections will focus on compliance with the ESMP. The inspections will play an essential role in increasing awareness of ESMP.

Gender Action Plan. A Gender Action Plan (GAP) has been developed by following the AIIB requirements to ensure that the Project provides women access to resources and economic empowerment. The GAP foresees reducing gender gaps in access to the benefits of safe, sustainable, and convenient drinking water and wastewater, thereby improving women's livelihoods and well-being. The Project effectively mainstreams gender, where women will benefit from access to resources and ability to be economically active. Adequate water and wastewater systems will lead to in declining time spent by women and girls on domestic chores allow them to pursue education and income. The Project will also raise public awareness about hygiene and sanitation, provide employment opportunities, contribute to reducing time poverty and expenditure on water and medicine, and improve overall public health in the Project area.

Stakeholder Engagement

Stakeholders are persons or groups who are directly or indirectly affected by a project (the Project Affected Persons, PAPs), as well as those who may have interests in a project and/or the ability to influence its outcome, either positively or negatively (the interested parties). According to AIIB[2] "*project-affected people are people who may be beneficially or adversely affected by an AIIB-financed Project*". So, the affected people are communities of the local population within the project's area of influence who are likely to be adversely affected by the project.

AIIB' Environmental and Social Standard 1[3] specifies "*Vulnerable groups or individuals refers to people who, by virtue of factors beyond their control: (a) are more likely to be adversely affected by the Project's environmental and social impacts; and (b) are more likely than others to be limited in their ability to claim or take advantage of Project benefits*". Vulnerable groups are those individuals or groups who may be directly and

[2] https://www.aiib.org/en/about-aiib/who-we-are/project-affected-peoples-mechanism/how-we-assist-you/rules/

[3] AIIB ESF, ESS 1, Section 45, Vulnerable Groups and Discrimination

differentially or disproportionately affected by the Project's negative impacts and/or less able to participate in and benefit from the Project's positive impacts because of their disadvantaged or vulnerable status. This status may stem from ethnicity, property, level of income, economic situation, gender, language, religion, national or social origin, age, culture, literacy, physical or mental disability, and dependence on unique natural resources.

Twelve key stakeholder groups, as well as their specific relevance to or interest in the Project were identified throughout the feasibility stage and the ESIA stage. Those included three categories of institutional stakeholders (national, regional, and local level government authorities), the project affected persons, vulnerable groups, the local communities, various community representatives, the Project owner and relevant Project personnel, local business, non-government organisations (NGO), and media. Intensive engagement with local authorities and communities using multiple approaches and methods has been ongoing since early stages of the Project. A detailed account of all stakeholder engagement meetings and consultations undertaken at the preparatory stage of the Project during the preparation of the Feasibility Study and the ESIA is provided in the standalone Stakeholder Engagement Plan (SEP) for the Project.

Consultations with the local communities were conducted to encourage and facilitate participation of the residents. Female participants accounted for 72% of all meeting participants. Consultations were conducted in seven project districts and 14 project communities. The consultations prioritised female residents' participation. However, the consultations also ensured the involvement of people of various social segments with their possible concerns associated with the Project. During consultations, the participants were informed about the Project scope and associated activities. The presentations were followed by discussions with meetings and interview's participants. A summary of the comments and key concerns emerging from community consultations are provided in table below.

Table 1: A summary of the comments and key concerns emerging from community consultations

No.	Stakeholders Comments	Response of the Project Team
1.	Residents asked about the start of the physical implementation of the project.	The project implementation will start upon the stakeholders' approval of the proposed priority and long-term investment programmes.
2.	Residents asked if they understood correctly that they would have safe tap water due to this project.	The project water supply component will provide safe drinking water to the project communities.
3.	Residents were concerned about the water quality to be supplied by the project components, and whether the water would be filtered before being delivered to the distribution network, and if the project foresees the	The project water supply component will provide safe drinking water to the project communities. The raw water will be treated on the Pitnak and Urgench water treatment plants (WTP) modernised under the project funded by the

No.	Stakeholders Comments	Response of the Project Team
	installation of desalination plants as private traders do.	European Bank for Reconstruction and Development (EBRD).
4.	Stakeholders were concerned whether all villages were included in the water supply component.	List of the project communities and villages was elaborated by the Khorezm Suvtaminot LLC.
5.	Residents requested the wastewater component be implemented across the district and not only in the district centre.	Wastewater system construction is considered by several financing including GoU funds, AIIB project, and other international finance institutions (IFI). This project is planned to cover the district centres and construction of four WWTPs.
6.	Residents asked whether the water tariff would be increased upon project implementation and whether it would differ from other Khorezm province areas.	The water tariff will be the same throughout the Khorezm region despite the project's implementation, the remoteness of the villages, and other parameters or reasons.
7.	Residents asked whether tap water would be as clean as bottled water.	The project water supply component will provide safe and clean drinking water to the project communities. The raw water will be treated on the Pitnak and Urgench WTPs modernised within the EBRD project and distribution network's pipes will be replaced with new ones within this project.
8.	Residents noted that the tap water is not clean and requires sedimentation before consumption; they were concerned about whether the project considered technology to remove these solids before supply into the distribution network to ensure delivery of clean water.	The raw water will be treated on the Pitnak and Urgench WTPs modernised within the EBRD project and distribution network's pipes will be replaced with new ones within this project.
9.	Residents noted that new water pipes were laid last year, but there were no connections; will these pipes be changed when residents connect to the water supply.	No, new pipes will not be removed.
10.	Residents asked whether the project has a component for rural roads construction.	The project has no such component.
11.	Residents noted that they are connected to the water supply, but the tap water is unclean, and they asked whether the water main and network pipes will be changed to ensure clean tap water.	The project components include the replacement of pipes in water mains and networks to ensure the delivery of safe and clean drinking water to customers.
12.	Residents asked what the water quality would be and whether it would be the same as Tashkent water, i.e., not salty.	The project water supply component will provide safe drinking water to the project communities. The water will be treated on the Pitnak and Urgench WTPs modernised within the EBRD project. The project design foresees the installation of chlorination facilities for drinking water disinfection.
13.	Residents asked why tap water in Tashkent is available 24 hours a day and whether the	The project includes the replacement of the existing old pipes, the construction of new WDUs,

No.	Stakeholders Comments	Response of the Project Team
	project considered the same water availability for the Khorezm Province residents.	and modernising pumping stations for supplying water 24 hours a day in the project areas.
14.	Residents asked whether the project design included a desalination plant to reduce saltiness in the drinking water.	No desalination plants are foreseen in the project design. However, the water will be treated on the Pitnak and Urgench WTPs modernised within the EBRD project. These new facilities will ensure the provision of unsalted water.
15.	Residents asked how the wastewater will be treated.	For wastewater treatment, the project will build WWTPs with (i) primary treatment for eliminating large debris, (ii) biological treatment for removing soluble organic matter solids that escaped primary treatment and smaller suspended solids, and (iii) disinfection to ensure no pathogens in the effluent.

The Stakeholder Engagement Programme will be used by the PCU to engage all the Project stakeholders. The programme will also support the engagement of vulnerable groups that are facing hurdles to take part in the engagement directly for social, economic, or political reasons.

The stakeholder consultation will continue throughout the Project implementation. The consultation process will be carried out regularly with all the stakeholders identified, including but not limited to the concerned government departments, local administration, and community representatives from the Project area, specifically focusing on the PAPs, vulnerable groups, and women's empowerment.

Grievance Redress Mechanisms

Based on the understanding of the project area and the stakeholders, a list of the grievance types and corresponding redress mechanisms have been identified for the Project and include the following:

(1) GRM for Communities (to redress grievances from all project-related stakeholders in general and community grievances in particular)
(2) GRM for Workers (to redress grievances from all related direct and indirect project personnel, including local workers, migrant workers through contractors, sub-contractors' and consultants' personnel)
(3) GRM on Gender-based Violence (GBV) (to redress grievances from all project-related stakeholders)
(4) Court of Law.
(5) AIIB's Project-affected People's Mechanism (PPM)

The Community GRM will operate in two tiers:

(1) Community level GRM and
(2) PCU level GRM.

Each tier will have different actors for objective and transparent decision-making. This approach would allow for trust to be built among the stakeholders and prevent the culmination of small issues into major community concerns. The GRM will be accessible and understandable for all stakeholders and be available for the entire project life.

The community-level Grievance Redress Committee (GRC) will be established in each of the community where the Project will have its components: the number of participating communities will correspond to the number of created GRCs. The community-level GRC will be dealing only with the Project activities in the specific community. GRC will comprise representatives of the community, village, and the project personnel.

The project-level GRC will be established at Khorezm Suvtaminot LLC. However, apart from Khorezm Suvtaminot representatives, the GRC should also include the authorised representative of Uzsuvtaminot JSC and the PCU Head. In addition, the GRC may be joined by the Khorezm Province Administration (*khokimiyat*) officers from the land cadastre, agriculture, water resources, legal, and health or education departments.

The project-level GRC composition will be available at the district departments of Khorezm Suvtaminot LLC and the PCU Coordinator's office in the water utility.

Resettlement Planning Framework (RPF)

The RPF provides guidance to the project stakeholders where the Project requires the use of land on a temporary or permanent basis and the acquisition of land. The key objective of the RPF is to establish resettlement principles, organisational arrangements, funding mechanisms, eligible criteria, entitlements matrix, feedback, and a GRM, and monitoring and evaluation process for the PAPs who may be identified during the project implementation.

The RPF also establishes a framework for assessing concerns of the PAPs who may be subject to loss of livelihoods, assets, and well-being because of the Project. The AIIB's ESP (ESS2) is triggered when the Project would result in people losing land, other assets, or access to productive resources, which may disrupt or cause loss of livelihood (i.e., property and assets), well-being, and other entitlements. In this case, the RPF provides decision-makers with guidelines and processes for ensuring that PAPs will improve their livelihoods and well-being or, at least, restore them to levels prevailing at Project commencement.

The following non-negotiable resettlement principles will be followed for all the subprojects implemented under this Project:

- All subprojects (detailed designs) will be screened for social impacts (involuntary resettlement impacts and risks) with the preparation of a Land Acquisition and Resettlement Plan (LARP) or a Livelihood Restoration Plan (LRP) or a Resettlement Plan (RP), as appropriate.

- A socio-economic survey should be undertaken for each subproject to identify the PAPs having lands and immovable properties and those who lose livelihood dependent on the lands being acquired; this will also include gender analysis related explicitly to resettlement impacts and risks under specific subproject.
- If resettlement is unavoidable, resettlement activities should be conceived and executed as an integral part of the Project, providing sufficient resources to enable the persons displaced to enjoy the Project benefits.
- Entitlements and resettlement options will be communicated through transparent meaningful consultation with the PAPs.
- Compensation and rehabilitation and resettlement assistance will be paid before displacement and any project civil work.
- All compensation will be at replacement cost.
- No civil works will be initiated unless compensation for land and assets and rehabilitation and resettlement assistance is provided in full to all eligible PAPs.
- Livelihood assistance will be provided in the form of income generation measures. The Project will inform the PAPs on alternative income generation activities suitable for the area and assist them in making choices.
- The Project will monitor the provision and performance of the RP/LRP through appointed Consultants.

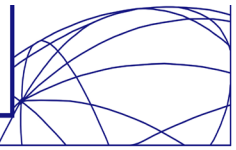
Progress related to the payment of land acquisition compensation and resettlement entitlements will be thoroughly documented with the following reporting sent to the AIIB.

An entitlement matrix below envisages all affected households, individuals, and entities losing assets and livelihood. It defines the entitlement of compensation and resettlement assistance depending on the nature of ownership rights on lost assets and the extent of the impacts, including the socio-economic vulnerability of the displaced people.

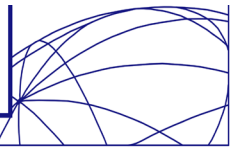
Table 2: Entitlement Matrix

No.	Impact Category	Entitlements		Implementation Guidelines
Section I. Title Holders of Asset				
1.	Loss of Land (agricultural, residential, commercial or otherwise including resident and nonresident landlords)	Land for land compensation with a plot of equal value.		▪ The landowner will receive either a replacement of land for land with equal value (and equal soil quality for agricultural lands) or cash compensation at replacement value. ▪ Stamp duty, registration fees, legal, tax, and other charges related to the land replacement will be provided against receipts.
		1.1. Agricultural land		
		a	Replacement of land for land with equal value (and equal soil quality for agricultural lands) or cash	▪ The crop owner will have a right to collect fruits and other crops within the stipulated period. ▪ Cash compensation for standing crops that could not be harvested before land repossession will be provided on the market value and in consultation with district agriculture department.

			compensation at replacement value	▪ Cash compensation for fruit-bearing trees, vineyards, and other plants will be provided on the market value considering the average annual yield for the last three years and age of the crop, vineyard, or tree after planting and in consultation with district agriculture department.
		b	one-time financial assistance equivalent to three months' minimum wage in Uzbekistan	▪ Each displaced family will receive one-time financial assistance equivalent to three months' minimum wage in Uzbekistan at the time of the census.
2.	Loss of Residential Structure	2.1. Residential structures		
		a	Replacement of the building with a structure of equal value or cash compensation on market value.	▪ Compensation is calculated by the competent certified appraiser based on the local market prices in adjacent territories for the actual moment of compensation payment, considering inflation and market fluctuation in prices in the real estate sphere. ▪ Stamp duty, registration fees, legal, tax, and other costs related to the replacement of the housing will be provided against receipts. ▪ Notification of PAP should be six months before relocation; no forced eviction is allowed.
		b	Right to salvage affected materials	▪ Right to salvage materials in favor of the affected building or structure owner if the incumbent demolishes the affected part of the building or structure by himself within the stipulated period. ▪ The compensation calculation will have no deduction for depreciation or retention of salvaged materials.
		c	One-time financial assistance equivalent to three months' minimum wage in Uzbekistan	▪ Each displaced family will receive one-time financial assistance equivalent to three months' minimum wage in Uzbekistan at the time of the census.
		d	One-time allowance of moving costs for those relocated	▪ The owner of the affected housing will receive one-time financial assistance to cover transportation costs for shifting the family and moving the furniture, building materials, belongings, and cattle, if any, to the new location. The amount of relocation assistance will be calculated during the census survey based on the market value in the respective area.
		e	Rental allowance for at least three months for those who selected cash compensation for affected house or one moth for those who selected alternative house	▪ Temporary housing of those selected cash compensation will be provided for at least three months whereas a further period will be discussed between PAPs and local authorities. ▪ Monthly allowance will be calculated during the census of PAPs based on average market rental value in respective project areas.
		2.2. Losses of structures adjacent to the residential houses such as fences, shed, tents, etc.		

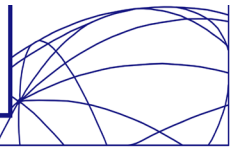


		a	Compensation at full replacement cost for affected structure/fixed assets free of depreciation and transaction cost	▪ Compensation calculation is based on the local market prices ▪ PAPs will have the right to salvage naterials if the incumbent demolishes the affected structure by himself within the stipulated period.
3.	Loss of Commercial Structures	a	Replacement of the building and other immovable property and assets attached to the land will be with a structure of equal value or cash compensation on market value	▪ Compensation will be calculated by the competent certified appraiser based on the market prices in the adjacent area ▪ Stamp duty, registration fees, legal, tax, and other costs related to the replacement of the building will be provided against receipts. ▪ Notification of PAP should be six months before relocation; no forced eviction is allowed.
		b	Right to salvage affected materials	▪ No deductions for depreciation or for retention of salvaged materials in the calculation of compensation.
		c	One-time allowance of moving costs for those relocated	▪ The owner of the affected housing will receive one-time financial assistance to cover transportation costs for shifting the family and moving the furniture, building materials, belongings, and cattle, if any, to the new location. The amount of relocation assistance will be calculated during the census survey based on the market value in the respective area.
		d	Rental allowance for at least three months for those who selected cash compensation for affected building	▪ Monthly allowance will be calculated based on average market rental value in respective project areas.
4.	Impact to Tenants (residential, commercial, agricultural)	4.1 Residential		
		a	Rental allowance for one month	▪ One-month notice to vacate the rental premises ▪ Monthly allowance will be calculated during the census of PAPs consisting of average market rental value in respective project areas
		b	One-time allowance of moving costs for those relocated	▪ One-time allowance will be calculated during the census survey based on the actual market value in respective project areas.
		4.2 Commercial		
		a	Rental allowance for one month	▪ One-month notice to vacate the rental premises ▪ Monthly allowance will be calculated during the census of PAPs consisting of average market rental value in respective project areas
		b	One-time allowance of moving costs for those relocated	▪ One-time allowance will be calculated during the census survey based on the actual market value in respective project areas.
		4.3 Agricultural tenants		



		a	Cash compensation for fruit-bearing trees, vineyards, and other crops planted by Agricultural Tenants, Sharecroppers, and Leaseholders of Land	▪ Landowners will reimburse tenants, sharecroppers, and leaseholders with respective land rental fees for unexpired tenancy or lease, if any. ▪ Cash compensation for fruit-bearing trees, vineyards, and other crops planted by Agricultural Tenants, Sharecroppers, and Leaseholders of Land will be provided on the market value considering the average annual yield for the last three years and age of the crop, vineyard, or tree after the planting in consultation with the district agriculture department.
5.	Loss of Trees and Standing Crops	a	Six months in advance to shift and harvest the crops or cash compensation will at market value for standing crops	▪ The crop owner will have a right to collect fruits, vegetables, flowers, and other crops within the stipulated period. ▪ Cash compensation will be provided at market value for standing crops that could not be harvested before land repossession and in consultation with the district agriculture department.
		b	Cash compensation for fruit-bearing trees and vineyards based on the market prices	▪ Compensations to Agricultural Tenants, Sharecroppers, and Leaseholders will be calculated considering the average annual yield for the last three years and age of vineyard or tree and in consultation with the district agriculture department.
		c	Cash compensation for timber trees based on the market prices	▪ Compensations to Agricultural Tenants, Sharecroppers, and Leaseholders will be calculated considering the tree's age and wood type and in consultation with the district agriculture department.
Section II. Additional Assistance for women-headed households (title and non-title holders)				
6.	Loss of Land, House, Shop		▪ A one-time allowance of the equivalent of one minimum wage for women-headed households who are relocated due to the project	
Section III. Non-Title Holders - Impact to squatters / encroachers				
7.	Impact to Squatters	7.1 Loss of house		
		a	Cash compensation in replacement cost for the affected structure	▪ Notification of PAP should be six months before relocation.
		b	Right to salvage materials in favor of the affected building	▪ The PAP demolishes the affected structure by himself within the stipulated period
		c	One-time allowance of moving costs	▪ Resettlement assistance is calculated by local authorities
		7.2 Loss of shop		
		a	Cash compensation in replacement cost for the affected structure	▪ Notification of PAP should be six months before relocation.

		b	Right to salvage materials in favor of the affected building	▪ The PAP demolishes the affected structure by himself within the stipulated period
		c	One-time allowance of moving costs	▪ Resettlement assistance is calculated by local authorities
		7.3 Loss of standing crops		
		a	Six-month advance notification for harvesting crops or cash compensation equal to the market value of the yield of the standing crops	▪ Notification of PAP should be six months in advance to shift and harvest the crops, fruits, flowers, etc. ▪ The crop owner will have a right to collect fruits, vegetables, flowers, and other crops within the stipulated period. ▪ Compensation will be provided for standing crops based on market value and in consultation with the district agriculture department.
8.	Impact to Encroachers	8.1 Loss of Standing Crops		
			Six-month advance notification for harvesting crops or cash compensation equal to the market value of the yield of the standing crops	▪ Notification of PAP should be six months in advance to shift and harvest the crops, fruits, flowers, etc. ▪ The crop owner will have a right to collect fruits, vegetables, flowers, and other crops within the stipulated period. ▪ Compensation will be provided for standing crops based on market value and in consultation with the district agriculture department.
		8.2 Structure		
		a	One-month notice to demolish the encroached structure	
		b	Compensation at market value for structures without depreciation for the affected portion of the structure	
Section IV. Loss of Livelihood				
9.	Loss of employment in non-agricultural activities or agricultural wages or other wage workers	a	A one-time allowance of the equivalent of one minimum wage	▪ Only agricultural laborers who are full-time employees of the affected landowner, or those affected full-time employees of the business, will be eligible for this assistance. Seasonal agricultural laborers will not be entitled to this assistance.
		b	For PAPs relying on agriculture as a source of income, the Project will provide training on sustainable land and water resources management	▪ The cost of training will be included in the Project consultants' contracts. ▪ For PAPs who opt for an alternative livelihood, the Project team will provide training sessions based on the training needs. The cost of training will be included in the Project consultants' contracts.
Section V. Impact on Vulnerable Households				
10.	Vulnerable Households (Women headed household, Low-	a	Inclusion in existing safety net programs to ensure the continuation, or	▪ For PAPs relying on agriculture as a source of income, the Project will provide training on sustainable land and water resources



	Income household, a household headed by elderly with no support and household headed physically challenged people)		increase, of previous income.	management. The cost of training will be included in the Project consultants' contracts. ▪ For PAPs who opt for an alternative livelihood, the Project team will provide training sessions based on the training needs. The cost of training will be included in the Project consultants' contracts.
		b	A one-time allowance of the equivalent of one minimum wage	
		c	Priority for employment in project-generated jobs, training opportunities, self-employment, and wage employment assistance.	
Section VI. Unforeseen Impacts				
Any unanticipated impacts identified during Project implementation will be compensated in full at replacement cost and the entitlement matrix shall be revised if required in case major unanticipated impacts occur during detailed and final design.				

1. Introduction

1.1. Background

The Government of the Republic of Uzbekistan ("GoU") requested financing from the Asian Infrastructure Investment Bank ("AIIB" or the "Bank") towards the development of the Karakalpakstan and Khorezm Water Supply and Sanitation Project intended to address issues of the water supply and sanitation issues in Uzbekistan's autonomous Republic of Karakalpakstan and Khorezm Province. The project implementation will provide reliable, safety and sustainable water supply and sewage services and improve the public health and living conditions of people living in those regions in Uzbekistan.

The Project Implementation Agency is Uzsuvta'minot Joint Stock Company (UzWJSC), Uzbekistan's national water company.

This Environmental and Social Management Planning Framework (ESMPF) was prepared for the Karakalpakstan and Khorezm Water Supply and Sanitation Project, regarding the modernisation of municipal water supply and sewerage infrastructure in Khorezm Province (the "Project").

Khorezm Province is located in western Uzbekistan and borders the Republic of Karakalpakstan in the north and west, with Turkmenistan in the south and with Uzbekistan's Bukhara Province in the east. According to the initial assessment of JSC Uzsuvtaminot, the province area is 6,300 km². With the total population being 1,958,091 people as of Q1 2023, the population density of the province is 310.80 people per square kilometre.

A comprehensive Environmental and Social Impact Assessment (ESIA) was undertaken in line with the International Finance Corporation Performance Standards (IFC PS) as part of the feasibility study of the Project. The ESMPF for the Project was built on the findings of the Project ESIA and sets out the policies and procedures for the assessment, management, monitoring, and audit of environmental and social (E&S) impacts and risks associated with the Project activities in the Khorezm Province.

1.2. Project Overview

The project development objectives are to improve the availability and sustainability of water supply and sewerage services in the region. The Project will focus on the improvement of water supply and sewerage services in the selected districts and certain urban centres, along with improving the living conditions in the province:

- The proposed project interventions under the water supply component includes rehabilitation and construction of water treatment and distribution facilities in four districts – Gurlen, Khanka, Shavat, and Urgench districts.
- The proposed project interventions under the wastewater component include construction of WWTP and collection and transmission systems in Yangibazar, Yangiarik, Shavat, Khazarasp, Bagat, and Khanka districts.

The Project description is provided in Chapter 3 below.

1.3. Purpose and Objectives of ESMPF

An ESMPF is a practical tool to ensure that E&S impacts are identified and assessed and that appropriate mitigation, management, and monitoring measures are incorporated and applied in implementation. As at this stage of project preparation, the full details of the project design have not been finalized, the ESMPF has been drafted to ensure complete coverage of any impacts that may result from design decisions to be done at a later date.

The main objective of the ESMPF is to guide the PCU in identifying and managing the potential E&S impacts and risks associated with the subprojects developed under the Project and in developing and implementing appropriate mitigation measures.

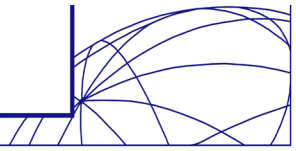
This objective will be achieved through the implementation of E&S procedures set out by Chapter 8 of this document. Those will also ensure that the subproject activities do not cause any harm and follow the applicable national regulations and AIIB's Environmental and Social Policy (ESP) as well as relevant good international industry practice (GIIP), most notably IFC PS and associated IFC Environment, Health, and Safety (EHS) Guidelines.

The ESMPF addresses the following:

- Rules and procedures for E&S screening of investments/subprojects;
- Guidance for conducting subprojects ESIAs and/or preparing ESMPs;
- Mitigation measures for possible impacts of different proposed activities and subprojects to be supported by the Project;
- Requirements for monitoring and supervision of implementing of ESIA/ESMPs, and implementation arrangements.

The ESMPF also describes measures to manage social risks, including:

- Launch of a public information/communication campaign regarding the project's objectives, activities and potential implications for project-affected persons (PAPs);
- Stakeholder consultations and disclosure of the ESMPF and selected sub project proposals/plans;



- Establishment of a grievance redress mechanism for timely resolution of requests and complaints, and other initiatives to engage with beneficiaries and Project stakeholders throughout the Project cycle.

This ESMPF also includes a Resettlement Planning Framework (RPF), which provides key information and directions needed to assure full compliance with AIIB's ESP and particularly Environmental and Social Standard 2 (ESS2), including (a) ensuring that the RPF provides for screening of all relevant project interventions to identify all project-affected parties, which may be physically or economically displaced by project investments, (b) provision of the policy and regulatory context on physical and economic displacement caused by land acquisition for investment projects, (c) identification of gaps and the measures to be taken to ensure compliance with ESS2.

The RPF provides:

- Guidance on when a Resettlement Action Plan (RAP) or an Abbreviated Action Plan will need to be prepared for a given intervention;
- An entitlement matrix or schedule of compensation and other assistance, to be provided;
- Consultations with potential project-affected people and other key stakeholders about the project, its impacts, and impact management, as appropriate;
- Assists the PCU in establishing the institutional set up for decision-making and responsibilities if a RAP needs to be prepared and implemented; and
- Develops arrangements for monitoring, evaluation, and closure.

1.4. Methodology

The methodology used to develop the ESMPF is briefly described in the sections below.

1.4.1. Review of Project Information

Detail on the Project location, facility layout and the proposed Project activities was reviewed to get an understanding of the Project footprint and the potential E&S impacts and risks.

1.4.2. Review of Legal and Regulatory Framework

Information on relevant national E&S laws and regulations and AIIB standards was collected and reviewed to identify the applicable standards for the Project.

1.4.3. Screening

Reconnaissance field visits were carried out to undertake an initial scoping and screening to determine the key E&S baseline parameters and aspects that are likely to

be affected by the Project. The scoping process determined the appropriate spatial and temporal scopes for a further ESIA and suggested suitable survey and data collection methodologies.

1.4.4. Baseline Data Collection

This task involved collection of E&S information to establish an E&S baseline for the Project area in Khorezm Province.

A combination of approaches was used for the socioeconomic baseline study, including (i) collection and review of secondary literature from different sources and (ii) conducting reconnaissance and household surveys, focus group discussions (FGDs), and key informant interviews (KII). The household survey was conducted on a sample basis in the Project area to assess the proposed project impacts on the population, the challenges associated with water use, supply, and sanitation and identify aspects that could be included in the project design. The sampling will be designed based on a list of local communities in the Project area.

1.4.5. Impact Assessment and Management Measures

An ESIA of the proposed Project was undertaken in line with GIIP to identify and assess the potential adverse and positive impacts of the proposed Project activities. All direct and indirect impacts and risks resulting from preconstruction, construction, and operation phases of the Project in both short-term and long-term were identified and assessed.

Impact identification and assessment started with scoping and continued through the study and aimed to assess all potential impacts resulting from the project's preconstruction, construction, and operation phases. The environmental and social impacts was characterized as interactions of the project activities with various environmental and social components, where the significance of the impacts was determined in the following steps: (1) identification of impacts, (2) evaluation of impact, (3) management and mitigation measures, and (4) evaluation of residual impact. The impact prediction included mapping the environmental consequences of planned activities. Once it is completed, each potential impact was described in terms of its characteristics: type, extent, duration, scale, frequency, likelihood, and magnitude. The significance of the impact was determined by assigning sensitivity to receptors and resources, and then defining magnitude of impacts, and finally, defining significance of impact. The value and sensitivity of the receiving environment and receptor was rated as high, medium, low, or negligible based on the defined magnitude. Once the value and sensitivity of the receptor/resource and the magnitude of the impacts are assessed, the significance was assigned to each impact.

Upon characterization of the impact significance, the next stage was evaluation of the mitigation and enhancement measures warranted. The mitigation hierarchy was used

to limit the negative impacts and manage risks. Residual project effects were those predicted to persist even when the prescribed mitigation measures are applied. Residual project impacts were evaluated for each project phase based on the impact assessment described above.

Site- and sub-project-specific impact assessment will be carried out as part of an ESIA of individual sub-projects to be undertaken under the Project, and the procedures for subproject ESIAs are laid out in this ESMPF.

1.4.6. Development of ESMPF

The process and outcome of the Project ESIA has been documented in the present ESMPF, which identifies the principles and procedures to conduct ESIAs of the subprojects to be implemented under the Project. In addition, it describes the responsibilities of project stakeholders, review and approval requirements, monitoring and reporting protocols, as well as plans to enhance institutional capacity through capacity building and training. The ESMPF also includes a generic environmental and social management plan (ESMP), to provide template and guidance for the sub-project specific ESIAs and ESMPs – to be prepared during the project implementation.

1.5. Study Team

Global Business Services has been engaged in the preparation of ESMPF for this project. The study team was included Val Votrin (Team Leader/Environmental Specialist), Boris Gojenko (Social Development Specialist), Kudratilla Inagamov (Resettlement Specialist), Timur Ikramov (Communication Specialist), Nosir Muminov (Gender Specialist), Camille Hennequin (Water Supply/Environmental Engineer), and supported by Dr. Laly Sattarova (Environmental Engineer), Natalya Shulepina (Social Specialist), and Valentina Kim (Field Coordinator), Khurshida Abduvalieva (Social Specialist), and Khabibullo Mirzaev (IT specialist).

1.6. Document Structure

The ESMPF is organized in eight chapters. Following Executive Summary,

- Chapter I (Introduction) provides overview of the project, ESMP purpose and objectives, methodology, study team, and document structure.
- Chapter II (Regulatory Framework and Standards) describes the applicable Uzbek regulations, policies, and standards, lenders requirements, and relevant international standards.

- Chapter III (Project Description) presents a description of the project, its various components, subprojects, and other specific information relevant for environmental and social assessment and management.

- Chapter IV (Environmental and Social Baseline Conditions) describes the physical conditions, biological environment, and socio-economic conditions of the project area.

- Chapter V (Environmental and Social Impact Assessment) describes the assessment of generic impacts of the project design, construction, and operation on the physical, ecological, and socioeconomic environment of the project area.

- Chapter VI (Environmental and Social Management Plan) details generic management and mitigation measures, allocation of responsibilities for implementing the steps among the critical project stakeholders, lays out the main aspects for monitoring the implementation of management and mitigation measures, grievance redress mechanism, and specifies capacity building.

- Chapter VII (Consultations and Disclosure) describes consultations undertaken for the project and the stakeholder participation plan during the project implementation.

- Chapter VIII (Resettlement Planning Framework) presents generic guidelines and principles of resettlement management, eligibility criteria and entitlement matrix.

2. Regulatory Framework and Standards

2.1. National Laws and Regulations

2.1.1. General

The Constitution[4] is the fundamental law of the Republic of Uzbekistan. The following articles of the Constitution specify public obligations toward environmental protection:

- Article 49 constitutes citizens' right to a safe environment and reliable information about its condition, whereas Government is obliged to conduct environmental monitoring and mitigation measures for the improvement and protection of nature
- Article 61 requires citizens to protect the environment and constitutes that environmental heritage is protected by the government
- Article 62 requires citizens to take care of the environment
- Article 66 stipulates the owner's right to the property own, use, and dispose of, whereas the owner must not cause damage to the environment or violate the rights and legitimate interests of other persons, society, and the state
- Article 68 states that lands, subsoil, flora and fauna, and other natural resources are protected by the state and considered national wealth.

These policies are headed by the President of the Republic of Uzbekistan and secure an efficient coordination of governmental authorities (Article 105). The President approves general, strategic, and specific regulations binding across Uzbekistan (Article 110). The specific regulatory documents relate, amongst others, to implementing investment projects following loan agreements and other covenants (Article 109).

The President is supported by a bicameral Supreme Assembly, Oliy Majlis. The latter has the legislature's responsibilities with the power to shape laws. The Oliy Majlis comprises the Legislative Chamber and the Parliament. The Oliy Majlis defines the national environmental and social policies, approves national ecological programs, develops, and adopts environmental and social legislation, coordinates environmental compliance monitoring actions, determines the rates of ecological charges, establishes respective incentives, etc.

The Cabinet of Ministers is the executive institution responsible for securing the efficient functioning of the national economy, social and community services, enforcement, and enacting national laws and regulations. It comprises the Prime Minister, Deputy Prime Ministers, Ministers, and the Government Executive of the Republic of Karakalpakstan (Article 114). The Cabinet of Ministers ensures the implementation of a

[4] Constitution of the Republic Uzbekistan: https://lex.uz/docs/6451070

state policy in environmental protection, biodiversity, conservation, combating climate change, epidemics, and pandemics, and mitigating their consequences.

On the local level, the Councils of People's Deputies, or the Kengash (Article 120), represent local government authorities and are responsible for the design of social and economic development and social safety net programs (Article 122). The executive power in place is represented by governors (*khokims*) who address issues within their designated service territory and are responsible for legal, environmental, health and safety, and economic, social, and cultural development (Article 123).

The environmental mandate of local government includes identification of environmental priorities for the respective territory; approval of local ecological programs; inventory and evaluation of natural resources; inventory of environmentally hazardous facilities; logistical support to environmental actions; environmental permitting; waste management; a collection of environmental charges; and environmental control (Law on Nature Protection, No.754-XII of 09.12.1992).

The Ministry of Environment, Climate Change, and Environmental Protection of Uzbekistan (Environmental Committee) is the primary environmental regulator. The Environmental Committee is responsible for developing and enforcing the national environmental and conservation policy, overseeing ecological compliance, and integrating environmental management across various national, province, and district economic sectors. The Environmental Committee has provincial branches and agencies providing scientific and technical support. The Environmental Committee' Khorezm Province Branch oversees the environmental compliance of all projects in their designated province.

There are some other government institutions with responsibilities related to environmental protection and control, including the Ministry of Agriculture, the Ministry of Water Resources, Surveys, Cartography and the State Cadastre, the State Committee for Geology and Mineral Resources, the Centre of Hydro-meteorological Service, the Ministry of Health, the Ministry of Housing and Utility Services, etc. Their responsibilities include facilitation in setting up and maintaining a robust system of state environmental control and monitoring the development and implementation of environmental programs, strategies, and action plans to address conservation and sustainability issues.

2.1.2. Environmental Impact Assessment Procedure and Its Approval

The national Environmental Impact Assessment (EIA) process is regulated by Regulation 541 and Law on Environmental Expertise No. 73-II[5], where:

[5] https://lex.uz/acts/9760

- Project categorisation is based on the nature and scale of the proposed activities and the significance of the potential environmental impacts. Projects are screened for their expected environmental impacts and assigned to one of the following four categories:
  - Category I – projects with high risks
  - Category II – projects with moderate risks
  - Category III – projects with low risks and
  - Category IV – projects with local Impact.

- Projects specified in Appendix 1 to the Regulation 541 are subject to state evaluation for the compliance with established national environmental standards.

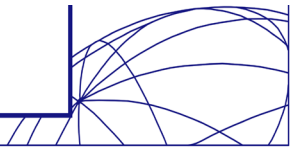
- Following Appendix 2 to the Regulation 541:
  - Projects of Categories I and II examined by the State Environmental Expertise Centre, while the projects of Categories III and IV are subject for evaluation by the territorial departments of the State Environmental Expertise Centre.
  - Project-related documents and EIA reports shall be submitted by applicant to the regulator's evaluation through online system, www.eco-service.uz
  - Submitted project documents are evaluated as following:
    Projects of Categories I are evaluated up to 20 calendar days
    Projects of Categories II are evaluated up to 15 calendar days
    Projects of Categories III are evaluated up to 10 calendar days
    Projects of Categories IV are evaluated up to 5 calendar days.

Regulator's project evaluation for environmental impacts is a mandatory and commercial service paid by the applicant. The evaluation period starts from the date of payment.

Controversial issues regarding evaluating the project environmental impact assessment between the regulator and the applicant are considered by the specially established expert council within 15 working days of filing the complaint.

The regulator evaluates the project in terms of the nature and extent of all predicted environmental impacts, residual environmental, economic, and social impacts, social benefits, alternatives, and relevance and feasibility of the proposed mitigation measures and sustainable use of natural resources. The evaluation procedure of the project EIA is implemented in the following three stages:

(a) Application for Evaluation of the Project EIA (Application)



The project documents and EIA report shall be submitted to the regulator for evaluation during the project preparation and feasibility study through www.eco-service.uz. If the project belongs to Categories I or II, the EIA report shall include meeting minutes of the public consultations conducted in the prescribed way.

(b) Environmental Impact Statement

If the project information provided with the Application is insufficient, the regulator might request additional surveys, including laboratory tests, measurements, and a scientifically feasible environmental management plan. This supplemented information shall be submitted for regulator's review before the start of the construction.

(c) Statement on Environmental Consequences

In this final stage of the project evaluation, the regulator agrees upon the modifications to the project design, environmental standards for pollutants emission, other engineering and operating documents related to the project.

The regulator's approval of the project EIA is valid for three years and can be extended for two more years. However, (a) if the project design changes, the applicant shall re-submit the project design documents and the EIA report for regulator's evaluation, and (b) If the project has not started within the approved period, the regulator, considering the nature of the design changes, deserves the right to (i) request the applicant to renew the project documents or (ii) extend its approval for the project upon considering the provided information.

2.1.3. EIA Requirements for the Water Supply and Wastewater Treatment Facilities

The table below provides an overview of the water and wastewater components against the four categories, the level of environmental authority responsible for the project's approval, and the tool for environmental assessment.

Table 3: Screening and categorisation, national regulatory requirements

Category	Risks	Main Project Components	Regulating Authority	Regulatory Requirements
Category I	High	▪ Water mains of republican and interregional significance, water storage ponds, and dams ▪ Wastewater treatment facilities with a capacity of more than 280,000 m^3/day	State Centre for Environmental Expertise under the Ministry of Ecology, Environmental Protection, and Climate Change	▪ EIA ▪ Public Consultations ▪ Environmental Impact Statement

Category	Risks	Main Project Components	Regulating Authority	Regulatory Requirements
Category II	Moderate	▪ Groundwater extraction from aquifer of interregional significance ▪ Wastewater treatment facilities with a capacity of 50,000 to 280,000 m^3/day	State Centre for Environmental Expertise under the Ministry of Ecology, Environmental Protection, and Climate Change	▪ EIA ▪ Public Consultations ▪ Environmental Impact Statement
Category III	Low	▪ Water supply facilities of the Republic of Karakalpakstan, provinces, districts, and Tashkent ▪ Chlorination facilities ▪ Wastewater treatment facilities with a capacity less than 50,000 m^3/day	Territorial departments (province-level) of the State Centre for Environmental Expertise	EIA
Category IV	Negligible	activities not related to water and wastewater	Territorial departments (province-level) of the State Centre for Environmental Expertise	EIA Checklist

In addition, the environmental authorities require the provision of the EIA separately for the area where the activities are planned and separately for drinking water and wastewater activities.

Table 4 shows that the Project activities are classified as Category III according to the Uzbek legislation. Under this category, nine national EIA reports should be prepared and submitted for state environmental expertise by the Khorezm Province Department of State Centre for Environmental Expertise.

Table 4: Categorisation of the Subprojects

No.	Project Component	Project District	Subproject	Category	Deliverable
1.	Water Supply	Gurlen	Construction and rehabilitations of water supply facilities of the Khorezm Province: WDUs, PS, PB, networks, and district and province-level water mains	Category III	EIA
2.	Water Supply	Khanka	Construction and rehabilitations of water supply facilities of the Khorezm Province: WDUs, PS, PB, networks, and district and province-level water mains	Category III	EIA
3.	Water Supply	Shavat	Construction and rehabilitations of water supply facilities of the Khorezm Province: WDUs, PS, PB,	Category III	EIA

No.	Project Component	Project District	Subproject	Category	Deliverable
			networks, and district and province-level water mains		
4.	Water Supply	Urgench	Construction and rehabilitations of water supply facilities of the Khorezm Province: WDUs, PS, PB, networks, and district and province-level water mains	Category III	EIA
5.	Wastewater	Khazarasp	Construction of district-level WWTP of 5,000 m^3/day, pumping stations, network, connections, etc.	Category III	EIA
6.	Wastewater	Shavat	Construction of district-level WWTP of 3,000 m^3/day, pumping stations, network, connections, etc.	Category III	EIA
7.	Wastewater	Urgench	Construction and reconstruction of pumping stations, pumping stations, network, connections, etc.	Category III	EIA
8.	Wastewater	Yangiarik	Construction of district-level WWTP of 2,000 m^3/day, pumping stations, network, connections, etc.	Category III	EIA
9.	Wastewater	Yangibazar	Construction of district-level WWTP of 2,000 m^3/day, pumping stations, network, connections, etc.	Category III	EIA

WDU = water distribution unit; PS = pumping station; PB = production base; EIA = environmental impact assessment; Source: ESIA

As soon as priority investment programme has been approved by the Khorezm Suvtaminot LLC, the feasibility study team prepared EIA reports, separately for the water supply and wastewater components, and submitted those to the environmental regulator.

Table 5: Submitted EIA reports and received regulator's approvals

No.	Project Component	Project District	Category	EIA Submission Date	Regulator's Approval Date
1.	Water Supply	Gurlen	Category III	15.12.2023	26.12.2023
2.	Water Supply	Khanka	Category III	15.12.2023	21.12.2023
3.	Water Supply	Shavat	Category III	15.12.2023	26.12.2023
4.	Water Supply	Urgench	Category III	15.12.2023	21.12.2023
5.	Wastewater	Khazarasp	Category III	17.01.2024	25.01.2024
6.	Wastewater	Shavat	Category III	17.01.2024	25.01.2024
7.	Wastewater	Urgench	Category III	18.01.2024	26.01.2024

No.	Project Component	Project District	Category	EIA Submission Date	Regulator's Approval Date
8.	Wastewater	Yangiarik	Category III	17.01.2024	25.01.2024
9.	Wastewater	Yangibazar	Category III	17.01.2024	26.01.2024

The validity of the provided environmental regulatory approvals for the project is 26.12.2026 for the water supply component and 26.01.2027 for the wastewater component.

2.1.4. Land Acquisition and Resettlement Regulatory Framework

Constitution of the Republic of Uzbekistan

The Constitution of Uzbekistan[6] has the following applicable provisions:

- Article 41 provides that all have the right to own property, although the distinction between movable and immovable is not made.
- Article 68 states, "*The land, its minerals, fauna, flora, and other natural resources shall constitute the national wealth and be rationally used and protected by the state. Land may be privately owned on the terms and in the manner prescribed by law and ensuring its rational use and protection as national wealth.*" This provision specifies the clear inference that land is treated as "*national wealth*," so the state retains land ownership, but allows to own the land in the specific cases.
- Article 47 of the Constitution states that owners deprived by a court decision and the law of their houses are provided with respective compensation.
- Article 65 of the Constitution provides for equality and legal protection of all forms of ownership. Private property is said to be inviolable. An owner may be deprived of property only as prescribed by law and a court decision.
- Article 66 of the Constitution stipulates that an owner, at his discretion, shall possess, use, and dispose of his property, whereas the use of the property must not cause damage to the environment or violate the rights and legitimate interests of other persons, society, and the state.
- Article 127 of the Constitution specifies makhalla as self-governing authorities selected by community residents. A makhalla is responsible for making decisions regarding problems of local importance, considering community interest, historical and social roots, and national values.

Land Code

The Land Code[7] is Uzbekistan's principal legal foundation governing land policy and tenure. The distinction between land and permanent structures attached to land is

[6] Constitution of the Republic of Uzbekistan, 01.05.2023
[7] Land Code of Uzbekistan, 01.07.1998

strongly present in the Land Code and does not mirror the concept contained in the Civil Code, which appears to deal with land and buildings as a single concept.

Following Article 4, the land is a national asset, to be used rationally and protected by the state for the well-being of the people of Uzbekistan.

Article 8 specifies eight land categories: (1) agricultural lands; (2) residential areas; (3) land allocated for industrial enterprises, transport, communication, defense, and other purposes; (4) protected natural and recreation areas; (5) land under architectural and cultural sites; (6) forest land; (7) land under water bodies; and (8) reserve lands. Transferring them from one category to another is regulated by Article 9 and is carried out by the governors (khokims) of the province and the city of Tashkent. However, the transfer of agricultural land to another category is carried out by the decision of the President of the Republic of Uzbekistan.

Article 15 describes the land cadaster system, which shall be used as the primary document in land use, protection, acquisition, withdrawal, and other activities.

Article 17 provides the right for land ownership by individuals and legal entities only for non-agricultural lands. It also specifies that no foreign citizens and legal entities have such a right; they could only own land plots through leasing arrangements unless they are embassy or international organization (Article 18).

The other Articles of Land Code describes the following forms of land tenure:

- Article 20 states that land is provided for permanent use to the government agencies, institutions, organisations, and self-government bodies of citizens for public needs based on the decision of the province governor (khokims) or the governor of city of Tashkent.
- Article 21 provides the right for joint possession and use of land.
- Article 24 specifies a land lease in the form of a fixed-term, paid possession, and temporary use right. Agricultural lands can be leased for 30 years, non-agricultural lands for no more than 100 years, while foreign firms and citizens can lease land for up to 25 years.

Article 30 describes the possibility of establishing an easement due to the organization of passage, drainage works, laying and operating of communication lines and utility infrastructure, and other needs. An easement is established through an agreement between the organization requesting it and the landowner, user, or lessee. If no agreement is reached, a court makes a decision.

Land Code provides that:

- Withdrawal of land belonging to individuals and legal entities on the right of lifetime inheritable possession, permanent possession, permanent use, fixed term

(temporary) use, or lease for public interest with the compensation is carried out in a way prescribed by law (Article 37).

- Losses caused by violating the rights of landowners, land users, and tenants (including lost profits) shall be reimbursed in full (Article 41, Clause 3).
- Withdrawal in the public interest of land owned by individuals or legal entities on the right of lifetime inheritable possession, permanent possession, permanent use, fixed term (temporary) use, or lease is carried out only after total compensation as prescribed by the law (Article 41).
- The Land Code (Article 36, Clause 1) specifies provisions where the right to the land can be terminated. The right of ownership or permanent or temporary use of the entire land plot or part thereof, as well as the lease of the land, shall be terminated in the following cases:

  - Voluntary abandonment of a land plot.
  - Expiration of the period for which the land plot was provided unless prolongation of the lease agreement.
  - Liquidation of a legal entity.
  - Termination of labor relations in connection with which the land was provided unless otherwise provided by law.
  - Use of the land not for the intended purpose.
  - Irrational use of land classified as agricultural land and resulted in a decreasing yield indicator below the value for three years.
  - Use of land in ways that lead to decreased soil fertility, chemical or radioactive contamination, and deterioration of the environment.
  - Non-payment of land tax by the requirements of applicable legislation or non-payment of rent following the lease agreement.
  - Non-use of provided agricultural land during the year and non-use of non-agricultural land for two years.
  - Termination of membership of a farm in the Council of Farmers, Farms, and Owners of Homestead Lands of Uzbekistan.
  - Withdrawal of a land plot as prescribed by the Code.

Article 39 (item 7) states that the land user, tenant, and landowner have, among others, the right to reimbursement of losses (including lost profits) in the case of land withdrawal or compensation for costs in the case of voluntary abandonment of land.

According to Article 87, losses of agricultural and forestry production caused by the withdrawal of agricultural and forest lands, including lands owned and used by individuals for their use in non-agricultural or forestry activities or losses resulting in land deterioration due to the project activities, are subject to compensation. However, agricultural and forestry losses are not compensated if the easement was set up for the construction of residential buildings, cemeteries, public educational and medical institutions, orphanage houses, reclamation, and water infrastructure, and protected natural areas, defense, and state borders.

Civil Code

The following outlines the main articles of the Civil Code[8] regarding land rights, including land issues, agricultural restructuring, and land transactions:

- The Civil Code provides that land may be held in ownership (Article 169). Both private and state ownership are allowed (Article 167), and the ownership right of land "shall arise in instances, in the procedure and upon the conditions provided for by legislation" (Article 188). Other forms of land tenure include the right of economic jurisdiction, the right of inheritable possession for life, permanent possession, and use of a land plot, and easements (Article 165).
- Property can be held in common or in joint ownership. The Civil Code provides general rules for shared ownership and property division (Articles 216-227). Separate legislation may give specific rules for dividing joint property (Article 226).
- If registration or notarization is required when property is alienated, the right of ownership arises at the time of registration or notarization. If both are needed, the right of ownership arises only at registration (Article 185). In earlier provisions, the code states that the right of ownership, transfer, limitation, and termination of rights to immovable property shall be subject to state registration (Article 84).
- Nationalization with compensation is allowed following law (Article 202), and requisition with payment is permitted in case of a natural disaster, epidemic, or other extraordinary circumstances (Article 203). Furthermore, the right of ownership can be terminated by the owner voluntarily, the owner's unilateral decision determining the fate of the property, compulsory acquisition through a court decision, or by an act of legislation (Article 197). If an act of legislation removes the right of ownership, the losses caused to the owner, including the property's value, shall be compensated by the state. Disputes concerning compensation are to be settled by the court (Article 233).
- The value of the seized property is determined by appraisal organization (Article 205) based on the market prices of similar properties (Article 206) unless otherwise provided by law. This assessment may be contested in court (Article 205). If a state agency's decision terminates ownership rights and that decision is not directed toward the owner of the assets, the owner must be provided with property of equal value and be compensated for all losses. If the owner disputes the termination, the property cannot be withdrawn until the dispute is resolved in court (Article 206).

[8] Civil Code of Uzbekistan

Housing Code

The Housing Code[9] regulates relations among citizens, legal entities, government bodies and public authorities on the property rights, including their change and termination of the right to own and use residential premises (Article 2).

The Housing Code set minimum standards for housing conditions that all rental housing, new or existing, must meet to protect the health of residents (Article 9).

Article 11 of the Housing Code specifies provisions where:

- Residential premises can be privately or publicly owned and transferred from one form of ownership to another in the manner prescribed by law.
- The right of housing ownership is indefinite and represents a person's right to own, use, and dispose of residential premises belonging to him at his discretion and in his interests, without violating the rights and legally protected interests of citizens, legal entities, and the state.
- Modification, reconstruction, or demolition of residential premises is permitted with the appropriate permission from local government authorities.
- Private ownership of residential buildings, apartments, part of a house, or an apartment is not limited in number, size, and cost.
- Residential buildings and apartments that are privately owned cannot be seized, i.e., the owner cannot be deprived of the right of ownership of a residential building or apartment, except in cases established by law.
- Forced seizure of residential premises is allowed only based on a court decision in cases and the manner prescribed by law.

Article 13 specifies that the real estate rights and concerned transactions are recorded with the specific authorized department providing a document on property ownership.

Article 27 provides the following provisions:

- If private housing is demolished due to the land acquisition in the public interest, the real estate owners are provided with equivalent housing of their choice and by the parties' agreement. The new housing area must be no less than the established social norm.
- The owner is paid the market value for a planting on the property to be demolished.
- Instead of receiving new housing to replace the demolished one, the owners may be paid the total market value of the houses, structures, plantings, and land plots.

[9] https://lex.uz/acts/106134

Article 30 states that the real estate owners whose property is demolished due to the seizure of land in the public interest can move and restore their assets at the new location.

Law on Protection of Private Property and Owner's Rights

Article 19 of Law[10] No. LRU-336 dated 24.09.2012 specifies that:

- The private property acquisition by the government should be governed by the procedure established by applicable legislation. This also includes the provision to the owner of an equivalent property and compensation for other losses incurred or compensation in full for the losses caused by the termination of the right of ownership.
- The land acquisition is accompanied by the issuance of relevant orders and resolutions of local authorities, including the governors of district, province, city, etc.
- Demolition of a house, other structures, facilities, or plantations on the plot of land subject to withdrawal shall not be permissible unless prior and complete compensation of losses at market value is provided.
- The relevant government authorities shall notify the property owners about their decision in the written form no less than six months before the commencement of demolition.
- The appraisal of a house, structures, facilities, or plantations located on the land plots being acquired shall be done by appraisal companies per the established procedure.
- In case of the owner's disagreement, the decision to terminate the right on private property shall not be executed until the court settles the dispute. During the settlement, the issues related to compensation to the owner for caused losses shall also be solved.

Law on Procedure for Lands Withdrawal in the Public Interest with Compensation

The Law No. LRU-781[11] dated 29.06.2022 specifies procedures for the withdrawal of land plots or their parts owned by individuals and legal entities based on the right of lifetime inheritable possession, permanent possession, permanent use, fixed-term (temporary) use or lease, in the public interest with compensation.

Article 4 specifies purposes which shall be deemed the basis for the land acquisition in the public interest, including:

- Provision of land for defence and state security needs, alienating protected natural areas, and creating and operating free economic and trade zones.
- Fulfilment of obligations arising from international treaties.

[10] https://lex.uz/ru/docs/4402206
[11] https://lex.uz/docs/6355530

- Development of mineral deposits.
- Construction of roads and railways of republican and local significance, airports and their facilities, bridges, subways, tunnels, engineering and energy systems, space activities facilities, main pipelines, engineering and communication networks, irrigation, and melioration systems.
- Execution of approved master plans for residential areas.

Article 5 states that land acquisition should follow the basic principles of legality, priority of ownership rights, inviolability of private property, openness and transparency, and compensation guarantee.

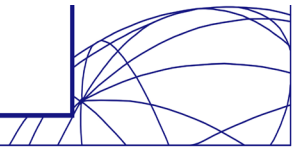
Article 6 specifies the establishment of Centralized funds under the Cabinet of Ministers of Uzbekistan, Council of Ministers of the Republic of Karakalpakstan, province-level government authorities (khokimiyat), and Tashkent municipality for compensation of losses to individuals and legal entities when land is withdrawn in the public interest.

Article 9 states that the Supervisory Boards are supreme governance units making decisions (Article 10) on compensation for losses to individuals and legal entities whose land was withdrawn in the public interest.

Article 11 specifies setting up of a commission oversight of compensating the affected people. The commission shall comprise ten deputies, three representatives of non-governmental non-profit organizations, a representative of the territorial division of the Ministry for Economic Development and Poverty Reduction, territorial financial authority, and Cadaster Agency.

Chapter 3 of the Law details the procedure for land acquisition in the public interest in ten articles (Articles 13 to 22):

- Article 13 requires the provision of supporting documents for the withdrawal of land in the public interest due to the absence of another suitable land plot for the implementation of the project. These documents are submitted to the Council of Ministers of the Republic of Karakalpakstan, khokimiyats of provinces, or the city of Tashkent, who coordinate the proposed project with territorial building departments of the Ministry of Construction of Uzbekistan and Cadaster Agency. Within the ten-days period, the representatives of the building departments review the proposed project in compliance with the master plans of the area, while cadaster departments determine a complete list of the landowners with their corresponding information. Upon receiving the information from the line departments, the Council of Ministers of the Republic of Karakalpakstan, khokimiyats of provinces, or the city of Tashkent, within a month, determine preliminary compensation and costs to be reimbursed for the withdrawal of certain land in the public interest.



- Article 14 describes provisions related to the withdrawal of lands due to the implementation of the Cabinet of Ministers of Uzbekistan regulations. In this case, all supporting and, if needed, additional documents are reviewed by the Cabinet of Ministers with the issuance of the corresponding decision in the form of a regulation.

- Article 15 provides for coordination of the determined preliminary compensation and reimbursement costs within five days with the Supervisory Board, which in turn provides its decision within ten days.

- According to Article 16, the project, with supporting documents and written approval by the Supervisory Board, is submitted to the Council of People Deputies, who make a decision (Article 17) on the project rationale and the rationality of the expected costs associated with the seizure of a land plot. If the project is declined by the Council of People Deputies (Article 18), it can be re-submitted with additional or revised documents within a month. However, if the project is declined a second time, the project cannot be re-reviewed during the next five years. The final decision on land withdrawal, size of compensation, and costs for reimbursement is made at a public hearing (Article 18) which is being carried out within a month upon positive decision of the Council of People Deputies (Article 20). The landowners shall receive written notification of the venue and time of the public hearing after two working days upon the project approval by the Council of People Deputies but not less than seven days before the public hearing. The information on public hearings shall be published on the websites of the Council of Ministers of the Republic of Karakalpakstan, khokimiyats of provinces, or the city of Tashkent. The public hearing ends with the preparation of meeting minutes specifying its place, time, participants, agenda, comments, and decisions made. The decision to withdraw land withdrawal is made by a two-thirds majority vote of the total number of deputies. The next day, the minute of the meeting is published on the websites of the Council of Ministers of the Republic of Karakalpakstan, khokimiyats of provinces, or the city of Tashkent. Within one month, after public hearings, the Council of People's Deputies prepares a regulation on the withdrawal of land in the public interest with relevant information on the land plot, which is then submitted to the Ministry of Justice of Uzbekistan for legal review and compliance with Law No. LRU-781.

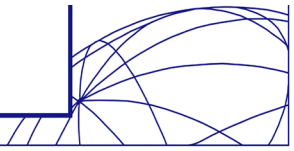
- Upon legally approval of the land withdrawal, the Council of Ministers of the Republic of Karakalpakstan, khokimiyats of provinces, or the city of Tashkent make a written agreement with landowner on the compensation type and size period for its provision (Article 22).

Chapter 4 (Articles 23 to 27) specifies options for compensating the affected people, where buildings, plants, land, and transportation costs related to relocation are subject to compensation in the form of new land and buildings, payments, and other

compensation options as specified in the agreement between the government authority and the property owner:

- Following Article 23, compensation is provided market value of the immovable assets, right for land (except for the lease right for agricultural lands), perennial crops, and relocation costs including temporary renting of house, lost profits that could have been received from the use of the land plot and buildings, and other costs. As compensation for the inconvenience caused by the withdrawal of the land plot, five percent of the market value of the buildings located on the land is paid at one time. Unauthorized constructed residential or non-residential premises, industrial and other buildings, and structures on the withdrawn land are subject to total compensation on their market value. Non-titled owners who pay property taxes and can provide supporting documents are subject to compensation for immovable assets. Standards for assessing the compensation are established by the Agency for State Asset Management of Uzbekistan.
  The compensation can be provided in a monetary form, including for temporary rent of residential and non-residential buildings, as replacement of immovable asset, and other types of compensation as provided in the agreement with the owner. The period for providing a newly constructed building to replace the demolished structures should not exceed twenty-four months from giving another immovable asset for temporary use.
- Article 25 specifies the order and period for provision of compensation, where among other things provides that:

  - When land with multistore apartment building is withdrawn, by agreement of the parties, the owner is provided with an equivalent apartment of an area not lower than the social norm and in the same or another location at the owner's choice.
  - When land with non-residential building is withdrawn, by agreement of the parties, the owner is provided with an equivalent non-residential building of an area not lower than the original one and in the same or another location at the owner's choice. Until this individual house is transferred, the owner and family members are provided with non-residential premises for temporary rent.
  - When land with an individual house is withdrawn, by agreement of the parties, the owner is provided with an equivalent house of an area not lower than the social norm and in the same or another location at the owner's choice. Until this individual house is transferred, the owner and family members are provided with comfortable residential premises for temporary rent.
  - When land being in lifelong inheritable possession, permanent possession, permanent use, fixed-term (temporary) use or lease is withdrawn, the right holder is paid compensation in an amount equal to the market value of the land plot.



  - Participants in common joint property are compensated according to their shares in the common property.
  - The period for settling the agreement with owners whose land is withdrawn in the public interest shall be no more than three months from the agreement made with the first right holder.
  - Compensation shall be provided within the timeframe mentioned in the agreement but not later than six months from the date of signing. If the agreement outlines cash compensation, it shall be provided within one month from the date of signing.

- Article 26 provides for registering the documents confirming the provision of compensation into the cadaster management information system.
- Article 27 specifies the monitoring of the implementation of agreements made with owners eligible for compensation.

Law on Homesteading

The Law on Homesteading[12] No. ZRU-681 dated 1 April 2021 specifies that:

- Homesteading is associated with cultivating and processing agricultural products for personal consumption by households and free trade.
- Homestead is not a business and does not require registration with the authorities. However, individuals involved in homesteading as a business, i.e., cultivation and processing of agricultural products for market, may register with relevant authorities for taxation purposes.
- Agricultural products cultivated and processed on the homestead are private property.
- Homestead could be from the agricultural and forest category lands and from the residential areas.
- Homesteads provided based on lifelong inheritable ownership can be leased for temporary use while preserving the property right.

Law on Valuation

The Law on Valuation[13] No. 811-I dated August 19, 1999, provides for the following main provisions:

- Valuation could be conducted only by the accredited legal entity (Article 4).
- Valuation company is independent and could not be set by the government (Article 4).
- The valuation objects include movable and immovable property, rights of claim, obligations (debts), works, services, information, intellectual property, and other objects (Article 5).

[12] https://lex.uz/docs/5351507
[13] https://lex.uz/docs/24701

- The valuation of the object is carried out in monetary value (Article 6).
- Fair market value is the price of an asset when buyer and seller have reasonable knowledge of it and are willing to trade without pressure (Article 7).
- The right to conduct an asset valuation is unconditional (Article 10).
- The valuation is mandatory if (1) the asset is owned in whole or in part by the government and (2) there is a dispute about the asset value (Article 11).
- The basis for asset valuation is a contract signed by the valuation company and the client or, in some cases, provided for by law due to a court ruling (Article 12).
- Article 13 provides mandatory details to be included in the contract for asset valuation.
- If the client disagrees with the performed asset valuation, the dispute is subject to consideration by the court (Article 18).

Law on Land Cadastre

The Law on Land Cadaster[14] No. 666-I dated 28.08.1998 sets out the legislative framework governing the setting up, management and functioning of the land cadaster, a comprehensive registry capturing the physical, legal, and economic attributes of immovable properties.

The law prescribes precise criteria and methodologies for ascertaining the cadastral value of immovable properties, grounded in market valuation, and considering natural and monetary indicators. The legal framework governs the cartography of the cadaster, encapsulating the creation of maps and graphical representations, which delineate property sizes, shapes, locations, and provide geographical details, including territorial boundaries. It delineates the regulations for accessing, sharing, and disseminating cadastral information, consistently upholding data protection principles.

The legislation fosters collaboration and information exchange amongst local governments, government bodies, notaries, and other public entities that possess a vested interest or impact on the cadastral data, facilitating the efficient operation and utilization of this vital registry.

Presidential Order on Ensuring Ownership Rights of Individuals and Business Entities

Presidential Order No. PF-5491[15] dated 3 August 2019 supporting the unconditional rights of individuals and legal entities for their property. The main provisions of the regulation include the following:

- The involuntary resettlement activities associated with land acquisition in the public interest should be consulted with the centralized fund for compensation

[14] https://lex.uz/uz/docs/9704
[15] https://lex.uz/docs/4460115

of losses to citizens and business entities established under the Cabinet of Ministers.

- The Ministry of Construction of Uzbekistan, with the Cabinet of Ministers of Karakalpakstan and province-level municipalities, should minimize the acquisition of land owned by citizens and business entities when planning urban development programs.
- Territorial working groups should be set up for the inventory of acquired land in the public interest, verification of compensation paid to citizens and business entities, and development of mitigation measures to eliminate deficiencies in loss compensation.
- This regulation requires establishing of the roadmap for inventory of the acquired lands, structures, etc. belonging to the individuals and legal entities.

Law on Appeal of Individuals and Legal Entities

The Law on Appeals of Individuals and Legal Entities[16], No. ZRU-445, 11.09.2017, regulates appeals, recommendations, and complaints of individuals and legal entities to government authorities and organisations. The main provisions are briefly specified in the following articles:

- Article 5 stipulates that the complainant may submit its complaint/appeal orally, in writing, or electronically.
- Article 6 requires the complainant to specify their full name and address and may include e-mail and other contacts of the complainant. Complaints/appeals may be submitted in Uzbek or other languages.
- Articles 8-14 require the government authorities and organisations to establish a complaint management system.
- Article 16 provides for non-discrimination in considering the grievance regardless of gender, race, nationality, language, religion, social origin, beliefs, etc.
- Article 21 describes the procedure for complaint/appeal submission.
- Article 22 stipulates no deadline for complaint/appeal submission but limits the period for complaint/appeal submission up to one year since the complainant identified that they were negatively affected.
- Article 23 states that any appeal or grievance shall be registered and considered.
- Article 24 describes a procedure for complaint/appeal management.
- Article 24(1) discusses the opportunity for children to submit a complaint/appeal.
- Article 28 specifies that the complaint/appeal shall be redressed within 15 days and, if needed additional investigations, the complaint/appeal shall be redressed for up to one month, while the consideration of complaints/appeals requiring in-depth analysis may be extended for up to another month.

[16] https://lex.uz/docs/3336171

Law on Amendment of Several Regulations due to Improvement of Land Law

The Law No. ZRU-871[17], dated 23.10.2023, amends the Civil Code and Land Code regarding the easement agreement, the rights and obligations of the easement participants, the terms for changing the easement and its cancellation, payment, and the establishment of a public easement.

The Law specifies the procedures for transferring rights and obligations to the asset to another person, for providing land plots for rent, and the grounds for terminating the ownership rights of individuals and legal entities to land.

This Law will expand rental relations further, legal regulation of relations related to the establishment of easements, and reliable protection of the rights of landowners, land users, tenants, and owners of land plots.

The Tenant Law No. 427-XII[18], dated 19.11.1991, was amended on Article 8^1 with the following key provisions:

- The tenant may transfer rights and obligations under landlord-tenant relations to another person with the landlord's consent.
- The tenant may transfer rights and obligations on rented agricultural land to another person only in cases provided for by law.

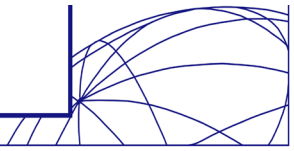
The Civil Code was amended on Article 173 and provides for:

- Landowners, land users, tenants, and owners of land plots have the right to demand a proportionate payment for the use of their land.
- Land tax and lease are paid by the landowners, land users, tenants, and owners of land plots, while the easement payment should not be less than the land tax and lease amount.
- Other amendments.

The Land Code was amended on Articles 5, 17, 18, 23, 24, 25 and 30 where some provision include:

- Article 5 introduces the terms and conditions for establishing easement in the public interest.
- Article 17 provides for foreign persons and legal entities, stateless persons, and enterprises with foreign investments can only lease land except for cases provided by the code. The article also states that in cases provided for by law, legal entities and individuals have the right to privatize non-agricultural land that they have under the right of permanent use (ownership), lease, or lifetime inheritable ownership.
- Article 25 specifies that:

[17] https://lex.uz/docs/6643526
[18] https://lex.uz/docs/112910



  - A public easement for geological, topographic, and other engineering surveys is established by a decision of the governor of the province based on an application of the organization that received the permit or issued this permit.
  - A public easement is established for up to one year to conduct the survey on irrigated arable land, gardens, vineyards, mulberry fields, berry fields, hayfields, pastures, and forests. In this case, the easement can be extended this period, if necessary, for no more than one year.
- Article 30 provides for
  - Easement as a nonpossessory right to use and/or enter onto the real property of another without possessing it.
  - Easement is established for the engineering communications and irrigation works, water withdrawal for irrigation and livestock watering, driving livestock, creation of protective green belt and other environmental protection measures, etc.
  - Easement is established based on a mutual agreement between the persons who demanded its establishment and the owner; if the agreement is not reached, the easement is established by a court of law.
  - Other provisions.

Resolution of the Cabinet of Ministers on Additional Measures to Guarantee Ownership Rights of Individuals and Legal Entities and Improving Procedure on Land Acquisition and Provision of Compensation[19], No. 911, 16.11.2019

The resolution foresees the following key provisions:

- The Council of Ministers of the Republic of Karakalpakstan, province khokimiyats, and Tashkent khokimiyat established departments to coordinate land acquisition and compensation as part of their organizational structure. These departments comprise two specialists; however, if needed, a "specialist on land acquisition and compensation" position may be added to the district khokimiyat organizational structure.
- Department tasks include (1) overview of the resources such as monetary funds, land, and other assets for provision to the affected people as compensation; (2) preparation of project documents for Council of People Deputies; (3) arrangement of public hearing with affected people whose land is withdrawn; (4) accounting of agreements made with affected people; (5) control over the compensation provision; (6) reporting to the Cabinet of Ministers of Uzbekistan on seized lands, compensations provided, demolished structures, and construction activities implemented on the seized lands.

[19] https://lex.uz/docs/4597630

- Procedure on Land Acquisition and Provision of Compensation was amended by referring to the Resolution of Cabinet of Ministers of Uzbekistan No.1047[20], where:
  - Following Chapter 4, the Republic Compensation Fund provides the amount allocated for the compensation of affected people.
  - Compensation will be provided only upon receiving a request from the Council of Ministers of the Republic of Karakalpakstan or province khokimiyats and the provision of the supporting documents, including the decision of the Cabinet of Ministers of Uzbekistan on the withdrawal of land in the public interest, relevant report of the building departments positive decision of the Council of People Deputies, copies of asset evaluation report and land ownership documents, copies of notarized agreement with affected people or court decision.
  - The Supervisory Board of the Republican Compensation Fund reviews the provided documents and decides whether to provide or decline compensation to the affected people. In case of a positive decision, corresponding instructions are provided to the territorial units at the district or city-level authorities. The local authorities review the provided supporting documents once again and prepare the order for the provision of compensation by the accounting service of the district khokimiyats to affected people.
  - Chapter 5 specifies an order for the provision of compensation for property and moral damage requiring the provision of the application, court decision, original writ of execution, and bank details of the applicant to the Council of Ministers of the Republic of Karakalpakstan, province khokimiyats, and Tashkent khokimiyat.

Resolution of the Cabinet of Ministers of Uzbekistan on Measures to Improve the Procedure for Providing Land for Urban Planning and Other Non-agricultural Activities

Resolution No. 146, 25.05.2011[21], specifies procedure on compensation for losses of owners, users, tenants, and owners of land plots, as well as losses in agricultural and forestry production with the following key provisions:

- Compensation for demolition of residential houses and structures is carried out following Regulation of the Cabinet of Minister of Uzbekistan No. 97, 29.05.2006.
- Compensation is provided for agricultural and forestry losses, including lost profits, to affected individuals and legal entities.
- Losses of landowners, users, tenants, and agricultural and forestry losses are determined by the "Uzdaverloyikha" State Research and Design Institute and its territorial divisions, cadaster departments of the Republic of Karakalpakstan,

[20] https://lex.uz/docs/4130273#4131474
[21] https://lex.uz/docs/1804031

provinces, and the city of Tashkent and building departments determine the agricultural and forest losses based on the calculations of appraisal firm.

- The amount of losses is considered by the commissions for land management under the Cabinet of Ministers, the Council of Ministers of the Republic of Karakalpakstan, province, districts, and cities khokimiyats and approved by government authorities.
- Losses of landowners, users, tenants, and agricultural and forestry losses are compensated before transferring the title to land to a new owner, user, or tenant.
- Affected landowners, users, and tenants have the right to appeal to a court of law if they disagree with the compensation provided.
- Losses of owners, users, tenants, and owners of land plots are determined and compensated in full (including lost profits) in the following instances: (i) seizure, redemption, or temporary occupation of land; (ii) restrictions on their rights to a land plot due to the establishment of security, sanitary, and protection zones around state reserves, reserves, national natural parks and monuments, cultural and historical sites, reservoirs, water supply sources, resorts, along rivers, canals, roads, pipelines, and communication and power lines; (iii) deterioration of land quality caused by the construction and operation of reservoirs, canals, collectors and other objects, and leading to a decrease in yield and deterioration in the quality of agricultural products.
- In case of seizure, redemption or temporary occupation of land plots, the following are subject to compensation: the cost of a land plot that is privately owned by legal entities and individuals; the cost of residential buildings, buildings, and structures, including objects whose construction has not been completed; the cost of fruit and berry and perennial plantings; value of unfinished agricultural production; and lost profit.
- Losses associated with the seizure of unauthorized occupied lands are not subject to compensation.
- Appraisal organizations determine the value of land owned by legal entities and individuals based on the market prices when deciding to seize the land.
- The appraisal of fruit-bearing fruit and berry plantings, protective plantings, and other perennial plantings is carried out based on the cost of seedlings, planting, and growing them before fruiting or crown closure at current prices during the assessment period.
- The appraisal of non-fruit-bearing fruit and berry plantings, protective and other perennial plantings with an open crown is based on actual costs incurred.
- Compensation for unfinished agricultural production includes the cost of materials consumed (seeds, fertilizers, etc.) and performed work (sowing seeds, watering, processing crops, etc.), and provided against accounting documents.
- The agricultural losses are calculated based on the area withdrawn from arable lands, perennial plantings (orchards, vineyards, mulberries, fruit nurseries, berry fields, and others), fallow lands, hayfields, and pastures, including lands provided for farming.

Resolution of the Cabinet of Ministers of Uzbekistan on Measures to Increase Effectiveness of Preparation and Implementation of Projects with International Financial Institutions (IFIs) and Foreign Government Financial Organizations

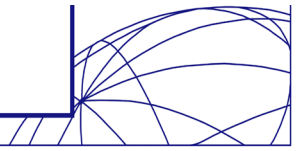
Resolution No. PP-3857[22], 16.07.2018, specifies that authorized agencies are responsible for compensation due to the seizure of land, demolition of houses, buildings, structures, or damage of plantings as part of the project implementation if provided for in the agreement with International Financial Institutions and Foreign Government Financial Organizations.

2.1.5. Community and Occupational Health and Safety

Occupational health and safety in Uzbekistan is regulated by a number of laws and by-laws, including the following:

- Labor Code[23]
- Law "On occupational health and safety[24]"
- Construction Standard No. KMK-3.01.02-00[25] "Occupational health and safety during contraction"
- Regulation No. 272[26] "On the organization of occupational safety training"
- Public Health Standard No. 0346-17[27] "Sanitary rules and regulations on labor and working conditions to be set at the enterprises"
- Regulation of the Cabinet of Ministers No. 286[28] "On the investigation and recording of industrial accidents and other injuries to the health of workers related to the performance of their job duties"
- Regulation No. 273[29] "On the organization of labor safety"
- Regulation No. 870[30] "On the development of health and safety procedure"
- Law No. ZRU-226[31] "On fire safety"
- Construction Standard No. KMK 3.01.07-98[32] "Fire safety rules during construction, reconstruction, expansion of buildings and structures, and their modernization"
- Law on Workers' Compensation Insurance[33]

22 https://lex.uz/docs/3823562
23 https://lex.uz/ru/docs/6257291
24 https://lex.uz/acts/97258
25 https://lex.uz/en/docs/4438824
26 https://lex.uz/docs/699606
27 https://ssv.uz/ru/documentation/sanpin-0346-17-sanitarnye-pravila-i-normy-dlja-predprijatij-i-proizvodstv-negosudarstvennoj-formy-sobstvennosti-i-individualnoj-trudovoj-dejatelnosti
28 https://lex.uz/docs/545122
29 https://lex.uz/docs/700108
30 https://lex.uz/docs/515009
31 https://lex.uz/docs/1521663
32 https://mc.uz/uploads/mcuz_165664024748.pdf
33 https://lex.uz/acts/1471201



- Regulation of the Cabinet of Ministers No. 532[34] "On compulsory insurance for construction at the expense of public funds and loans under government guarantee"
- Law No. ZRU-155[35] "On mandatory vehicles owners' insurance."

The applicable regulatory framework provides for establishing an effective health and safety system at the construction site with corresponding procedures, training, communication system, and equipment for the workers and visitors with personal protective equipment.

2.1.6. Archaeology and Cultural Heritage

Valuing cultural heritage and the historical remains of the previous generations are protected by Uzbek law. The applicable legislation related to archaeology and cultural heritage includes the following key legal documents:

- Law "On Protection and Use of Archaeological Heritage Sites"[36], No. ZRU-229 dated 13.10.2009
- Law "On the Protection and Use of Cultural Heritage"[37], No. 269-II dated August 30, 2001
- Decree of the Cabinet of Ministers of Uzbekistan "On Measure for Further Improvement of Protection and Use of Cultural Heritage"[38], No. 269 dated 29.07.2002.

2.1.7. Traffic and Transportation

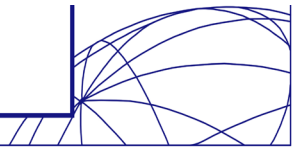
The relevant regulation on the traffic safety in Uzbekistan is Law on Traffic Safety[39], No. 818-I dated August 19, 1999. The law aims to protect citizens' life, health, and property, as well as their rights and legitimate interests, as well as the natural environment.

2.1.8. Ecology

The relevant regulations related to ecology and biodiversity protection in Uzbekistan include the following:

- Law "On Nature Protection," No. 754-XII, 09.12.1992
- Law on Environmental Control No. ZRU-363, 27.12.2013
- Law "On Environmental Audit," No. 678, 15.03.2021

[34] https://lex.uz/docs/351510
[35] https://lex.uz/docs/1342476
[36] https://lex.uz/docs/1526179
[37] https://lex.uz/acts/10375
[38] https://lex.uz/ru/docs/285209
[39] https://www.lex.uz/acts/24739



- Law on the Protection and Use of Flora No. ZRU-409, 21.09.2016
- Law on the Protection and Use of Fauna No. ZRU-545-I, 26.12.1997
- Law on Specially Protected Natural Areas No.710-II, 03.12.2004
- Law on Protection of Ambient Air, No. 353-I 27.12.1996
- Law on Forest, No.770-I, 15.04.1999
- Law on Subsoil, No. 2018-XII, 23.09.1994
- Law on Water and Water Use, No. 837-XII, 06.05.1993.

2.1.9. Waste Management

The Law on Waste No.362-II[40] of April 5, 2002, regulates solid waste management in Uzbekistan and requires legal and individual entities to contract a solid waste management operator to collect and dispose of waste. The public and private operators serve the customers in Khorezm Province, and in addition to collecting and transporting waste, the operators also operate municipal solid waste landfills.

Another relevant document regulating solid waste management is Public Health Standard No.0297-11[41] "Cleaning the Populated Areas from Solid Waste in Uzbekistan." Among other provisions, the regulation (Article 3.8) specifies supervision by public health service over solid waste management during construction, including (a) verification of the performing works in compliance with design documents; (b) comparing sanitary conditions of the site(s) during construction with those at the land acquisition stage; (c) implementation progress of environmental management measures.

Public Health Standard No. 0068-96[42] "Collection, Storage, Transportation, Disinfection, and Disposal of Solid Waste in the Cities of Uzbekistan", 04.11.1996, provides information on average morphological composition of solid waste, norms of solid waste accumulation, objectives of the sanitary supervision over the solid waste transportation and disposal from urban areas.

Public Health Standard No. 0158-04[43] "Collection, Transportation, and Disposal of Asbestos-containing Waste in Uzbekistan", 12.07.2004 provides the following key provisions:

- Following Public Health Standard No. 0128-02[44], "Hygienic Classifier of Toxic Industrial Waste in Uzbekistan," asbestos-containing waste classified as Category 3 (moderately hazardous waste) and Category 4 (low-hazard waste).
- Category 3 includes asbestos, asbestos fabrics and fibers, gasket materials, and stuffing box bushings; Category 4 includes waste of paper, cardboard and products made from them, roofing felt, roofing felt and bitumen-impregnated

[40] https://lex.uz/docs/44872
[41] http://www.med.uz/download/files/sanpin/SanPiN-0297-11.pdf
[42] https://lex.uz/docs/1953516
[43] https://lex.uz/ru/docs/1912436
[44] http://med.uz/ses/surkhandarya/documents/detail.php?ID=47037

paper, asbestos cement waste, crushed stone, pressed asbestos and rubber-asbestos products, mineral fibers, fabrics and yarn, asbestos grinding dust, rock dust with asbestos admixture.

- Enterprises maintain a register with data on the quantity, quality and hazard classes of generated industrial waste following Public Health Standard[45] 0127-02 "Sanitary Rules on Stocktaking, Classification, Storage and Disinfection of Industrial Waste" (Article 4.1).
- Small shavings and debris containing asbestos must be removed in ways that prevent dust formation. In case of manual cleaning, personal protection equipment (respirators) must be used. When collecting bulk materials by other means, hazardous materials should be placed in impenetrable bags or containers. Changing and unloading containers should be done mechanically to avoid any health risks (Article 4.3).
- Solid asbestos-containing waste should be stored in areas where it will not be subject to degradation while awaiting disposal. Bags (or other containers) containing loose asbestos fibers should be removed by crushing or packing them into dense transportable bales in a designated area. Reusing asbestos-free bags as wastepaper or containers for any materials is prohibited (Article 4.4).
- Liquid asbestos-containing waste must be stored in special containers, tanks, or settling tanks and periodically emptied. Sludge overflow and drying out are not allowed (Article 4.5).
- All asbestos waste awaiting disposal, whether in containers, bags, or containers, must be appropriately labeled (Article 4.6).
- Workers must wear appropriate protective clothing and respirators when performing all activities and operations related to the collection and temporary storage of asbestos-containing waste (Article 4.8).
- Loading, transportation, unloading, and disposal of asbestos-containing waste must be mechanized. Waste transportation must exclude its losses along the route. Transportation of unpackaged asbestos in open car bodies and on railway platforms is not allowed. In the event of a waste spillage during transportation, corresponding measures must be immediately taken. If the volume is small, the waste must be collected in the original container; if it is large, it must be moistened and removed in compliance with the necessary precautions, including personal protective equipment (Article 5.2).

2.1.10. Sanitary Buffer Zone

The main goal pursued by the state when creating a buffer zone is the protection of water supply sources and facilities from accidental or intentional pollution and damage. The Uzbek regulatory framework comprises several legal documents regulating the buffer zone of the water supply facilities. However, the key water and wastewater sector regulations are standards issued by the Ministry of Health and the

[45] http://med.uz/ses/tashvil/documents/?SECTION_ID=141&PAGEN_5=25

Ministry of Construction, Utility, and Housing Services. Both legal documents have the requirements for establishing sanitary protection around the drinking water infrastructure.

The Ministry of Health of Uzbekistan (Public Health Regulation No. 0244-07[46]) requires establishing a buffer zone around the drinking water infrastructure (including water distribution and pumping stations). In particular, the buffer zone for the drinking water reservoir, filtration facilities, and pumping stations should be at least 30 m; for water towers, it should be at least 10 m, and for other drinking water facilities (such as sedimentation ponds, chlorination facilities, etc.) it should be at least 15 m. The regulation also foresees a buffer zone of at least 300 m from the residential and public buildings for the water supply station provided by the chlorine warehouse.

The Ministry of Construction, Utility, and Housing Services refers to Construction Standard ShNK 2.04.02-2019[47], specifying a need to establish a buffer zone with the requirements provided in Public Health Regulation No. 0244-07. Subject to the provision of solid justification, both regulations allow for the shortening of the buffer zone in agreement with the territorial Public Health and Population Wellbeing Service.

2.1.11. Gender-related Legal Provisions

Historically, gender issues did not attract due attention from all the relevant stakeholders in the country. The situation has changed in the last five years when the Senate of the Oliy Majlis approved the Strategy for Achieving Gender Equality until 2030 in Uzbekistan. The Strategy is subject to compulsory implementation throughout Uzbekistan, including Khorezm Province and requires:

- Ensuring equal rights and opportunities for women and men in the exercise of electoral rights;
- Ensuring equal rights and opportunities for women and men in the public service;
- Ensuring equal rights and opportunities for women and men in education, science, sports and healthcare;
- Ensuring equal rights and opportunities for women and men in the socio-economic sphere;
- Ensuring equal rights and opportunities for women and men in the prevention of oppression and violence;
- Ensuring equal rights and opportunities for women and men in family relations and child-rearing practices.

A Comprehensive Gender Equality Measures Program is developed annually by relevant government authorities. Also, the Family and Women Committee is active in

[46] Public Health Regulation No. 0244-07, Sanitary Rules and Standards on Design and Operation of Water Supply Sources and Drinking Water Infrastructure
[47] Construction Standard ShNK 2.04.02-2019 "Water Supply. External Water Supply Infrastructure"

Khorezm Province. To support gender equality, safe environment, and women's rights, the Family and Women Committees were established in every province of Uzbekistan in 2022 by the Resolution of the President of Uzbekistan on Establishment of Family and Women Committee (No. PP-146, o1.03.2022) with the objectives for:

a. Identification of low-income families and women in need
b. Establishing a Women's Book (or, as the common folk say, *"Iron Book"*) for registering families and women requiring social allowance (*this register is used primarily for distribution of social allowances provided by the GoU and other sponsors*)
c. Strengthening family, spiritual, and moral values through the provision of consultations and expert advice
d. Ensuring gender equality and increasing the socio-political activity of women by their empowerment during workshops
e. Development of women entrepreneurship, promotion of employment, and organization of vocational training for women;
f. Prevention of violence against women and assistance with women's social rehabilitation;
g. Development of science and innovation among women.

The GoU considers age, gender, poverty, and disability as key vulnerability criteria. However, no single national definition of a "*vulnerable group*" exists within the Uzbekistan legislation. The term is used differently to denote various categories and degrees of social and economic vulnerability. For instance, the Law on Population Employment (No. ZRU-642, 20.10.2020) defines a "*socially vulnerable group*" where "*Socially vulnerable categories of the population are people who need social protection, experience difficulties finding a job, and cannot compete on equal terms in the labor market*." This legal act also specifies the following categories of vulnerable groups:

(b) Single parent with children up to 14 years old, children with disabilities, and multi-child family[48]
(c) Young adults graduated from secondary, high, and vocational schools
(d) Orphanage graduates and graduates of higher educational institutions who received government grant
(e) Persons dismissed from military service of the Ministry of Defense, Ministry of Internal Affairs, Ministry of Emergency Situations, the National Guard, and the State Security Service of Uzbekistan
(f) Persons with disabilities
(g) Seniors of pre-retirement age
(h) Persons released from penitentiary institutions
(i) Victims of human trafficking
(j) Other persons stipulated in the legislation of Uzbekistan.

[48] Multi-child family is defined as a family with four or more children.

Meanwhile, Law on Social Services for the Elderly, Persons with Disabilities, and Other Socially Vulnerable Categories of the Population (No. ZRU-415 of December 26, 2016), defines "*Socially vulnerable categories of the population are persons recognized in the manner prescribed by law who need social services, including:*

(1) *lonely elderly people in need of outside care*
(2) *persons with I and II disability categories and children with disabilities*
(3) *incompetent and limited in capacity citizens*
(4) *persons with socially significant diseases*
(5) *orphans and children without parental care.*"

One more legal document, Law on Social Security of People with Disabilities[49], No. 422-XII, 18.11.1991, ensures social security is provided for people with disabilities. Uzbekistan Law defines three disability categories. The people categorized under these disability categories are assured of the provision of social protection. The medical commission determines the disability category according to the significance of disorder in body functions caused by diseases, injuries, or congenital disorders leading to limitation of life activity: self-care, movement, orientation, communication, and behavior control.

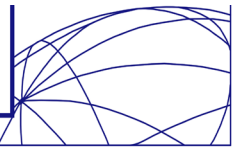
The following legal documents represent the basis for identifying vulnerable groups in Uzbekistan and determining assistance to be provided by the state:

- Law on State Pension, No. 938-XII of March 03, 1993
- Decree of the Cabinet of Ministers on Approval of the Procedure for Assigning and Paying Social Benefits and Material Assistance to Low-income Families, No. 44 of February 15, 2013
- Law on Social Partnership, September 25, 2014
- Law on Social Services for the Elderly, Disabled, and Other Socially Vulnerable Categories of the Population, No. ZRU-415, December 26, 2016
- Law on Child Rights, No. ZRU-139, 07.01.2008
- Amendment to Law on Social Protection of Disabled Persons in Uzbekistan, No. ZRU-162, July 11, 2008
- Law on Population Employment, No. 616-I, January 05, 1998.

A review of the applicable Uzbek regulatory framework specifies the following financial support to be provided for vulnerable populations:

- Old age pension and old age allowance (if the person was not working)
- Disability pension
- Unemployment allowance
- Childbirth allowance
- Maternity allowance
- Child allowance (up to 2 years)
- Temporary disability allowance

[49] https://lex.uz/acts/140860



- Social allowance for low-income families
- Social allowance for families with children under the age of 14
- Social allowance for a disabled child
- Disability pension
- Financial assistance to low-income families in the Republic of Karakalpakstan and Khorezm Province[50]
- Burial allowance
- Support for the poor, disabled persons, and lonely elderly by providing clothing and food.

As of 2022[51], average pensions and social benefits in Uzbekistan were as follows:

- I category disability pension – UZS1,186,778
- II category disability pension – UZS1,072,933
- III category disability pension – UZS769,255
- Child disability pension – UZS703,577
- Social allowance for the loss of breadwinner – UZS925,280
- Pension by age – UZS1,045,326
- Social allowance for women over 60 and men over 65 who never work – UZS500,000.

2.1.12. Other Legal Acts

- Regulation of the Cabinet of Ministers of Uzbekistan No. 255[52], Appendix "Administrative procedure for obtaining permit for cutting trees and shrubs," 31.03.2018
- Regulation of the Cabinet of Ministers of Uzbekistan No. 146[53], On measures to improve the procedure for providing land plots for urban planning activities and other non-agricultural needs, 25.05.2011.

2.2. AIIB Environmental and Social Framework

2.2.1. General

AIIB Environmental and Social Framework (ESF) was presented in 2016 by the AIIB Board, and then ESF was amended in 2019, 2021, and 2022. ESF establishes mandatory environmental and social requirements for each project under the AIIB financing and is focused on the following:

[50] Decree of the President of Uzbekistan No. UP-175 dated 25.07.2022 "Approval of Social Security Strategy for the Population of Uzbekistan," https://lex.uz/ru/docs/6130271
[51] https://gender.stat.uz/ru/osnovnye-pokazateli/sotsial-naya-zashchita
[52] https://my.gov.uz/ru/service/171
[53] https://lex.uz/ru/docs/1804031

1. Identify and manage environmental and social risks and impacts of the project, including those of climate change.
2. Ensure the environmental and social soundness and sustainability of the Bank-financed project.
3. Provide a framework for public consultation and disclosure of the project's environmental and social impact assessment findings.
4. Support the integration of environmental and social aspects of projects into the decision-making process by all stakeholders.
5. And other objectives.

ESF comprises the following key provisions:

1. Vision of the Bank
2. Environmental and Social Policy of the Bank
3. Environmental and Social Standards (ESS)
4. Environmental and Social Exclusion List.

The Bank's vision is established on the following:

1. The Bank requires the integration of environmental and social sustainability in the identification, preparation, and implementation of the project.
2. The Bank believes that social development and inclusion are critical for the successful project implementation, where inclusion is empowering people including vulnerable groups participate in project development, assigning stakeholders equal opportunities in decision-making process.
3. The Bank requires meaningful consultation of stakeholders throughout the project life.
4. The Bank considers gender equality as essential for successful and sustainable economic development. So, the Bank requires to identify potential gender-specific opportunities and gender adverse risks and impacts of the project and to develop mitigation measures to avoid or reduce such impacts and risks.
5. The Bank requires the establishment of transparent and fair relationships in the treatment of labour, based on the: equal opportunities, non-discrimination, and avoidance of forced, harmful, and child labour, and occupational health and safety environment for the project workers with the access to grievance redress mechanism (GRM).
6. The Bank requires protecting and conserving biodiversity, sustainably managing terrestrial and aquatic natural resources, and maintaining core ecological functions and services are fundamental to sustainable development.

2.2.2. Environmental and Social Policy

AIIB requires the consideration of environmental issues in all aspects of AIIB's operations, and the requirements for environmental assessment are described in AIIB ESP.

The nature of the environmental and social assessment required for a project depends on the significance of its environmental and social impacts, which are related to the type and location of the project, the sensitivity, scale, nature, and magnitude of its potential impacts, and the availability of cost-effective mitigation measures. The ESP provides requirement for the project screened and categorisation, environmental and social due diligence, environmental and social assessment, environmental and social management plan, environmental and social management planning framework, information disclosure, consultation, monitoring and reporting, and grievance redress.

Screening and Categorisation: For environmental and social impacts, the projects shall be and assigned to one of the following four categories:

- **Category A**. Projects could have significant adverse environmental and social impacts that are irreversible, diverse, or unprecedented. These impacts may affect an area larger than the sites or facilities subject to physical work and may be temporary or permanent in nature. The ESIA with an environmental and social management plan (ESMP) are required to address significant impacts.

- **Category B**. Projects could have a limited number of adverse environmental and social impacts, but they would be less adverse than those in category A. These impacts are site-specific. In most cases, mitigation measures can be designed more readily than for Category A projects. The ESIA and ESMP are required.

- **Category C**. A project is classified as category C if it is likely to have minimal or no adverse environmental and social impacts. The Bank does not require an environmental and social assessment, but it does require the Client to prepare an analysis of the environmental and social aspects of the Project.

- **Category FI.** A project is classified as category FI if the project financing structure involves the provision of funds to or through a Financial Intermediary (FI), whereas the FI shall establish an environmental and social management system approved by the Bank.

Environmental and Social Due Diligence: The Bank conducts environmental and social due diligence on the planned project as part of its appraisal to support the decision-making on financing the project. The Bank requires the client to address environmental and social risks and impacts in the planning and implementation of the project. The Bank assesses the risks and impacts of the proposed project and the capacity and commitment of the client to develop and implement the project following the ESP and ESSs.

Environmental and Social Assessment: The Bank requires to adopt an integrated approach to the environmental and social assessment. In case this cannot be achieved due to the local legislation, the Bank reviews the environmental and social documentation prepared by the client to ensure that it provides for the assessment of

both environmental and social risks and impacts and provisions for mitigation and monitoring.

Environmental and Social Management Plan: The Bank requires to develop the measures to manage and mitigate the impacts identified during environmental and social assessment and reflect them in an ESMP. The level of detail and the complexity of the ESMP should be proportional to the risks and impacts of the project.

Environmental and Social Management Planning Framework: The Bank requires to develop an ESMPF if the project consists of a program or series of activities whose details are not yet identified at the time of the project approval by the Bank. The ESMPF shall ensure that the project activities will be assessed and implemented in conformity with the ESP and ESSs. The ESMPF sets out the policies and procedures to assess and address (a) environmental and social risks and impacts of the planned activities, (b) Involuntary Resettlement that is likely to arise from such activities, and (c) impacts on Indigenous Peoples that are likely to arise from such activities. The Bank requires the Client to disclose the draft ESMPF with the following stakeholder consultation.

Information Disclosure: The Bank requires to disclose information on the environmental and social risks and impacts of the project in a timely and accessible manner and a form and language(s) understandable to the project-affected people, other stakeholders, and the public so they can provide meaningful inputs into the design and implementation of the project.

Consultation: The Bank requires to conduct meaningful consultation with stakeholders during the project's preparation and implementation phases in a manner commensurate with the risks to, and impacts on, those affected by the project.

Monitoring and Reporting: The Bank and the client shall conduct monitoring activities where their scope and periodicity are proportional to the project's risks and impacts.

Grievances: The Bank requires the establishment of a project-level GRM to receive and facilitate the resolution of the concerns and grievances of those who believe they have been adversely affected by the project's environmental and social impacts and inform project-affected people of GRM availability.

2.2.3. Project Categorisation

Following AIIB's ESP, the proposed project is classified as Category A, considering the presence of construction and rehabilitation activities spread over a vast geographic area that may have substantial environmental and social impacts. In addition, under the wastewater component, the treatment will generate a certain level of pollution in the form of unpleasant odour from settling tanks and sludge storage areas and noise pollution arising from the operation of the treatment plant.

The project could be divided into two major components later, i.e., water supply and wastewater, with the implementation of every component separately for the proper management, monitoring, and control over the associated impacts. Then, the project activities under the drinking water component will be classified as Category B, while activities under the wastewater component will remain Category A. However, both components will be subject to the preparation of ESIA with ESMP and justification of the category following AIIB ESP.

2.2.4. Environmental and Social Standards

Compliance with the following ESSs is mandatory for identification and management of environmental and social risks and impacts:

- ESS1: Environmental and Social Assessment and Management
- ESS2: Land Acquisition and Involuntary Resettlement
- ESS3: Indigenous Peoples.

Table 6: AIIB's environmental and social standards

ESS	Key Provisions	Applicability
ESS 1: Environmental and Social Assessment and Management	▪ Introduces concept of proportionality; environmental and social assessment and management are to be proportional to the project risks and impacts ▪ Requires effective mitigation and monitoring measures for quality assessment and management of environmental and social risks and impacts ▪ Requires assessment and management of environmental, social, working conditions, community, health and safety considerations ▪ Requires examination of alternatives to the proposed project ▪ Species that the Bank will not finance the activities included in the Environmental and Social Exclusion List ▪ Requires developing an ESMPF if the project consists of a program or series of activities whose details are not yet identified at the time of the project approval by the Bank ▪ Requires document monitoring activities and communicate their results ▪ Requires approval over the any changes to the project design ▪ Requires establishing and maintaining GRM ▪ Requires project information disclosure, including the draft environmental and	▪ Standard is applicable as the project will cause environmental and social impacts. ▪ Considering that the major environmental and social impacts will be associated with the wastewater component, and fewer impacts with low intensity in nature are foreseen under the water supply component, ESS1 will be triggered.

ESS	Key Provisions	Applicability
	social assessment in location and language accessible to stakeholders	
ESS 2: Involuntary Resettlement	▪ Requires avoiding on involuntary resettlement wherever possible ▪ Requires minimising involuntary resettlement by exploring project alternatives ▪ Requires restoring livelihood of displaced people to pre-project level ▪ Specifies involuntary resettlement as physical displacement (relocation, loss of residential land, etc.) and economic displacement (loss of land or access to land and natural resources, loss of assets, income source or means of livelihood) as results of (a) involuntary acquisition of land and (b) involuntary restrictions on land use or on access to legally designated territory ▪ Requires developing Resettlement Plan (RP), Resettlement Planning Framework (RPF), or Livelihood Restoration Plan (LRP) proportional to degree of impacts ▪ Requires development of Abbreviated Resettlement Plan where less than 200 people displaced or where entire displaced population not physically displaced and lose less than 10% of productive assets ▪ Requires carrying out meaningful consultations with persons to be displaced by the project on their rights, entitlements, resettlement options, etc. ▪ Requires establishing and maintaining GRM to receive and facilitate resolution of the concerns of people displaced by the project. ▪ Requires exclusion of those people without title and legal rights from the compensation for land; these people are eligible for resettlement assistance and compensation for loss of non-land assets ▪ Requires development of transparent, consistent and equitable procedure for land acquisition for eligible people to ensure the same or better income and livelihood status ▪ Requires provision a compensation and other resettlement entitlements before any physical or economic displacement under the project ▪ Requires document monitoring activities and communicate their results	▪ Standard is applicable as the project may cause involuntary resettlement impacts. ▪ The project is expected to involve temporary and permanent land acquisition, including economic displacement due to the project's siting. ▪ The project is foreseen for permanent and temporary land acquisition. Specifically, the project needs permanent plots for the ten water distribution units (WDU) and four new wastewater treatment plants (WWTP) and pumping stations. For pipe laying, temporary land acquisition is required. Given such impacts, ESS2 will be triggered.
ESS 3: Indigenous Peoples	▪ Requires designing the project considering identity, dignity, human rights, economies, and cultures of Indigenous Peoples	▪ Standard is not applicable as indigenous people are not present in the project area.

ESS	Key Provisions	Applicability
	▪ Requires undertake a culturally appropriate and gender-sensitive social assessment on Indigenous Peoples ▪ Requires preparation of Indigenous Peoples Plan or Indigenous Peoples Planning Framework (IPPF) if the project is likely to involve Indigenous Peoples and consists of a program or series of activities whose details are not yet identified at the time of the project approval by the Bank ▪ Requires avoidance of any restricted access to, and physical displacement from, protected areas and natural resources under the project ▪ Requires ensuring that the affected Indigenous Peoples communities participate in the design, implementation and monitoring and evaluation of management arrangements ▪ Requires ensuring that the level of detail and comprehensiveness of the Indigenous Peoples plan or IPPF is proportional to the degree of the project's impacts ▪ Requires establishing and maintaining a culturally appropriate and gender inclusive GRM.	

2.3. Comparison of Relevant National Laws and AIIB ESP

Table 7: Comparison of Relevant National Laws and AIIB ESP

Aspect	AIIB Requirements	Relevant Uzbekistan Legislation Requirement	Identified Gaps and Harmonized Framework
Environmental Policy and Regulations	▪ AIIB Environmental and Social Framework (Section 2.2.1) ▪ Environmental and Social Policy (Section 2.2.2) ▪ Environmental and Social Standards (Section 2.2.4)	Uzbekistan's environmental legislation comprises a number of legislative acts encompassing various aspects of the natural and built environment and human beings with the following key regulations: ▪ Law on Nature Protection, No.754-XII of 09.12.1992 (Section 2.1.1) ▪ Regulation of the Cabinet of Ministers of Uzbekistan No. 541, 07.09.2020 (Section 2.1.2) ▪ Law on Environmental Expertise No. 73-II, 25.05.2000 (Section 2.1.2)	In most cases, national requirements for environment quality match AIIB ESP and ESSs, e.g., environmental assessment is compulsory for both requirements. However, there are instances where the national and AIIB requirements differ. For example, the national legislation may not necessitate the preparation of an ESMPF. In such cases, more stringent provisions will be applied to the project.

<table>
<tr><th>Aspect</th><th>AIIB Requirements</th><th>Relevant Uzbekistan Legislation Requirement</th><th>Identified Gaps and Harmonized Framework</th></tr>
<tr><td></td><td></td><td>▪ Law on Environmental Control No. ZRU-363, 27.12.2013
▪ Law on the Protection and Use of Flora No. ZRU-409, 21.09.2016
▪ Law on the Protection and Use of Fauna No. ZRU-545-I, 26.12.1997
▪ Law on Specially Protected Natural Areas No.710-II, 03.12.2004
▪ Law on Protection of Ambient Air, No. 353-I 27.12.1996
▪ Law on Forest, No.770-I, 15.04.1999
▪ Law on Subsoil, No. 2018-XII, 23.09.1994
▪ Law on Water and Water Use, No. 837-XII, 06.05.1993</td><td></td></tr>
<tr><td>Screening and categorization</td><td>▪ AIIB requires screening and categorization at the earliest project stage in order to determine the nature and level of the required environmental and social assessment, information disclosure and stakeholder engagement required.
▪ The Bank determines the Project's category on the basis of the Project's component presenting the highest environmental or social risk and potential impacts, and assigns each proposed Project to one of the following four categories: A, B, C, and FI (Section 2.2.3).</td><td>Uzbekistan's Regulation of the Cabinet of Ministers of Uzbekistan No. 541, 07.09.2020 (Section 2.1.2) requires screening and categorization. Projects are screened for their expected environmental impacts and assigned to one of the following four categories:
▪ Category I – projects with high risks
▪ Category II – projects with moderate risks
▪ Category III – projects with low risks and
▪ Category IV – projects with local Impact.</td><td>Based on the information available at screening, subproject categorization will be coordinated with PCU and AIIB. However, it could also be harmonized by accepting the following:<table><tr><th>AIIB Category</th><th>Uzbekistan Categories</th></tr><tr><td>Category A</td><td>Category I</td></tr><tr><td>Category B</td><td>Category II or Category III</td></tr><tr><td>Category C</td><td>Category III or Category IV</td></tr></table></td></tr>
<tr><td>Environmental and Social Impact Assessment Report (ESIA)</td><td>▪ AIIB requires preparation of ESIA with ESMP for the Projects of Category A and B (Section 2.2.3). For Projects of Category C, AIIB does not require ESIA, but requires analysis of the environmental and social aspects of the Project.
▪ Elements of ESIA typically include but not limited to: (a) description of the Project, (b) policy,</td><td>▪ As specified in Section 2.1.3, environmental impact assessment (EIA) is mandatory for projects under Categories I-III, while for project of Category IV is required only completion of EIA Checklist.
▪ EIA report content is specified in Regulation No. 541, and includes the following: general information on the project owner and study team;</td><td>▪ ESIA will be prepared for subprojects to fulfill the national and AIIB requirements.
▪ ESIA will be prepared in varying degrees, depending on the categorization, and reflecting the nature, scale and potential risks and impacts of subproject.</td></tr>
</table>

Aspect	AIIB Requirements	Relevant Uzbekistan Legislation Requirement	Identified Gaps and Harmonized Framework
	legal and administrative framework, (c) scoping, including stakeholder identification and consultation plan; (d) analysis of alternatives; (e) baseline environmental and social data; (f) evaluation of environmental and social risks and impacts; (g) analysis of risks and impacts related to climate change; (h) public consultation and information disclosure; and (i) ESMP or ESMPF.	baseline environmental data; justification for project siting in terms of area's economic development and urban planning; impact assessment; project map with geographic coordinates; project description, equipment, materials, and technology; projected emissions, wastewater, and solid waste; analysis of alternatives; environmental management and mitigation measures, analysis of emergencies; minutes of meetings under Categories I and II.	
Environmental and Social Management Plan (ESMP)	AIIB requires preparation of ESMP for projects under category A and B.	Regulation of the Cabinet of Ministers of Uzbekistan No. 541, 07.09.2020 requires provision of environmental management and mitigation measures as part of EIA.	ESMP will be prepared for subprojects to fulfill the national and AIIB requirements.
Public Consultations and Disclosure	AIIB requires conducting meaningful consultations (Section 2.2.4) for projects under Categories A, B, and C.	Regulation of the Cabinet of Ministers of Uzbekistan No. 541, 07.09.2020 requires conducting public consultations for projects under Categories I and II (Section 2.1.3).	Public consultations will be conducted for all subprojects. The feedback received from the public consultations will be used to finalize and disclose the ESIA and ESMP.
Grievance Redress Mechanism (GRM)	AIIB requires establishing of the Project-level grievance redress mechanism to receive and facilitate resolution of the concerns and complaints of people who believe they have been adversely affected by the Project's environmental or social impacts, and to inform Project-affected people of its availability	In Uzbekistan grievance redress is regulated by Law on Appeal of Individuals and Legal Entities, No. ZRU-378, 03.12.2014, amended by Law No. ZRU-445, 11.09.2017	▪ GRM will be established for all subprojects. ▪ At any stage of the project, the complainer may submit its grievance to a Court following Uzbekistan legislation
Monitoring and Reporting	AIIB requires: ▪ Reporting on implementation of ESMP, LARP/LRP/RP, etc. ▪ Preparation and provision of periodic monitoring reports on the project	No monitoring and reporting to be conducted by the project owner are specified in the Uzbekistan legislation. However, the external monitoring is provided by the territorial department of the environmental regulator	Monitoring and reporting on subproject will be following AIIB requirements.

Aspect	AIIB Requirements	Relevant Uzbekistan Legislation Requirement	Identified Gaps and Harmonized Framework
	implementation relating to environmental and social risks and impacts.	and public health service, and other agencies, if needed.	

2.4. Gender-related International Provisions

Universal Declaration of Human Rights and Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) provide the foundation for the protection of women's rights, including women from vulnerable groups or with specific needs. Uzbekistan ratified[54] CEDAW on 18.08.1995. The Uzbek legislation aims to ensure that all residents benefit from social security as an integral part of the national social protection system.

In 2016. United Nation launched The 2030 Agenda for Sustainable Development[55] with 17 Sustainable Development Goals and 169 targets as an action plan for people, planet, and prosperity that among other goals seek to realize the human rights of all and to achieve gender equality and the empowerment of all women and girls. Goals 5 and 6 are directly relevant to this project as they are targeted to achieve gender equality, ending all forms of discrimination, violence and harmful practices against women, and provision of clean water and sanitation.

The AIIB recognizes that women are vulnerable in certain circumstances owing to their physical characteristics and specific needs, such as those different roles played by women and men in the household and public. This is exacerbated by the shifting burden of work on women and girls, who carry out a disproportionate share of household unpaid labor.

[54] https://lex.uz/docs/2685526
[55] https://documents-dds-ny.un.org/doc/UNDOC/GEN/N15/291/89/PDF/N1529189.pdf?OpenElement

Figure 1: UN Sustainable Development Goals
(Source: UN[56])

2.5. World Bank's EHS Standards

The Environmental, Health, and Safety (EHS) Guidelines are technical reference documents with general and industry-specific examples of Good International Industry Practice. The General EHS Guidelines[57] contain information on cross-cutting environmental, occupational, and community health and safety, and construction and decommissioning issues potentially applicable to all industry sectors. This document should be used with the relevant Industry Sector Guidelines guiding users on EHS within the specific industry sector.

General EHS Guidelines are organized in four parts and includes references and comprise references and additional sources that are used. Part 1 of the General EHS Guidelines outlines the performance levels and measures that need to be controlled and recommends mitigation and management measures to address impacts and risks. These measures include monitoring of air emissions and ambient air quality, energy conservation, wastewater and ambient water quality, water conservation, hazardous materials management, waste management, noise, and contaminated land. The EHS Guidelines should be applied based on the hazards and risks identified for each individual project. This is determined through an environmental assessment that takes into account site-specific factors, including the host country context, the environment's capacity to assimilate, and other project-related variables.

[56] https://www.un.org/sustainabledevelopment/blog/2015/12/sustainable-development-goals-kick-off-with-start-of-new-year/
[57] https://www.ifc.org/content/dam/ifc/doc/2000/2007-general-ehs-guidelines-en.pdf

Table 1.1.1: WHO Ambient Air Quality Guidelines[7,8]		
	Averaging Period	Guideline value in µg/m³
Sulfur dioxide (SO_2)	24-hour 10 minute	125 (Interim target-1) 50 (Interim target-2) 20 (guideline) 500 (guideline)
Nitrogen dioxide (NO_2)	1-year 1-hour	40 (guideline) 200 (guideline)
Particulate Matter PM_{10}	1-year 24-hour	70 (Interim target-1) 50 (Interim target-2) 30 (Interim target-3) 20 (guideline) 150 (Interim target-1) 100 (Interim target-2) 75 (Interim target-3) 50 (guideline)
Particulate Matter $PM_{2.5}$	1-year 24-hour	35 (Interim target-1) 25 (Interim target-2) 15 (Interim target-3) 10 (guideline) 75 (Interim target-1) 50 (Interim target-2) 37.5 (Interim target-3) 25 (guideline)
Ozone	8-hour daily maximum	160 (Interim target-1) 100 (guideline)

Figure 2: WHO Ambient Air Quality Requirement[58]

Table 1.3.1 Indicative Values for Treated Sanitary Sewage Discharges[a]		
Pollutants	**Units**	**Guideline Value**
pH	pH	6 – 9
BOD	mg/l	30
COD	mg/l	125
Total nitrogen	mg/l	10
Total phosphorus	mg/l	2
Oil and grease	mg/l	10
Total suspended solids	mg/l	50
Total coliform bacteria	MPN[b] / 100 ml	400[a]
Notes: [a] Not applicable to centralized, municipal, wastewater treatment systems which are included in EHS Guidelines for Water and Sanitation. [b] MPN = Most Probable Number		

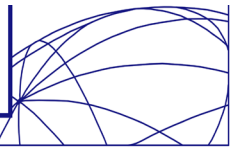
Figure 3: Indicative Values for Effluent Discharge[40]

Part 2 and Part 3 provide recommendations on management and mitigation measures under occupational health and safety and community health and safety correspondingly.

Part 4 of General EHS Guidelines, Construction and Decommissioning, among other instructions and recommendations, provides techniques for prevention, minimization, and control of construction and decommissioning activities which may pose the potential for release of petroleum-based products, such as lubricants, hydraulic fluids, or fuels during their storage, transfer, or use in equipment. Such methods include:

- Providing adequate secondary containment for fuel storage tanks and for the temporary storage of other fluids such as lubricating oils and hydraulic fluids.
- Using impervious surfaces for refueling areas and other fluid transfer areas.
- Training workers on the correct transfer and handling of fuels and chemicals and the response to spills.
- Providing portable spill containment and cleanup equipment on site and training in the equipment deployment.
- Assessing the contents of hazardous materials and petroleum-based products in building systems (e.g., polychlorinated biphenyls containing electrical equipment, asbestos-containing building materials) and process equipment and removing them prior to initiation of decommissioning activities, and managing their treatment and disposal according to Sections 1.5 and 1.6 on Hazardous Materials and Hazardous Waste Management, respectively.

[58] Excerpt from General EHS Guidelines



- Assessing the presence of hazardous substances in or on building materials (e.g., polychlorinated biphenyls, asbestoscontaining flooring or insulation) and decontaminating or properly managing contaminated building materials.
- Preparation of a management plan to manage obsolete, abandoned, hazardous materials or oil consistent.

The Industry Guidelines are based on seven principal industry sectors, including infrastructure. The infrastructure sector, among other sub-sectors, comprises the water supply and sanitation, for which the World Bank has developed particular EHS recommendations. The EHS Guidelines for Water and Sanitation include information relevant to the operation and maintenance of:

- Potable water treatment and distribution systems
- Collection of sewage in centralized systems (such as piped sewer collection networks) or decentralized systems (such as septic tanks serviced by pump trucks) and treatment of collected sewage at centralized facilities. Some key recommended indicative values of standards for ambient air and effluent discharge quality are provided below.

The EHS Guidelines are intended to support the development and implementation of risk management strategies that will ensure the safety of the environment and society through their monitoring and control.

2.6. Comparison of Relevant National and International EHS Standards

This section compares applicable national and international standards and specifies standards to be used in the project. The environmental monitoring foresees soil, water, and ambient air testing and noise and vibration measurement and requires comparing them with national and international standards. The AIIB ESF requires the Project to apply pollution control methods consistent with international good practice. When national standards differ from international standards, the borrower must achieve whichever is more stringent.

2.6.1. Air Quality

National legislation includes the following legal acts regulating ambient air quality:

(a) Public Health Regulation No. 0293-11[59]: List of pollutants with maximum allowable concentrations in ambient air in the populated areas of Uzbekistan

The corresponding international standards for ambient air quality monitoring is:

(b) World Health Organization's (WHO) Global Air Quality Guidelines: the standard provides (i) guidance on thresholds and limits for key air pollutants that constitute health risks and (ii) recommendation on controlling the following components of the ambient air: particulate matter ($PM_{2.5}$ and PM_{10}), nitrogen dioxide, sulfur dioxide, and carbon monoxide. The figure below illustrates air quality guidelines levels and interim targets recommended by WHO.

[59] http://med.uz/documentation/detail.php?ID=47545

Table 0.1. Recommended AQG levels and interim targets

Pollutant	Averaging time	Interim target				AQG level
		1	2	3	4	
$PM_{2.5}$, µg/m³	Annual	35	25	15	10	5
	24-hour[a]	75	50	37.5	25	15
PM_{10}, µg/m³	Annual	70	50	30	20	15
	24-hour[a]	150	100	75	50	45
O_3, µg/m³	Peak season[b]	100	70	–	–	60
	8-hour[a]	160	120	–	–	100
NO_2, µg/m³	Annual	40	30	20	–	10
	24-hour[a]	120	50	–	–	25
SO_2, µg/m³	24-hour[a]	125	50	–	–	40
CO, mg/m³	24-hour[a]	7	–	–	–	4

[a] 99th percentile (i.e. 3–4 exceedance days per year).
[b] Average of daily maximum 8-hour mean O_3 concentration in the six consecutive months with the highest six-month running-average O_3 concentration.

Figure 4: Recommended air quality guidelines levels and interim targets

(Source: Excerpt from WHO's Global Air Quality Guidelines)

The table below summarises the standards' requirements and their comparison:

- Indicators commonly used for routine air quality monitoring.
- Comparison of corresponding national and international standards.
- Standard to be applied for environmental, health, and safety monitoring on specific indicators within the frame of the project, considering the AIIB's requirement to use the most stringent standard.

Table 8: Ambient air quality standards

Indicator	National Standards	WHO Global Air Quality Guidelines	Applicable Standard
SO_2	0.05 mg/m³ (annual mean) 0.2 mg/m³ (24h mean)	40 µg/m³ (24h mean)	0.04 mg/m³ (24h mean) (WHO Global air quality guidelines)
NO_2	0.04 mg/m³ (annual mean) 0.06 mg/m³ (24h mean)	10 µg/m³ (annual mean) 25 µg/m³ (24h mean)	0.025 mg/m³ (24h mean) (WHO Global air quality guidelines)
CO	5.0 mg/m³	4.0 mg/m³	4.0 mg/m³ (WHO Global air quality guidelines)
PM 2.5	0.15 mg/m³ (annual mean) 0.35 mg/m³ (24h mean)	5 µg/m³ (annual mean) 15 µg/m³ (24h mean)	0.015 mg/m³ (24h mean) (WHO Global air quality guidelines)
PM 10	0.05 mg/m³ (annual mean)	15 µg/m³ (annual mean)	0.045 mg/m³ (24h mean) (WHO Global air quality guidelines)

Indicator	National Standards	WHO Global Air Quality Guidelines	Applicable Standard
	0.3 mg/m^3 (24h mean)	45 µg/m^3 (24h mean)	

WHO = World Health Organisation; PM = particulate matter; µg = microgram; m = meter; mg = milligram; SO_2 = sulfur dioxide; NO_2 = nitrogen dioxide; CO = carbon monoxide

2.6.2. Noise and Vibration

Noise is among the top environmental risks, having negative impacts on human health and well-being. Schools and hospitals are determined as the most sensitive receptors:

- Noise in a classroom is not conducive to learning and interferes with auditory communication, adversely affecting speech perception and recognition.
- Hospitals are high-stress environments. A noisy environment in a hospital affects complex tasks, reduces concentration, and causes anxiety, high blood pressure, increased heart rate, and heart disease due to the inability to relax, fall asleep or relieve stress.

National legislation includes the following legal acts regulating the acoustic environment:

- Public Health Regulation No. 0008-20[60]: Sanitary standards for permissible noise levels in public buildings, residential premises, and recreation areas.
- Public Health Regulation № 0325-16[61]: Sanitary standards for acceptable noise levels at the workplace.

The corresponding international standards for ambient air quality monitoring include the following:

- WHO Guidelines for Community Noise[62]: The regulation provides the values for specific environments.
- International Labour Organisation Standard (ILO): Protection of workers against noise and vibration in the working environment[63]: Among other provisions, the regulation specifies value for noise and vibration levels in the working environment.

The table below provides a summary of:

- Indicators commonly used for routine acoustic monitoring.
- Comparison of corresponding national and international standards.

[60] https://lex.uz/docs/5192581
[61] https://ssv.uz/ru/documentation/sanpin-ruz-0325-16-sanitarnye-normy-dopustimyh-urovnej-shuma-na-rabochih-mestah
[62] https://iris.who.int/handle/10665/66217
[63] https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/normativeinstrument/wcms_107878.pdf

- Standard to be applied for environmental, health, and safety monitoring on specific indicators within the frame of the project, considering the AIIB's requirement to use the most stringent standard.

Table 9: Standards for noise and vibration

Indicator	National standards		International standard		Applicable standard
Outdoor living area	55 dB (7 am – 11 pm) and 45 dB (11 pm – 7 am)	Public Health Regulation No. 0008-20, Sanitary standards on permissible noise level in residential and public buildings, residential and recreation areas	55 dB (daytime) 45 (night time)	WHO Guidelines for Community Noise	55 dB (7 am – 11 pm) 45 dB (11 pm – 7 am) Public Health Regulation No. 0008-20
Schools	40 dB (during class) 55 dB (for outdoor playgrounds)	Public Health Regulation No. 0008-20	35 dB (during class) 55 dB (for outdoor playgrounds)	WHO Guidelines for Community Noise	35 dB (during class) 55 dB (for outdoor playgrounds) WHO Guidelines for Community Noise
Hospitals	35 dB (7.00 am – 11 pm) 25 dB (11 pm – 7 am)	Public Health Regulation No. 0008-20	30 dB (daytime and evenings)	WHO Guidelines for Community Noise	30 dB (daytime and evenings) WHO Guidelines for Community Noise
Industrial, commercial shopping and traffic areas, indoors and outdoors	60 dB	Public Health Regulation No. 0008-20	70 dB (24h)	WHO Guidelines for Community Noise	60 dB (24 hours) Public Health Regulation No. 0008-20
Noise level at the working places	91 dB – 95 dB (during work with noisy equipment)	Public Health Regulation № 0325-16, Sanitary standards for acceptable noise levels at workplace	85 dB (daytime)	ILO Standard: Protection of workers against noise and vibration in the working environment	85 dB ILO Standard: Protection of workers against noise and vibration in the working environment

WHO = World Health Organisation; ILO = International Labour Organisation; dB= decibel

2.6.3. Drinking Water Quality

National legislation contains the following legal acts regulating the drinking water quality:

- State Standard O'zDST 950:2011: Drinking Water. Hygienic Requirements and Quality Control"

- Public Health Standard: Hygienic Criteria for Centralised Drinking Water Quality Monitoring in Uzbekistan No. 0211-06[64]

The standards require monitoring of water chemistry (by 15 chemical elements), microbiological (parasites), and toxicological indicators (e.g., benzene, benzo(a)pyrene, polyacrylamide, and pesticides).

The international standards for drinking water quality include the following:

- The WHO's Guidelines for Drinking-water Quality[65]
- The WGO's Guidelines for Drinking-water Quality (in terms of instrumental monitoring, regulation stipulates the provision of microbial water quality and chemical water quality tests);
- EU Council Directive 98/83/EC on the quality of water intended for human consumption: regulation requires monitoring of microbiological parameters and chemical parameters.

Table 7 illustrates summary of the following information:

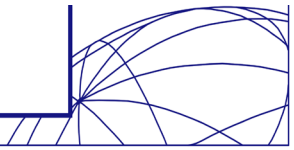
- Indicators commonly used by utility operators for routine drinking water quality monitoring.
- Comparison of corresponding national and international standards.
- Standard to be applied for environmental, health, and safety monitoring on specific indicators within the frame of the project, considering the AIIB's requirement to use the most stringent standard.

Table 10: Standards for drinking water

Indicator	National standard	International standard		Applicable standard
Odour at 20 and 60 °C	2 grade	Water should be free of tastes and odours that would be objectionable to the majority of consumers	WHO Guidelines for Drinking-water Quality	Water is free of odour (WHO Guidelines for Drinking water quality)
		Acceptable to consumers and no abnormal change	EU Council Directive 98/83/EC on the quality of water intended for human consumption	
Taste	2 grade	Water should be free of tastes and odours that would be objectionable to the majority of consumers	WHO Guidelines for Drinking-water Quality	Water is free of tastes (WHO Guidelines for drinking water quality)

[64] https://lex.uz/ru/docs/1934624
[65] https://apps.who.int/iris/bitstream/handle/10665/254637/9789241549950-eng.pdf

Indicator	National standard	International standard		Applicable standard
		Acceptable to consumers and no abnormal change	EU Council Directive 98/83/EC on the quality of water intended for human consumption	
Colour	25 units	Drinking-water should ideally have no visible colour	WHO Guidelines for Drinking-water Quality	Water has no visible colour (WHO Guidelines for Drinking water quality)
		Acceptable to consumers and no abnormal change"	EU Council Directive 98/83/EC on the quality of water intended for human consumption	
Turbidity	2.0 mg/l (mg/dm^3)	None to exceed 1 NTU	WHO Guidelines for Drinking-water Quality	Water turbidity is none exceed 1 NTU (WHO Guidelines for drinking water quality)
		Acceptable to consumers and no abnormal change	EU Council Directive 98/83/EC on the quality of water intended for human consumption	
pH	6.0-9.0	6.5 – 8.5	WHO Guidelines for Drinking-water Quality	Water pH range is 6.5 – 8.5 (WHO Guidelines for drinking water quality)
		≥6.5 and ≤ 9.5	EU Council Directive 98/83/EC on the quality of water intended for human consumption	
Total hardness ∑(Ca+Mg)	7.0 (10.0) mg-eq./l (mg-eq/dm^3)	No guideline values are proposed	WHO Guidelines for Drinking-water Quality	Total hardness of water is 7.0 mg-eq/l (Uzbek Standard for Drinking Water No. O'zDST 950:2011 "Hygienic requirements and quality control")
		-	EU Council Directive 98/83/EC on the quality of water intended for human consumption	
Alkalinity (HCO_3)	3.0 mg-eq./l (mg-eq/dm^3)	-	WHO Guidelines for Drinking-water Quality	Water alkalinity is 3.0 mg-eq/l (Uzbek Standard for Drinking Water No. O'zDST 950:2011 "Hygienic requirements and quality control")
		-	EU Council Directive 98/83/EC on the quality of water intended for human consumption	
Chlorides	250 (350) mg/l (mg/dm^3)	200 – 300 mg/l	WHO Guidelines for Drinking-water Quality	Chloride concentration in the water is 250 mg/l (Uzbek Standard for Drinking Water No. O'zDST 950:2011 "Hygienic requirements and quality control")
		250 mg/l	EU Council Directive 98/83/EC on the quality of water intended for human consumption	
Oxygen demand	5.0 mg/l (mg/dm^3)	-	WHO Guidelines for Drinking-water Quality	Oxygen demand in the water is 5.0 mg/l



Indicator	National standard	International standard		Applicable standard
		-	EU Council Directive 98/83/EC on the quality of water intended for human consumption	(Uzbek Standard for Drinking Water No. O'zDST 950:2011 "Hygienic requirements and quality control")
Sulphates	400 (500) mg/l (mg/dm^3)	-	WHO Guidelines for Drinking-water Quality	Sulphate concentration in the water is 250 mg/l (EU Council Directive 98/83/EC on the quality of water intended for human consumption)
		250 mg/l	EU Council Directive 98/83/EC on the quality of water intended for human consumption	
Iron	0.3 mg/l (mg/dm^3)	below 0.3 mg/l	WHO Guidelines for Drinking-water Quality	Iron concentration in the water is 0.2 mg/l (EU Council Directive 98/83/EC on the quality of water intended for human consumption)
		200 µg/l	EU Council Directive 98/83/EC on the quality of water intended for human consumption	
Copper	1.0 mg/l (mg/dm^3)	2 mg/l	WHO Guidelines for Drinking-water Quality	Copper concentration in the water is 1.0 mg/l (Uzbek Standard for Drinking Water No. O'zDST 950:2011 "Hygienic requirements and quality control")
		2 mg/l	EU Council Directive 98/83/EC on the quality of water intended for human consumption	
Fluoride	0.7 mg/l (mg/dm^3)	between 0.5 and 1 mg/l	WHO Guidelines for Drinking-water Quality	Fluoride concentration in the water is 0.7 mg/l (WHO Guidelines for drinking water quality)
		1.5 mg/l	EU Council Directive 98/83/EC on the quality of water intended for human consumption	
Total dissolved solids (TDS)	1000 (1500) mg/l (mg/dm^3)	600 – 1000 mg/l	WHO Guidelines for Drinking-water Quality	Total dissolved solids is 600 – 000 mg/l (WHO Guidelines for drinking water quality)
		500−15000 mg/ L	EU Council Directive 98/83/EC on the quality of water intended for human consumption	
Coliforms	Not more than 3 number/1c m^3	Escherichia coli provides conclusive evidence of recent fecal pollution and should not be present in drinking water. Must not be detectable in any 100 ml sample	WHO Guidelines for Drinking-water Quality	Zero Coliforms is in the water (WHO Guidelines for drinking water quality)

Indicator	National standard	International standard		Applicable standard
		Escherichia coli (E. coli): 0	EU Council Directive 98/83/EC on the quality of water intended for human consumption	

TDS = total dissolved solids; NTU = Nephelometric Turbidity Units; mg = milligram; dm = decimeter; l = liter; ml = milliliter; eq. = equivalent; ∑ = in total, WHO = World Health Organisation; EC = European Commission; EU = European Union

2.6.4. Discharge of Wastewater into Surface Water

National legislation specifies the following legal acts regulating the discharge of wastewater into surface waters:

- Public Health Regulation No.0318-15: Hygienic and anti-epidemic requirements for the protection of water reservoirs in Uzbekistan, where Appendix 2:
  1. Stipulates requirements for the discharge of wastewater into the surface waters to maintain proper public health and safety
  2. Classifies wastewater discharge into three categories: moderate (Category I), high (category 2), and extremely high (Category 3)
  3. Provides values for several indicators to be followed during the discharge of wastewater into the surface waters.

- Decree of the Cabinet of Ministers No. 11, About Additional Measures on Improvement of Environmental Management in the Utilities Sector (03.02.2010): Section II to Appendix 1 provides the terms and conditions for discharging industrial wastewater into the public sewer network.
- The regulation prohibits discharge of the industrial wastewater without preliminary treatment discharge of the wastewater containing the following:

  scale, lime, sand, gypsum, metal shavings, animal remains and other organic waste, and construction waste

  dyes, surface runoff from industrial sites, etc.

  bacterial contaminants, insoluble petroleum derivatives, biological hard-to-oxidise organic and surfactants, and mineral substances

  industrial wastewater having: temperature above 40 °C; pH below 6.5 or above 9; COD higher than BOD by more than 2.5; total BOD by more than 1.5; suspended and floating substances in concentrations exceeding 500 mg/L

  acids, hot impurities, toxic and dissolved gaseous substances, in particular, solvents (gasoline, diethyl ether, dichloromethane, benzene, etc.), dyes that can form toxic gases in sewer networks and treatment facilities (such as hydrogen sulphide, carbon disulfide, carbon monoxide, hydro-cyanide acid, vapours of highly volatile aromatic hydrocarbons, etc.) and other explosive and fire hazardous substances, toxic mixtures, concentrated chemical and biological solutions, and wastewater containing radioactive substances.

- Other provisions include procedures for setting up the terms and conditions for wastewater discharge into the public sewer, mandatory monitoring by water utility of the wastewater quality to be discharged by industries, calculation of penalties and charges for over-discharge of wastewater into the public sewer, etc.

International standards comprising the following regulations specifying wastewater effluent standards:

- EU Council Directive 91/271/EEC concerning urban wastewater treatment specifies recommended values for biochemical oxygen demand (BOD), chemical oxygen demand (COD), total suspended solids (TSS), total phosphorus, and total nitrogen.
- WHO microbiological quality guidelines for wastewater use in agriculture and Compendium of standards for wastewater reuse in the Eastern Mediterranean Region provide WHO microbiological quality guidelines for wastewater use in agriculture with recommended values for faecal coliforms in irrigation of crops likely to be eaten uncooked and faecal coliforms in the soils of sports fields and public parks.

The table below provides comparison of national and international standards.

Table 11: Standards for effluent discharge into surface water

Indicator	Unit	Public Health Regulation No.0318-15	International Standard
BOD (water ponds of category 1*)	mg/l O_2 (mg/dm^3 O_2)	3.0	25 (EU Council Directive 91/271/EEC)
BOD (water ponds of category 2*)	mg/l O_2 (mg/dm^3 O_2)	6.0	
COD (water ponds of category 1*)	mg/l O_2 (mg/dm^3 O_2)	15.0	125 (EU Council Directive 91/271/EEC)
COD (water ponds of category 2*)	mg/l O_2 (mg/dm^3 O_2)	15.0	
DO	mg/l	4.0	n/a
Permanganate index	mg/dm^3 O_2	2.0	n/a
Dry Solid	mg/l (mg/dm^3)	1000	n/a
Total Coliforms	per 1000 ml	$1 \cdot 10^4$	n/a
Thermotolerant coliform bacteria	CFU/ml	100 CFU/100	≤1000/100 (WHO microbiological quality guidelines for wastewater use in agriculture)
Total coliform count	CFU/ml	500 CFU/100	n/a
Coliphages	PFU/ml	10 PFU/100	n/a

BOD = biochemical oxygen demand; COD = chemical oxygen demand; DO = dissolved oxygen; TDS = total dissolved solids; SS = suspended solids; mg = milligram; dm = decimeter; l = liter; ml = milliliter
*Water storage ponds assigned to one of the three categories specified in Decree

Another Uzbek legal act, Decree of the Cabinet of Ministers of Uzbekistan No. 14 *"On approval of the regulation on the procedure for developing and approving environmental standards,"* provides requirements for the existing WWTP and states that: *"28. Standards for permissible discharge limits (PDL) are established by calculations or based on design data considering the analysis of the utility's water-material balance, the composition of the water source and components used in the design technology, and baseline concentrations. Standards shall be prepared in the form set in Appendix No. 12 to these Regulations.*
In all cases, the PDL shall be set no higher than the baseline conditions of natural water used for wastewater discharge and no lower than the maximum permissible concentrations established for surface waters of fishing and (or) cultural and domestic importance."

Considering the AIIB's requirement to use the most stringent standard, the Project should apply the Uzbek public health standard in designing and operating WWTPs.

2.6.5. Soil Quality

Public Health Regulation № 0183-05[66] and Public Health Regulation № 0191-05[67] stipulate requirements for the soil quality. The corresponding international standards for soil quality monitoring include the following:

- The Food and Agriculture Organisation (FAO) Global Soil Partnership: Standard Operating Procedures[68] (provides methods for soil monitoring);
- WHO Permissible Limits for Heavy Metals in Plants and Soil[69] (specifies maximum levels of elements in soils).

The table below provides a comparison of corresponding national and international standards and specifies the soil standard to be applied for environmental, health, and safety monitoring during the project.

Table 12: Standards for the soil quality

Indicator	National Standard	International Standards		Applicable Standard
pH	6-9	6.0 – 7.5	FAO Global Soil Partnership	6.0 – 7.5 (Global Soil Partnership)
Cu	3 mg/kg	36 mg/kg	WHO permissible limits for heavy	3 mg/kg (Public Health Regulation № 0191-05)

[66] Public Health Regulation № 0183-05 "Hygienic requirements for the quality of soil in populated areas in the specific natural climatic conditions of Uzbekistan" of January 10, 2005
[67] Public Health Regulation № 0191-05 "Maximum permissible concentrations and approximate permissible concentrations of exogenous harmful substances in the soil" of November 5, 2005
[68] FAO Global Soil Partnership: Standard Operating Procedures, https://www.fao.org/3/ca2796en/CA2796EN.pdf
[69] WHO permissible limits for heavy metals in plant and soil, WHO (1996)

Indicator	National Standard	International Standards		Applicable Standard
Pb	32 mg/kg	85 mg/kg	metals in plants and soil	32 mg/kg (Public Health Regulation № 0191-05)
Zinc	23 mg/kg	50 mg/kg		23 mg/kg (Public Health Regulation № 0191-05)
NO_3	130 mg/kg	-	-	130 mg/kg (Public Health Regulation № 0191-05)

Cu = copper; Pb = lead; Zn = zinc; NO_3 = nitrate; mg = milligram; kg = kilogram; WHO = World Health Organisation; FAO = Food and Agriculture Organisation

2.6.6. Waste Management

Handling waste containing asbestos, for example, while replacing old asbestos pipes (laid out in the 1970s-1980s), will follow Public Health Standard No. 0158-04 (Section 2.1.9). Moreover, ESMP foresees preparing an Asbestos-containing Material Management Plan for each subproject following Part 4 of General EHS Guidelines (Section 2.5).

Uzbekistan does not have regulations prohibiting asbestos-containing materials (ACM) use in the construction of buildings and structures, except for Regulation No. 102, "On approval of common technical procedure on the safety of telecommunication equipment," 27.02.2017, which serves as a ban[70] (Regulation No. 102 "On approval of common technical procedure on safety of telecommunication equipment", 27.02.2017) on ACM use when laying telecommunication lines. Since AIIB funds the project, the project will prohibit use of asbestos-containing materials (ACM) following the requirements of the AIIB Environmental and Social Exclusion List. This means no ACM will be procured or used for the project implementation.

Management of hazardous waste will follow (1) Public Health Standard No. 0127-02 0127-02 "Sanitary Rules on Stocktaking, Classification, Storage and Disinfection of Industrial Waste" (Section 2.1.9), requiring contractual arrangement for collection, transportation, and disposal of waste by operator and (2) General EHS Guidelines of IFC (1.5 Hazardous Materials Management[71]) recommended to avoid or, when avoidance is not feasible, minimize uncontrolled releases of hazardous materials or accidents (including explosion and fire) during their production, handling, storage and use.

Management of municipal solid waste generated during construction and operation phase will be followed Law on Waste No.362-II (Section 2.1.9), requiring contractual arrangement for collection, transportation, and disposal of waste by operator.

[70] https://lex.uz/docs/3124839
[71] https://www.ifc.org/content/dam/ifc/doc/2000/2007-general-ehs-guidelines-en.pdf

3. Project Description

3.1. Project Overview

To strengthen its commitment to improving access to safe water supply, sanitation, and hygiene in the Republic of Karakalpakstan and Khorezm Province, the Government of Uzbekistan (GoU) applied for financing from the AIIB. The Project Implementation Agency is JSC Uzsuvtaminot, Uzbekistan's national water company.

An initial assessment undertaken by Uzsuvtaminot revealed that only 11,900 residents in Khorezm Province, or 11.2% of entire population have access to the centralised sewerage system. The remaining part of the population uses toilets with cesspools or septic tanks. The assessment also states that the centralised water supply covers approximately 70% of the residents of Khorezm Province. However, considering the long-term operation of the networks (20-50 years), losses of drinking water account for about 40-50% of the total water supply. The situation is complicated by the high groundwater levels that gradually increases due to leaks from the water mains and extensive on-farm irrigation in the area. Moreover, insufficient development of the centralised sewerage system hinders the development of the industrial capacity of the region, creates inconveniences for the population and leads to environmental pollution.

The planned AIIB investment will address critical issues in the current water and wastewater sector in Khorezm Province and aims to meet the following targets:

- 181,600 people, or 100% of the local population in the selected districts will have access to safe tap water, with the coverage by water supply services to increase from 69.6% in 2023 to 100% upon completion of the planned interventions.
- 33,700 people, or more than 30% of the local population in the selected district centres will have access to the centralised sewerage system, with the coverage by the sewerage services to increase from 11.2% in 2023 to 32% upon completion of the planned interventions.

3.2. Key Components and Activities

The proposed Project activities will take place in Khorezm Province and will be implemented by the Project Coordination Unit (PCU) to be established within Khorezm Suvtaminot LLC, the regional branch of Uzsuvtaminot JSC.

Khorezm Province is located in the western Uzbekistan and borders the autonomous Republic of Karakalpakstan in the north and west, with Turkmenistan in the south and with Uzbekistan's Bukhara Province in the east. According to the initial assessment of Uzsuvtaminot JSC, the province area is 6,300 km². With the total population being

1,958,091 people as of Q1 2023[72], the population density of the province is 310.80 people per square kilometre.

The project development objectives are to improve the availability and sustainability of water supply and sewerage services in the region. The Project will focus on the improvement of water supply and sewerage services in the selected districts and selected urban centres, along with improving the living conditions in the province. The Project comprises the following three components:

- *Investment in Water Supply Infrastructure*

  The subprojects under this component include the construction and rehabilitation of wells and intakes, reservoirs, water mains, water treatment facilities, pumping stations, and distribution networks.

- *Investment in Sewerage Infrastructure*

  The subprojects include the construction of centralised sewerage system in the seven district centres of Khorezm Province. The sanitation infrastructure will include but not limited to construction of sewer network, pumping stations, sewage treatment plants, etc.

- *Capacity Building and Implementation Support*

  This component's activities will be divided in two sub-components:

  Component 3: *Capacity Building Sub-component* will address critical institutional development and capacity *gap* of the water utility – *Khorezm Suv Taminoti* and will include among others asset management system, client management and complaint handling system, and billing and collection system.

  Component 4: *Project Implementation and Management Support Sub-component* will be intended to provide assistance to the Project Implementation Agency in ensuring seamless coordination, efficient implementation and compliance with the relevant policies.

The project location is presented in Figure 1 and covers nine of eleven districts of Khorezm Province, as follows:

- Gurlen, Urgench, Khanka, and Shavat districts are included in the water supply investment programme.
- Bagot, Urgench, Khazarasp, Shavat, Yangiarik, Yangibazar, and Kushkupir districts are included in the sewerage investment programme.

[72] Khorezm Province Department of Statistics Committee of Uzbekistan

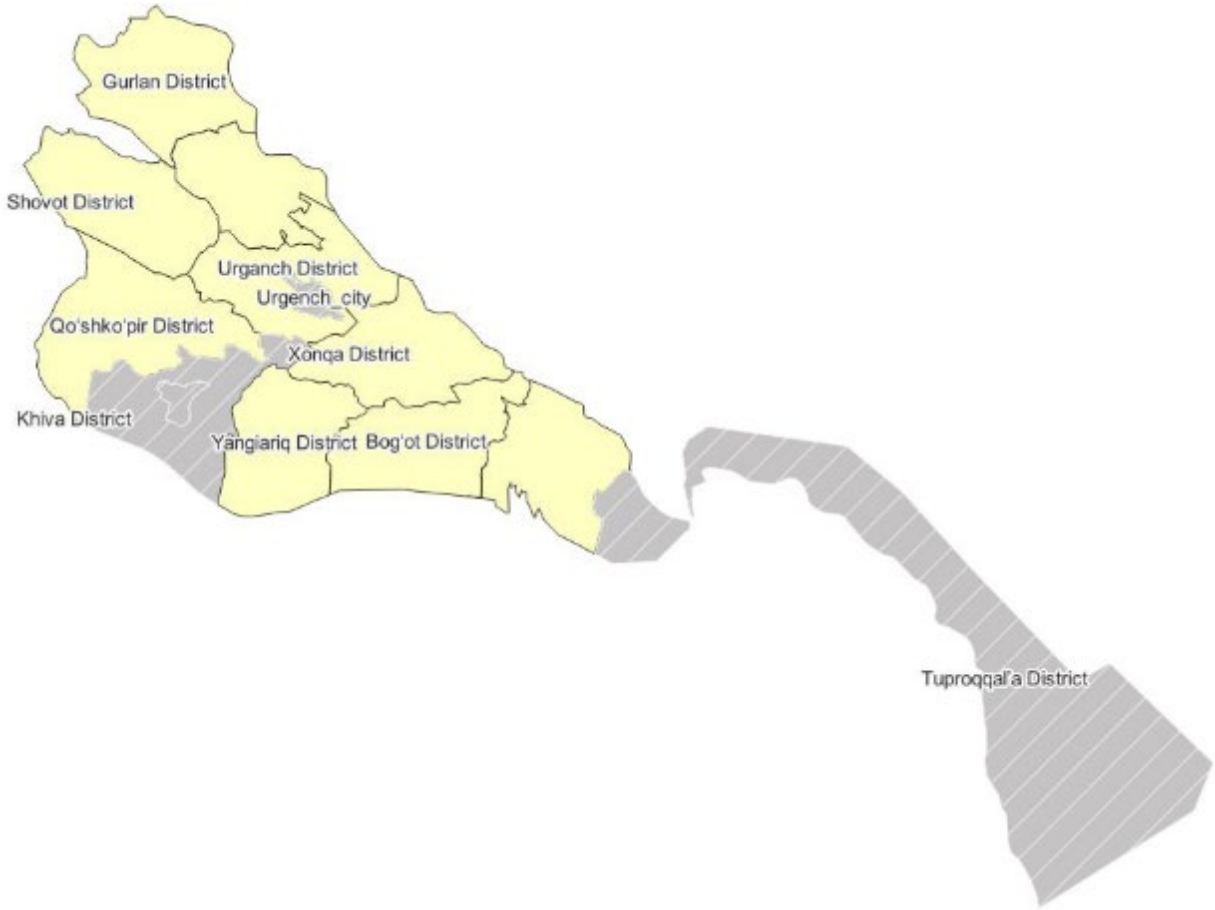


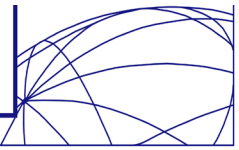
Figure 5: Project Area
yellow areas = project districts; grey areas = district not included in the project interventions

3.2.1. Proposed Implementation of the Water Supply Component

The proposed subprojects under Component 1 include the rehabilitation and construction of water treatment and distribution facilities, as follows:

1. Water Mains:
   - Construction of the Gurlen-Shavat water main pipeline with electrochemical protection
   - Construction of the Koromon-Kushkupir water main pipeline with electrochemical protection
   - Installation of flow and pressure control valves on the Koromon-Kushkupir water main pipeline
   - Construction of the Pitnak-Urgench water main pipeline with electrochemical protection

2. Urgench District: Construction and rehabilitations of water treatment and distribution facilities
   - Construction and rehabilitation of Chakkakuli Water Distribution Unit (WDU), Urtadurmon WDU, Bobodekhkon WDU, H. Olimjon WDU, Miroblar WDU,

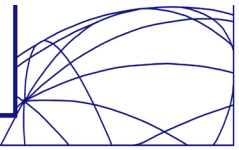


Yukoriovul WDU, Cholish WDU, Kumravot WDU, Obod WDU, Orzu WDU, Shohidonlar WDU, Chandir WDU, Yangi Urtabog WDU, Katta Bog WDU, Oyok Bog WDU, Turkmanlar WDU, Koromon WDU, and Ravot WDU.
- Installation of pumping and chlorination facilities at WDUs
- Construction and rehabilitation of district water mains
- Construction and rehabilitations of water networks
- Installation of customer water meters
- Construction of wells with shut-off valves.

3. Khanka District: Construction and rehabilitations of water treatment and distribution facilities
   - Construction and rehabilitation of Tayanch pumping station, Tayanch WDU, Turkiston WDU, Pakhtakor pumping station, Khankaobod WDU, Durmon WDU, Markazi-2019 WDU, Gulistan WDU, Dustlik WDU, Ilgor WDU, Znakhos WDU, Gairat WDU, Nurobod WDU, Yosh Kuch WDU, Madaniyat WDU, and Markaziy 1960 Production Base.
   - Installation of pumping and chlorination facilities at WDUs
   - Construction and rehabilitation of district water mains
   - Construction and rehabilitations of water networks
   - Installation of customer water meters
   - Construction of wells with shut-off valves.

4. Shavat District: Construction and rehabilitations of water treatment and distribution facilities
   - Construction and rehabilitation of Idalikala WDU, Arbob WDU, Oydin WDU, Buirachi WDU, Markaziy WDU, Archazor WDU, Khitoy WDU, Arytom WDU, Mevazor WDU, Kirgok Boyi WDU, Gulistan WDU, Monok Markaziy WDU, Chigatoy WDU, Madaniyat WDU, Monok-2 WDU, Ogohiy WDU, Eshonkala WDU, Ok Kul WDU, Yangi Burlok WDU, Kushkupir WDU, and Markaziy WDU Production Base
   - Construction of water conduit from Markaziy WDU to Monok Markaziy WDU
   - Installation of pumping and chlorination facilities at WDUs
   - Construction and rehabilitation of district water mains
   - Construction and rehabilitations of water networks
   - Installation of customer water meters
   - Construction of manholes with flow meters
   - Installation of flow meters.

5. Gurlen: Construction and rehabilitations of water treatment and distribution facilities
   - Construction and rehabilitation of Moily WDU, Gurlen WDU, Nurafshon WDU, Pakhtakor WDU, Besh Uy WDU, Hizir Eli WDU, Dustlik Bogi WDU, Baldokli WDU, Birlashgan WDU, Kangli WDU, Ok Kum WDU, Dusimbiy WDU, Marbugat WDU, and Chinobod WDU
   - Construction of wells with pressure regulators



- Installation of pumping and chlorination facilities at WDUs
- Construction of wells with flow meters
- Installation of flow meters on the main networks
- Construction of wells with shut-off valves
- Construction and rehabilitation of district water mains
- Construction and rehabilitations of water networks
- Installation of customer water meters.

3.2.2. Proposed Implementation of the Sewerage Component

Component 2 is the most challenging scope of the proposed work. There is no sewerage system in the Khorezm region, except in the Urgench district. The subprojects include the construction of sewerage system in the seven district centres, including:

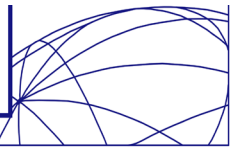
- Construction of pumping stations in Yangibazar, Yangiarik, Shavat, Khazarasp, and Urgench districts
- Construction of gravity sewer network in Yangibazar, Yangiarik, Shavat, Khazarasp, and Urgench districts
- Construction of pressure sewer network with two lines in Yangibazar, Yangiarik, Shavat, Khazarasp, and Urgench districts
- Construction of house sewer connections in Yangibazar, Yangiarik, Shavat, Khazarasp, and Urgench districts
- Reconstruction of pumping station in Urgench district
- Modernisation of sewage pumping station in Urgench district
- Reconstruction of gravity sewer network in Urgench district
- Reconstruction of pressure sewer network with two lines in Urgench district.

The construction of new networks and rehabilitation of existing ones will increase water intake and consumption, leading to increased wastewater production. To improve the sanitary situation with wastewater, the GoU developed a three-level wastewater management system concept according to which:

a. Cities and towns, being part of the district centres, will be connected to the wastewater system, and these interventions will be part of the project.
b. Local wastewater treatment plants will be constructed in the big villages on local funds.
c. Small villages will remain with individual septic tanks and cesspits; the faecal sludge is cleaned and transported to the designated areas for disposal.

Regarding wastewater treatment technology, the Project will be guided by the local regulation requiring the treated water to be discharged into the river or other surface water to comply with the established national *Public Health Standard No. 0318-15*[73]. This

[73] Public Health Standard No. 0318-15, Hygienic and Epidemiological Response Requirements for the Protection of Surface Water on the territory of the Republic of Uzbekistan



legislative requirement is challenging as the commonly used wastewater treatment technology shall foresee additional disinfection of the effluent, which will increase the overall costs for running wastewater treatment plants (WWTP) but ensure safe surface water.

Further details of the subprojects (such as components, activities, manpower details, equipment details, construction material requirements, waste generation, temporary facilities) will be included in the ESIAs and ESMP of each subproject.

3.2.3. Proposed Capacity Building and Implementation Support

The planned activities under this task will include:

- Improvement of the business practice of the water company (Khorezm Suv Taminoti), including financial and operational performance improvement emphasising non-revenue water reduction and focusing on environmentally friendly operation of utility infrastructure.
- Support Uzsuvtaminot in implementation of the Water Sector 2030 Reform.
- Support to project management and ensuring seamless coordination, efficient implementation, and compliance with the relevant policies.

3.3. Project Area of Influence

According to the AIIB ESF, an area of influence includes the territory likely to be affected by the project components including permanent and temporary facilities, its ancillary aspects, and unplanned developments.

As no specific subproject sites have been identified at this stage, the Project area of influence (AoI) will be the nine project districts, namely Gurlen, Urgench, Khanka, Shavat, Bagot, Khazarasp, Yangiarik, Yangibazar, and Kushkupir. More specific AoI will be determined once subproject sites are known.

4. Environmental and Social Baseline Conditions

4.1. Physical Environment

The Chapter describes the environmental baseline conditions within the entire AoI of the entire Project. The environmental baseline for each of the subprojects will be described and assessed under each of the subproject's ESIA.

Khorezm Province is one of Uzbekistan's 12 provinces. It is located in north-western Uzbekistan along the River Amudarya. The province borders the autonomous Republic of Karakalpakstan in the north and north-west, the Bukhara Province in the east and Turkmenistan in the south and west. The province is surrounded by two large sand deserts, namely the Karakum Desert in the south-west and the Kyzylkum Desert in the north-east.

Figure 6: Geographical location of Khorezm Province

The region's area is 6,100 km², or 1.4% of the entire Uzbekistan's area. The administrative centres of the province is Urgench.

The Project activities will take place in nine of the 11 districts of the province, including Bagat, Gurlen, Khanka, Khazarasp, Kushkupir, Shavat, Urgench, Yangiarik and Yangibazar districts. Those districts comprise 56 towns and 550 rural communities.

4.1.1. Climate

Khorezm Province has a mid-latitude desert climate with hot and dry summers and relatively cold winters. This type of climate is classified as BWk under the Köppen climate classification[74]. The climate conditions of the Project area largely depend on the surrounding deserts, including Karakum Desert, Kyzylkum Desert, and Usturt Plateau Desert. Another desert in the area, the Aralkum Desert, developed on the former seabed once occupied by the Aral Sea and is the source of airborne salt and dust contaminated with agricultural pesticides being carried over from the former seabed to the Khorezm oases and globally.

The mean annual temperature in the province is 12-14°C, 0.92% higher than Uzbekistan's averages. The mean summer temperature in July is 32°C to 36°C, with a maximum of 51 °C. In winter, the average air temperature is 0 °C to -10 °C in January, lower by 5-8 °C compared to the rest of Uzbekistan's southern and eastern parts.

Precipitation is uneven within the province. The average annual precipitation across the province ranges from 78 mm to 103 mm. The highest amount of rainfall is in spring and autumn. The region has 22.86 rainy days (6.26% of the time) annually.

Considering the desert climate, the wind direction mainly depends on the area's mountainous terrain. In winter, the prevailing wind is south-easterly with the velocity of 3-5 m/s, while during the summer the wind is mainly north-westerly reaching the speed of 2-4 m/s.

A summary of average weather by month recorded during 1991-2021 is provided in the figure below.

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature °C (°F)	-1.4 °C (29.4) °F	0.8 °C (33.5) °F	8.7 °C (47.7) °F	16.2 °C (61.1) °F	23.3 °C (74) °F	28.3 °C (82.9) °F	30.2 °C (86.4) °F	28.1 °C (82.6) °F	21.4 °C (70.5) °F	13.2 °C (55.8) °F	5.1 °C (41.1) °F	-0.2 °C (31.7) °F
Min. Temperature °C (°F)	-5.4 °C (22.3) °F	-4.2 °C (24.4) °F	2.2 °C (35.9) °F	9.3 °C (48.7) °F	16.3 °C (61.3) °F	21 °C (69.7) °F	23.3 °C (74) °F	21.4 °C (70.6) °F	14.9 °C (58.8) °F	7.3 °C (45.1) °F	0.4 °C (32.7) °F	-3.9 °C (25) °F
Max. Temperature °C (°F)	3.4 °C (38.1) °F	6.6 °C (43.9) °F	14.9 °C (58.8) °F	22.2 °C (72) °F	29.4 °C (84.9) °F	34.3 °C (93.8) °F	36.1 °C (97) °F	34.4 °C (93.9) °F	27.8 °C (82) °F	19.4 °C (67) °F	10.3 °C (50.6) °F	4.5 °C (40.1) °F
Precipitation / Rainfall mm (in)	11 (0)	13 (0)	18 (0)	17 (0)	12 (0)	4 (0)	1 (0)	1 (0)	1 (0)	6 (0)	10 (0)	9 (0)
Humidity(%)	68%	63%	50%	41%	33%	27%	28%	29%	35%	46%	63%	67%
Rainy days (d)	2	2	3	3	2	1	0	0	0	1	2	2
avg. Sun hours (hours)	6.2	7.6	9.3	11.2	12.8	13.5	13.3	12.4	11.2	9.6	7.5	6.1

Data: 1991 - 2021 Min. Temperature °C (°F), Max. Temperature °C (°F), Precipitation / Rainfall mm (in), Humidity, Rainy days. Data: 1999 - 2019: avg. Sun hours

Figure 7: Average weather by month (1991-2021), Khorezm Province
(Source: Weather and Climate Data[75])

[74] https://koeppen-geiger.vu-wien.ac.at/present.htm
[75] https://weatherandclimate.com/uzbekistan/khorezm

4.1.2. Topography

The province is located along the Amudarya River and between two deserts such as Karakum Desert and Kyzylkum Desert. The average height of the Khorezm Province is about 100 m above the sea level. The terrain of the area is mostly flat. It has a general surface slope from east to northwest, with absolute elevations varying from 92 to 116 m (shown as red circles in the figure below). The province is crossed by small rivers and a number of irrigation and drainage collector canals, illustrated as blue lines in the figure below.

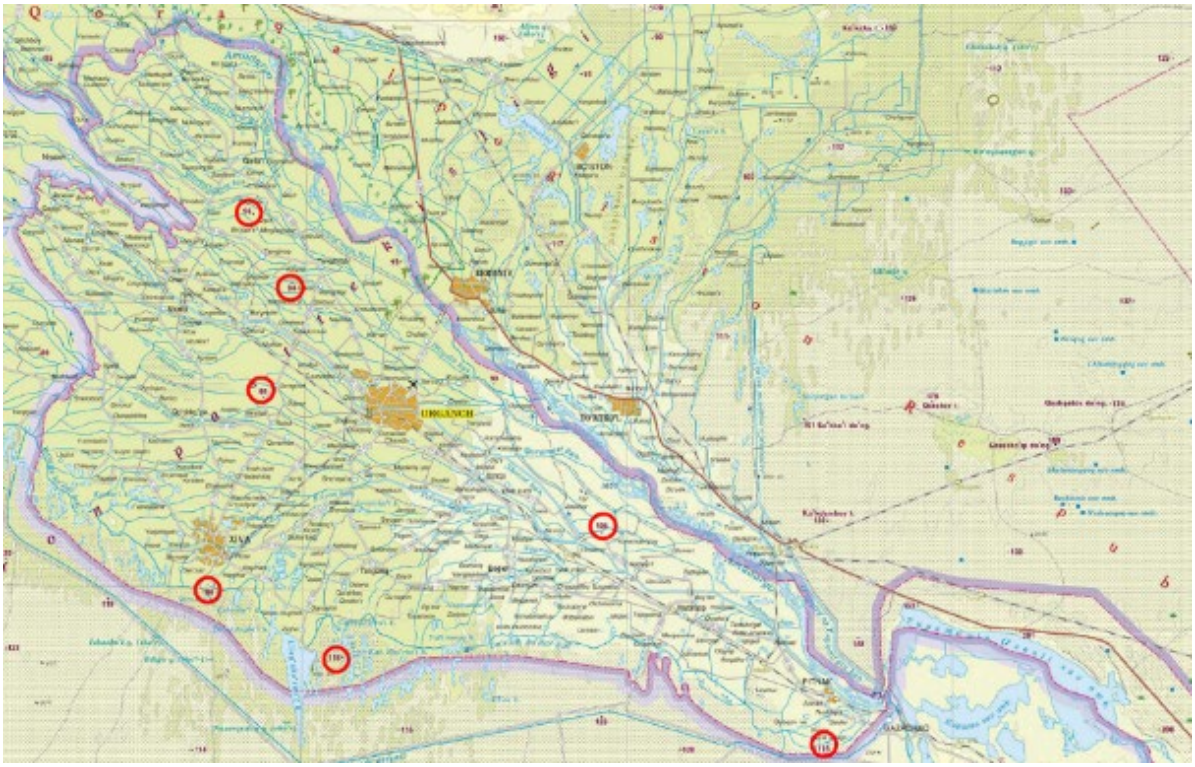


Figure 8: Map of Khorezm Province with elevations
(Source: National Atlas)

The Project will be distributed across seven districts of the Khorezm Province where the topography is predominantly plain.

4.1.3. Geology and Soils

The geological conditions of the Project area were formed during the Golotsen and Upper Pliocene periods, comprising Cenozoic clays, sandstones and loamy-sandy loam of river sediments as shown in the figure below. Khorezm Province comprises the territory on both sides of the Amudarya River, whereas the river's left bank is an oasis formed by the Amudarya River sediment depositions.

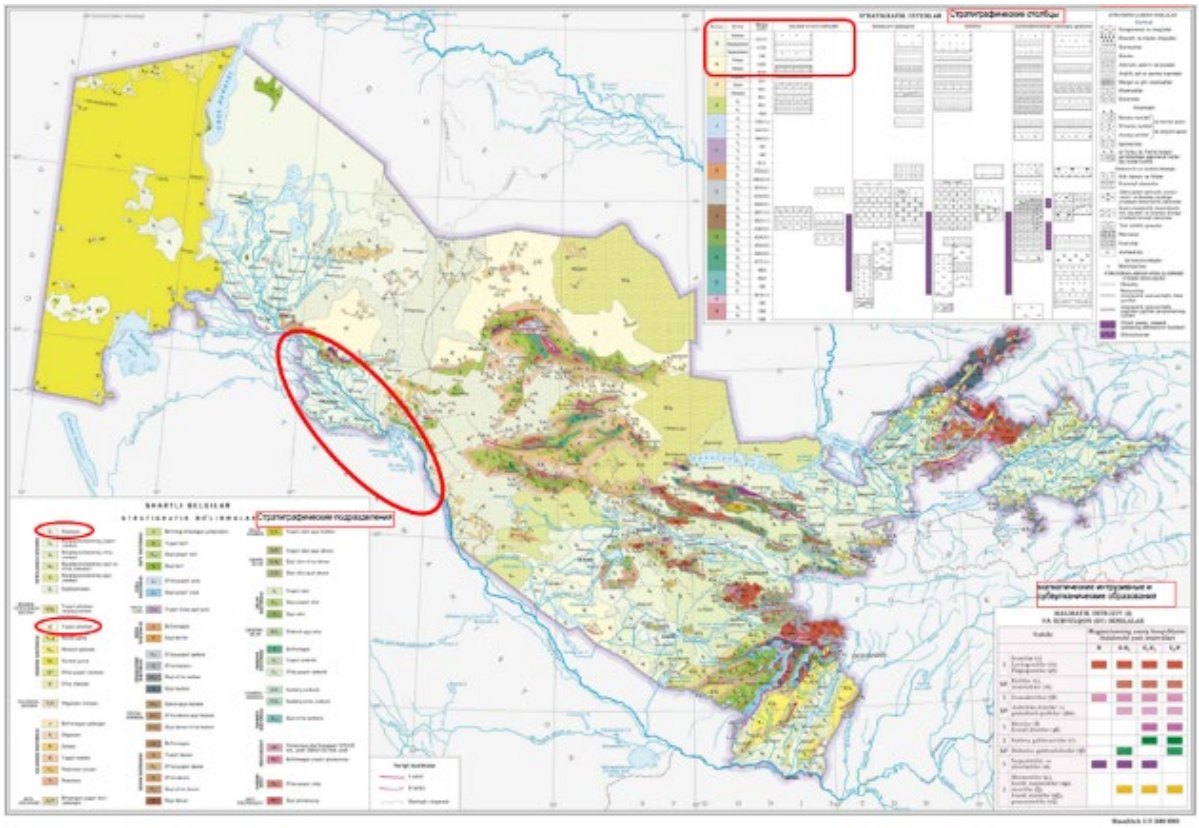


Figure 9: Geologic map of Uzbekistan
(Source: National Atlas)

The geology of the right bank of the river is similar to that of the Kyzylkum Desert. It is an immense desert area, which is mostly excluded from the province classification of agricultural and land resources, and it has a small area for agricultural irrigation.

The Project area lies on the left bank of the river. The terrain of the Project area represents the plain depressions between the small hills, often filled with salt marshes, grey meadow soils, saline soils, intra-oasis sands and *takyrs* (salt flats).

Most territories are irrigated farmlands; about 60% of soils can currently be classified as "irrigated alluvial meadow soils." Developed on alluvial deposits, meadow soils are considered the best land resources, and most have already been cultivated. Soils developed on eluvium are less suitable for farming, with only a fraction of these soils currently being cultivated.

Soil texture is dominated by silt loams, loams, and sandy loams, constituting almost 80% of all soil layers. Organic matter in irrigated soils is low, including, on average, 0.75% in the topsoil layers and decreasing in the deeper layers. Over 32% of the lands are highly saline, and the remaining soils are moderately salty and dispersed.

Due to the increased soil salinity and irrigation mismanagement, about 4.5 ha of the Khorezm Province was classified as marginal lands; land covered by forest and desert tends to have lower salinity levels.

4.1.4. Seismicity

The Project area is located very close to the active seismic South Tien Shan zone and has a seismic intensity of up to 6-7 and with a frequency of once in 1000 years. The recent earthquakes in the province were reported by the Republican Centre for Seismic Monitoring of the Ministry of Emergency Situations, as follows:

- The earthquake[76] with a magnitude of M = 6.6 occurred in Afghanistan on 21 March 2023 at 21:47. In the Khorezm Province, the strength of this earthquake ranged from M =4-5.
- The earthquake[77] with a magnitude of M = 6.0 occurred in Afghanistan on 5 January 2023 at 19:25. In the Khorezm Province, the strength of this earthquake ranged from M =3.

The project area has a history of some strong earthquakes including Kunya-Urgench Earthquake of 1208 with magnitude of 6.2. The seismic map of Uzbekistan and the data on the strongest earthquakes in the region are provided in Figure 7.

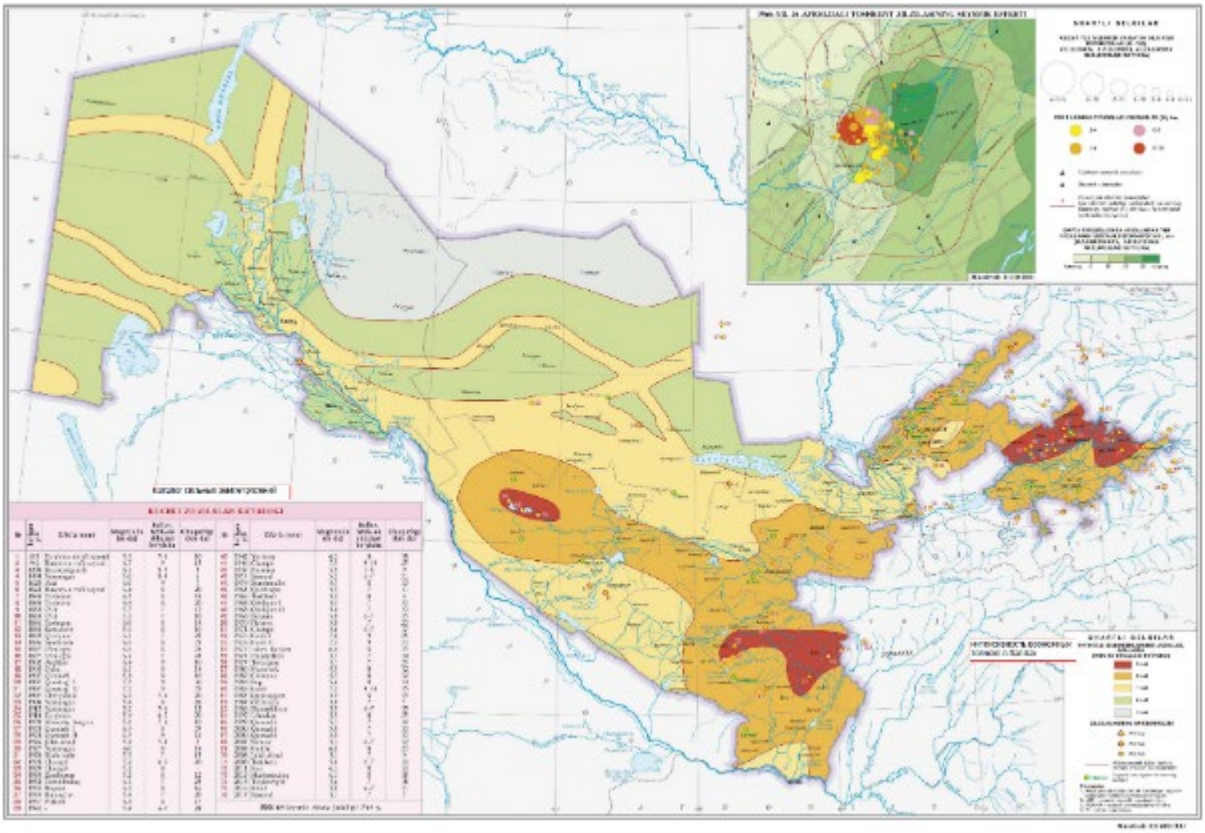


Figure 10: Seismic map of Uzbekistan
(Source: National Atlas of Uzbekistan)

[76] https://aktualno.uz/ru/a/8597-uzbekistan-oshhutil-otgoloski-zemletryaseniya-v-afganistane
[77] https://www.gazeta.uz/ru/2023/01/05/earthquake/

4.1.5. Hydrology

Surface Water

The Project area lies within the Amudarya River Basin. The Amudarya is the largest river in Central Asia, with a drainage area of 309,000 km^2 and a length of 2,540 km. This transboundary river is crossing Afghanistan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan and has three main tributaries: the Kafirnigan, Sherabad and Surkhandarya rivers. The total average annual flow of the Amudarya River is 73 km^3, with a storage volume of 24 billion m^3.

The river water is muddy and carries a large amount of suspended particles. The river has high turbidity of 20.0 to 39.0 mg/L and ranks first among the globe's rivers for the volume of silt in the water. The river, throughout the middle and lower currents, represents a series of channels separated by chalk and sandy islands as illustrated in Figure 8.

The Amudarya River flows along the north-eastern and southern borders of the Project area.

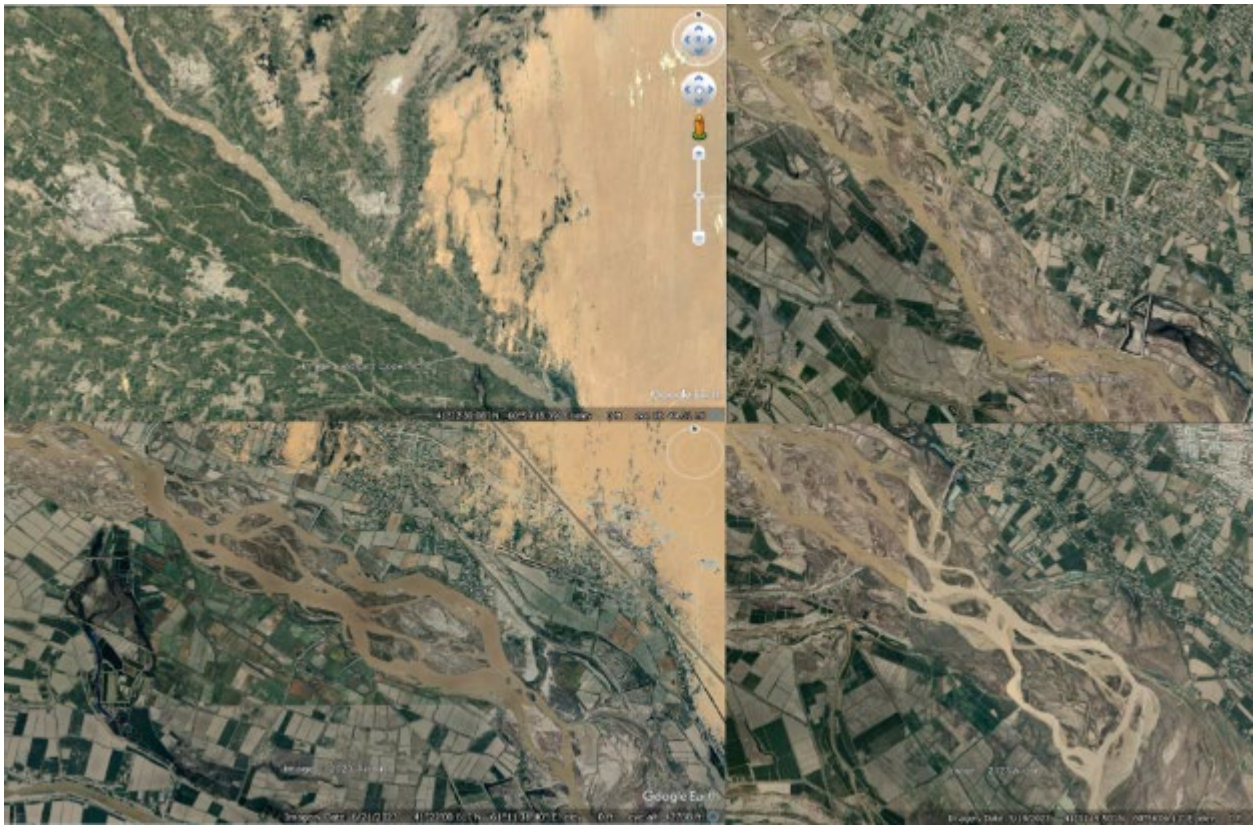


Figure 11: Amudarya River's delta in Khorezm Province
(Source: Google Earth)

For the last decade, the Project area has faced a water deficit, particularly during the vegetation season when the need for water resources is much higher than at other

times. The peak of the water deficit falls on April-May and through the summer. The Uzhydromet Agency[78] reported that in 2021, the peak of the deficit was caused by low river water due to little snow, dry winter, low precipitation in the spring, and high air temperatures. In 2022, the river flow was much higher. Still, due to water withdrawal downstream, including for filling reservoirs severely affected by the drought of 2021, the water deficit reached almost 70% of the water withdrawal limit in the lower reaches. The last fifteen years are considered low water in the river delta: the waters of the Amudarya River reach the Khorezm area much less, resulting in the situation when Tuyamuyun reservoirs cannot accumulate water resources. Since February 2021, the volume of water in reservoirs has never exceeded 4 km^3, which is less than the amount of water in Tuyamuyun reservoirs in the summer of July 2019. For most of the last one and a half years, the volume of water has been less than or equal to the dead volume. The negative trend is primarily caused by climate change, irrational water use, and increased water withdrawal from river tributaries and watersheds.

Almost eighty percent of the Amudarya River is regulated by more than 35 water facilities, among which the two central watersheds are:

- Nurek Dam (Tajikistan) on the Vaksh River, a tributary of the Amudarya River
- Tuyamuyun Hydro System on the Amudarya River (border of Uzbekistan and Turkmenistan)

It is a system of four interconnected reservoirs, and the main dam was constructed in 1969 and commissioned in 1979 with several upgrades in 1970÷1983[79]. The system is shared between Uzbekistan and Turkmenistan: Tuyamuyun Reservoir provides water to Kaparas-Kala Reservoir and Sultansandjar Reservoir (Turkmenistan), which is connected by canal with Koshbulak Reservoir. The system also has a Hydropower Plant of 150 MW on the main dam.

The main pond of the system is Tuyamuyun Reservoir, an enlarged lake behind a dam with a capacity of 7,800 mln. m^3. This dammed river reservoir provides the raw water feed to several irrigation canals and Pitnak WTP, which delivers drinking water. The reservoir is the first part of the water treatment process; water retention time allows particles and silts to settle out along with the primary biological treatment (using algae, bacteria, and zooplankton that naturally live in the water). However, the current state of Tuyamuyun Reservoir is silted for one-third while the water achieved its dead volume.

A series of canals on the lower Amudarya River diverting water to Uzbekistan. In the Project area, the water of the Amudarya River is also diverted into the province's local canals for cotton, wheat, and fodder farming cultivation. Several irrigation and drainage agricultural canals are present in the area, including Palvan, Ermish, Shavat,

[78] https://kun.uz/ru/news/2022/08/16/nizovya-amudari-ispytyvayut-ostryy-defitsit-vody-eksperty-govoryat-o-mertvyx-obyemax
[79] https://wiki5.ru/wiki/Tuyamuyun_Hydro_Complex

Davdon and Kylychniyazbay. According to 2010 data, the length of the irrigation drainage network in the Khorezm Province exceeded 9,000 km.

River floods in different periods and irrigation drainage waters contributed to the formation of lakes in Khorezm Province. Some lakes were the old riverbed of Amudarya River. The province amounts to some 500 lakes and water ponds. Not all lakes have names. The local population labels them by the nearest settlement and the government authorities (Khorezm Province Department of Agriculture, Water Resources, Land Resources, and Cadaster) label them unofficially by the name of the closest farmland. The study area comprises 196 unnamed lakes with an average area of 0.08 km^2. The largest lakes of the province are illustrated in Figure 9.

Figure 12: Lakes in the Project area
(Source: Google earth)

Most lakes have dark and salty water. The largest lake is Lake Ulug Shorkul, with a surface area of 27.4 km^2. The smallest one is Lake Otolikkol, which has an area of 0.007 km^2. Some big lakes represent a system of small water ponds. For example, Lake Dongizuldi, located in Khazarasp District with a total area of 0.7 km^2, is divided into 15 ponds with an average area of 0.05 km^2.

Groundwater

Within the Khorezm oasis, the groundwater table depends on the water level in the Amudarya River. The overall groundwater table in the Project area is highest during the Amudarya River flood period (in spring), while in autumn and winter, it drops sharply. On irrigated lands, the groundwater regime also changes, rising sharply during irrigation and decreasing during the non-irrigation period. Considering the relatively high

groundwater table, the water utility uses the Tukmangit aquifer in the Shavat District as a drinking water source despite its relatively high mineralisation. In some areas of Khorezm Province, groundwater is the only source of drinking water and water for household needs. Most of the households and businesses in the province, in addition to the tap water, have wells in their yards.

4.2. Biological Environment

4.2.1. Nature Protected Areas

Khorezm Province has only one national protected area, Kyzylkum State Reserve which was established in 1971. It is divided between Khazarasp District, in Khorezm Province, and Romitan District in Bukhara Province but is mostly situated in Khorezm Province occupying 8,844 ha.

A nature reserve of regional significance, Yangibazar Reserve was established in the Yangibazar District in accordance with Order of District Government 738 on 10 May 2003. The reserve comprises a lake and the *tugai* system inhabited by semi-aquatic birds and fish.

4.2.2. Terrestrial Biodiversity

More than 148 plant species, belonging to 46 families and 110 genera, are found in the Kyzylkum Nature Reserve[80], 40 of them endemic to Central Asia. The plant varieties are represented by 11 species of ornamental plants, 28 medicinal, 25 melliferous, 39 forage, two types of tanning, four types of poisonous and four types of edible plants on the reserve's territory.

The fauna of the reserve is quite diverse due to the presence of the river, *tugai* forest, and the desert. There are 29 species of reptiles found in the Amudarya River delta. Snakes with habitation in the area include viper, sand ephas, and multi-coloured, spotted, and striated snakes, water snakes, and arrow snakes. The lizards include grey monitor lizard, long-eared, sandy, takyr and spotted round-headed lizards, steppe agama, grey monitor lizard, sandy, lined, striped and other foot-and-mouth lizards, geckos, and others. The Central Asian land turtle is also present in the reserve. Most of these reptiles are found on the right bank of the Amudarya River.

The bird fauna consists mainly of migratory birds since nesting and sedentary birds are represented by a relatively small number of species living within the boundaries of the tugai forest and in the sandy desert. In different seasons, 267 species were recorded in the reserve. Resident species include the white-winged woodpecker, Khiva pheasant, grey tit, the ubiquitous magpie, Turkestan ground jay, ringed and little doves, desert

[80] http://explorers.uz/ru/sights/kizil_kumskiy_gosudarstvenniy_zapovednik.html

raven, golden eagle, and saker falcon. Breeding species are represented by many warblers, crickets, redstarts, and nightingales, settling under the canopy of the riparian forest.

The rare brown pigeon, common doves, hobbies, hawks, common kestrel, marsh harrier, little plover, and hawksbill nest in the reserve. The desert areas are inhabited by African houbara, black-bellied and white-bellied sandgrouse, thick-billed plover, desert warbler, and dunnocks. The migratory species are represented by pelicans, black storks, small cormorants, white-tailed and long-tailed eagles, and steppe eagles.

Mammals are represented by 35 species. Among them, a special place is occupied by the Bukhara deer, whose acclimatisation in the reserve was successful, and currently, this species is a prominent representative of tugai ecosystems. Among other species are the following:

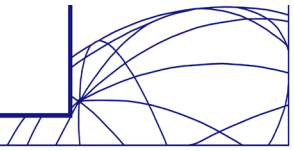
- Wild boar and jackal, which successfully restored their numbers after the creation of the reserve
- Caracal
- Three types of wild cats - the steppe cat, the sand cat, and the jungle cat
- Steppe wolves are often recorded in winter
- Numerous gerbils including great, midday, tamarisk, and thin-toed ground squirrel
- Caragana fox, tolai hare, bandage, badger, and steppe polecat are common in desert areas
- Long-eared hedgehog
- Gazelle and saiga antelopes are also in the reserve during their winter migrations.

4.2.3. Waterfowl and Fauna around Lakes

Fish farms and surrounding lakes in Khorezm Province are located on a waterfowl flyway, e.g., *Ciconiiformes*, *Anseriformes*, and *Laridae*, migrating between their breeding areas in Russia and Northern Kazakhstan and wintering places in Central and Southern Asia[81]. Due to the area's natural water shortage, the role of artificial watersheds in the study area has significantly increased. Waterfowl moved from their lost habitats in the Aral Sea to the artificial water reservoirs (e.g., fish farms), small natural ponds, discharge lakes, and wetlands in Khorezm Province.

One hundred forty bird species have been recorded since 1994 in the Amudarya River Basin, where more than 30 species are waterfowl. Dense thickets of reed on the small lakes and ponds attract *Phalocrocorax carbo, Nycticorax, herons*, and other species for nesting. *Charadrius dubious, C. alexandrinus, Vanellus leucurus, Himantopus, Glareoloa pratincola, Recurvirostra avosetta, Larus genei, Sterna hirundo*, and others

[81] Birdlife International (2023) Important Bird Area factsheet: Khorezm Fish Farm and adjacent lakes. Downloaded from http://datazone.birdlife.org/site/factsheet/khorezm-fish-farm-and-adjacent-lakes-iba-uzbekistan on 07/12/2023



can be found on islets and the open banks of desert waterbodies and salines. *Panurus biarmicus, Hippolais languida, Acrocephalus dumetorum, A. Agricola and Emberiza schoeniculus* also breed.

Up to 20,000 birds (*Fulica atra, Netta rufina*, and *Aythya ferina*) were recorded in the 1990s on Lake Ulug-Shorkul. However, fishing and hunting are becoming increasingly popular in the area, forcing the waterfowl to leave Lake Ulug-Shorkul and other lakes.

The fish farm ponds attract concentrations of fish-eating species – cormorants, herons, gulls, and terns. Nationally and internationally protected species include *Pandion haliaetus, Oxyura leucocephala, Marmaronetta angustirostris, Phoenicopterus roseus, Pelecanus onocrotalus and Haliaeetus albicilla*. The sandy desert surrounding the waterbodies has become degraded because of overgrazing. Typical species in these areas are *Corvus corone, Corvus monedula, Coracias garrulus, Pterocles orientalis, Caprimulgus aegyptius, Galerida cristata, Merops persicus, M. apiaster, Oenanthe deserti, Sylvia nana, Hippolais rama, and Rhodospiza obsoleta*.

Mammals are represented by 17 species, where *Gazelle subgutturosa* is included in the National Red Book (2003), and *Lynx caracal* and *Gazelle subgutturosa* are on the IUCN Red List. *Ondatra zibethicus, Sus scrofa*, and *Lepus tolai* are the game animals.

Amphibians are presented by two species. Reptilians are represented by 17 species, where one of them is included in the National Red Book (*Varanus griseous*), and two are on the IUCN Red List (*Varanus griseous, Testudo horsfieldi*).

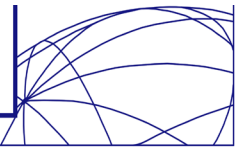
There are 36 species and subspecies of fish from nine families live in small lakes and ponds across the region.

4.2.4. Protected Species

Natural habitats and the nature protected areas in Khorezm Province host a wide variety of wildlife species that fall into various categories of national and international protection status and are included on the IUCN Red List and/or the National Red Book. Those species include:

- Mammals:
  - Goitered Gazelle (*Gazella subgutturosa)* (included in the National Red Book (2009) and the IUCN Red List (listed as Vulnerable)).

- Birds:
  - Saker falcon (Falco cherrug) (IUCN Endangered category)
  - African houbara (Chlamydotis undulata) (IUCN Endangered category)
  - Steppe eagle (Aquila nipalensis) (IUCN Endangered category)
  - White-headed duck (Oxyura leucocephala) (IUCN Endangered category)



  - Marble teal (*Marmaronetta angustirostris*) (IUCN Near Threatened category)

- Reptiles:
  - Russian tortoise (*Testudo horsfieldii*) (IUCN Vulnerable category)
  - Desert monitor (*Varanus griseus*) (included in the National Red Book)

- Fish:
  - Amudarya shovelnose sturgeon (Pseudoscaphirhynchus kaufmanni) listed by the IUCN Red List as Critically Endangered.
  - Small Amudarya shovelnose sturgeon (Pseudoscaphirhynchus hermanni) (IUCN Critically Endangered category).
  - Aral barbel (*Luciobarbus brachycephalus*) (IUCN Vulnerable category).

- Plants:
  - Korolkov's Tulip (*Tulipa korolkowii*) is included in the National Red Book (2009) and the IUCN Red List (listed as Near Threatened).

4.3. Climate Change

Uzbekistan is among the countries most vulnerable to climate change[82]. Increase in average annual air temperatures in Uzbekistan occurs on the background of high natural variability, which is stipulated by considerable inter annual variations. Warming rates exceed the natural rate observed on the global scale. On average Uzbekistan's warming rate is 0.27°C per 10 years. The projections show that air temperature in Uzbekistan will continue increasing and is likely to increase by 1-1.4°C by 2030 causing intensive heat waves to be more frequent.

In terms of water deficiency, it will increase by 11% to 14% on average between 2021 and 2040 according to all climate scenarios considered.

With respect to the Project area, Khorezm Province, along with the Republic of Karakalpakstan and Syrdarya Province, was found to be among Uzbekistan's regions that are most affected by climate change. According to most scenarios:

- The number of days experiencing temperatures of above 39°C in Khorezm Province is likely to increase to 19-21 between 2021 and 2040, as compared with only 10 days between the base period of the years 1980-1999[83].
- In the regions located in lower reaches of the Amudarya River basin (including Khorezm Province), droughts will be observed more frequently due to the area's

[82] UNDP/GEF. 2016. Uzbekistan's Third National Communication to the United Nations Framework Convention: https://unfccc.int/sites/default/files/resource/TNC%20of%20Uzbekistan%20under%20UNFCCC_english_n.pdf

[83] Ibid, p. 112.

long distance from the upper watersheds and many years of intensive water use practices[84].

Extreme temperatures may negatively impact the performance of equipment installed in the water and wastewater treatment facilities. The anticipated temperature in the Project area may be beyond 40°C in the summer months. Such temperatures may cause open-air electronic and electric equipment failure.

In addition, weather conditions can intensify odours. Odour is often a major concern during the operation of WWTP. Temperature inversions, wind velocity, and wind direction contribute to how far odour emissions drift, where odours are typically worse at higher temperatures.

4.4. Cultural Heritage

The province's name comes from the Persian language: the area has been known as Khwarazm, *Khwarezm, Khwarezmia*, and *Khwarazm*. It is also known as *Chorasmia* in Greek and *Xvairizem* in Old Persian. The name "*Khorezm*" is the existing name of the province. The etymologists believe that the Iranian compound stands for "*kh(w)ar*" as "*low*" and "*zam*" as "*land*." *Khwarazm* is the lowest region in Central Asia (except for the Caspian Sea to the far west), located on the Amudarya River delta. Plains and small hills occupy the entire province territory, justifying the name of the land.

The area has ancient roots. Khorezm formed part of the empire of Achaemenian Persia (6th – 4th century BCE). The Arabs conquered it and introduced Islam to this area in the 7th century CE. From the late 11th to the early 13th century, Khorezm was ruled by the Kharezm Shakh Dynasty. After that, the territory was led by the Mongols, Timurids, and Shaibanids until the 16th century, when it became the Khiva Khanate under the Ilbars Dynasty. Since 1717, Khiva Khanate has experienced Russian invasions, and in 1873, it was conquered and made a Russian protectorate until 1920. After the Russian Revolution of 1917, the Khiva Khanate was abolished and replaced by the Khorezm People's Soviet Republic (1920-1924), which was subsequently dissolved and incorporated into the Soviet Union. Later, in 1938, the area was divided between Uzbekistan and Turkmenistan[85]. However, only the land on the Uzbek side has retained its original name, Khorezm, becoming Khorezm Province of Uzbekistan.

The team conducted desktop and field surveys and revealed no UNESCO world heritage in the project districts. However, there are a number of ancient settlements included in the national cultural and architectural heritage list. The Regulation of Cabinet of Ministers of Uzbekistan No. 846 of October 04, 2019[86] specifies the list of

[84] Ibid, p. 125.
[85] https://en.wikipedia.org/wiki/Khwarazm, https://www.britannica.com/place/Khwarezm
[86] Regulation of Cabinet of Ministers of Uzbekistan No. 846 of October 04, 2019 "About approved list of national cultural heritage objects", https://lex.uz/ru/docs/4543266

national archaeological and cultural heritage sites in Khorezm Province. The legal act also provides for Khorezm Province Cultural Heritage Department as overseeing authority for these archaeological and cultural heritage sites (ACHS).

Table 13: Archaeological and Cultural Heritage Sites in Khorezm Province

No.	Site	Category	Construction Period	Location
1.	Kalajik (David-Kala) Ensemble of Buildings	Archaeologic site	IV-III bc	Kalajik Community, Bagat District
2.	Kirqkiztepa Village	Archaeologic site	IV-II bc; IX-X ad	Khorazm Community, Bagat District
3.	Koshkaqirgan Village	Archaeologic site	VII-VIII ad	Khorazm Community, Bagat District
4.	Mausoleum of Islam Sheikh Baba	Architectural heritage	XIX ad	Mirishkor Community, Bagat District
5.	Tomb of Sheikh Odina Muhammad Khorazmiy	Architectural heritage	1826	Dekhkonobod Community, Bagat District
6.	Tomb of Osman Said Bobo	Architectural heritage	XIV – XIX ad	Community, Gurlen District
7.	Zorlik Eshanbabo Castle	Archaeologic site	VII – XIV ad	Kenegas Community, Kushkupir District
8.	Khandakkul Village	Archaeologic site	IX – XIII ad	Kenegas Community, Kushkupir District
9.	Kukhnakala Castle	Archaeologic site	IV – II bc	Ashirmat Community, Kushkupir District
10.	Ashurmattepa Cemetery	Archaeologic site	XII – XIV ad	Ashirmat Community, Kushkupir District
11.	Imorat Baba Complex of Mosque, Imorat Baba Mausoleum, Mir Muhammad Aziz Mausoleum, and Said Shahoat Aziz Mausoleum	Architectural heritage	1795	Shikhmashkhad Community, Kushkupir District
12.	Tuzlaq Village	Archaeologic site	IV-III bc; IX — XIII ad	Amir Temur Community, Urgench District
13.	John Kharos Bobo Mausoleum	Architectural heritage	XVII – XIX ad	Goybu Community, Urgench District
14.	Ulli Khovli Ensemble of Buildings	Architectural heritage	XVIII – XIX ad	Goybu Community, Urgench District
15.	Tomb of Shovod Khoja Baba	Architectural heritage	XVII – XVIII ad	Koravul Community, Urgench District
16.	Fortress City of Khazarasp	Architectural heritage	IV – II bc	Sulaimon Kala Community, Khazarasp District
17.	Chingiztepa Ensemble of Buildings	Archaeologic site	V – VII ad	Shorlovuk Community, Khazarasp District
18.	Sandiqli Baba Town	Archaeologic site	VII – VIII ad and IX – XII ad	Ovshar Community, Khazarasp District
19.	Tuprok Kala Town	Archaeologic site	IV – III bc	Khazarasp District

No.	Site	Category	Construction Period	Location
20.	Sartarosh Caravanserai Ruins	Archaeologic site	X ad	Khazarasp District
21.	Meshekli Kala	Archaeologic site	V bc and XII-XIII ad	Khazarasp District
22.	Karatosh (Khumbuz) Tepa	Archaeologic site	VII bc – IV ad	Shorlovuk Community, Khazarasp District
23.	Tashsaka Monument	Archaeologic site	V – I bc	Ovshar Community, Khazarasp District
24.	Tashmazar Mound	Archaeologic site	XVI – XV bc	Khazarasp District
25.	Uch Uchak Mazar Mound	Archaeologic site	X – IV bc	Khazarasp District
26.	Naus Tepa	Archaeologic site	V bc	Khazarasp District
27.	Tash-Kala Caravanserai Ruins	Archaeologic site	XII-XIII ad	Khazarasp District
28.	Eshan Rabat Caravanserai Ruins	Archaeologic site	IX-XIII ad	Khazarasp District
29.	Sardoba	Archaeologic site	XV ad	Khazarasp District
30.	Muzrab Shah Khorazmiy Mausoleum	Architectural heritage	XIV – XIX ad	Khazarasp District
31.	Djuma Masjidi Mosque	Architectural heritage	XIV ad	Sulaimon Kala Community, Khazarasp District
32.	Tomb of Ismail Eshan Bobo	Architectural heritage	XVI – XIX ad	Yangibazar Community, Khazarasp District
33.	Kranzh Bobo Ensemble of Buildings	Architectural heritage	XVI ad	Mukhamon Community, Khazarasp District
34.	Tanobli Auliya Mausoleum	Architectural heritage	XIX ad	Mukhamon Community, Khazarasp District
35.	Tomb of Shaikh Kosim	Architectural heritage	VII ad	Yangibazar Community, Khazarasp District
36.	Mausoleum of Shakhid Baba	Architectural heritage	XIV – XIX ad	Karvak Village, Yangiobod Community, Khazarasp District
37.	Tomb of Shaikh Hussein	Architectural heritage	XIV – XIX ad	Ovshar Community, Khazarasp District
38.	Mausoleum of Shah Pir Baba	Architectural heritage	XVI – XIX ad	Oybek Community, Khazarasp District
39.	Monument of Allaberghan Gawdonboy	Architectural heritage	1910	Galaba Street, Khanka District Centre
40.	Said Ota Ensemble of Buildings	Architectural heritage	1766	Khanka District Centre
41.	Vayagan Bobo Tepa and Tomb	Archaeologic site	II – XIV ad	Chukli and Ogahyi Communities, Shavat District
42.	Kiyot Settlement (Kat Kala Castle) Ensemble of Buildings	Archaeologic site	IV-III bc, VII – XIII ad, XVII – XIX ad	Katkala Community, Shavat District
43.	Tuprok Kala Settlement	Archaeologic site	III – IV ad	Chukli Community, Shavat District

No.	Site	Category	Construction Period	Location
44.	Tomb of Vayagan Bobo	Architectural heritage	XVI — XIX ad	Chukli and Ogahyi Communities, Shavat District
45.	Tomb of Yusuf Khamadonyi	Architectural heritage	XIX ad	Beshmergan Community, Shavat District
46.	Olma Otishgan Ensemble of Buildings	Architectural heritage	IV-III bc, I — XIV ad	Kattabog Community, Yangiarik District
47.	Ostona Tepa	Architectural heritage	IX – XIV ad	Ostona Community, Yangiarik District
48.	Tomb of Sheikh Mukhtar Vali	Architectural heritage	XIV ad	Ostona Community, Yangiarik District

(Source: https://lex.uz/ru/docs/4543266)

The table above shows that most ACHSs are in the Khazarasp district and the smallest registered ACHSs are in the Khanka and Yangiarik districts. Other ACHSs are in Urgench, Bagat, Kushkupir, and Shavat districts. All the mentioned ACHS are immovable archaeological and cultural assets.

During public consultations, the local population was concerned about the ACHSs and potential threats by the project activities. They asked to respect the tombstones of ancient saints, cemeteries, and historic architectural ensembles of buildings and consider existing and possible ACHSs in the area while designing and constructing facilities and infrastructure not to affect ACHSs.

4.5. Socio-Economic Baseline

As with the previous Chapter, this Chapter describes the social baseline conditions within the entire AoI of the entire Project, with the specific social baseline of each of the subprojects to be described and assessed under each of the subproject's ESIA.

4.5.1. Demographics

Population Distribution

The population of Khorezm Province is generally young. As of 2022, the population of Khorezm District was 1,924,163, where children 0-17 comprised a noticeable share, 34.14%, and young working adults (18-39) made up 36.4%. The next age group with a significant percentage was middle-aged adults aged 40-59, making up 21.54% of the residents. People aged 60 years comprised the smallest age group, 7.68%.

Table 14: Population by age, 2022 (in thousand people)

Urban Centre	0-7	8-17	18-29	30-39	40-59	60-69	70-79	80+
Urgench city	22.9	25.1	27.0	25.3	32.7	10.2	2.4	1.0
	16%	*17%*	*18%*	*17%*	*22%*	*7%*	*2%*	*1%*
Khiva city	14.5	16.5	20.6	16.2	20.3	4.6	1.9	0.7
	15%	*17%*	*22%*	*17%*	*21%*	*5%*	*2%*	*1%*
Bagat District	28.3	29.3	33.4	30.4	35.4	9.0	2.7	1.0
	17%	*17%*	*20%*	*18%*	*21%*	*5%*	*2%*	*1%*
Gurlen District	24.4	27.5	31.5	25.3	32.1	7.4	2.9	0.9
	16%	*18%*	*21%*	*17%*	*21%*	*5%*	*2%*	*1%*
Khazarasp District	33.7	35.7	37.4	32.4	42.4	11.8	4.1	1.2
	17%	*18%*	*19%*	*16%*	*21%*	*6%*	*2%*	*1%*
Khiva District	26.0	30.4	28.7	23.8	30.2	7.0	2.8	0.8
	17%	*20%*	*19%*	*16%*	*20%*	*5%*	*2%*	*1%*
Khanka District	31.8	33.8	39.6	32.0	41.6	8.9	2.6	1.1
	17%	*18%*	*21%*	*17%*	*22%*	*5%*	*1%*	*1%*
Kushkupir District	29.6	31.6	35.1	29.7	37.6	9.0	2.3	1.1
	17%	*18%*	*20%*	*17%*	*21%*	*5%*	*1%*	*1%*
Shavat District	29.8	30.1	34.9	27.2	39.7	8.8	2.7	1.1
	17%	*17%*	*20%*	*16%*	*23%*	*5%*	*2%*	*1%*
Tuprokkala District	10.0	9.5	11.3	9.3	12.0	3.1	1.2	0.3
	18%	*17%*	*20%*	*16%*	*21%*	*5%*	*2%*	*0%*
Urgench District	31.4	35.9	38.5	37.5	45.3	12.1	3.6	1.2
	15%	*17%*	*19%*	*18%*	*22%*	*6%*	*2%*	*1%*
Yangiarik District	18.1	20.0	25.7	19.9	26.6	5.9	1.9	0.8
	15%	*17%*	*22%*	*17%*	*22%*	*5%*	*2%*	*1%*
	14.6	16.3	16.1	16.2	18.5	5.2	1.9	0.6

Urban Centre	0-7	8-17	18-29	30-39	40-59	60-69	70-79	80+
Yangibazar District	*16%*	*18%*	*18%*	*18%*	*21%*	*6%*	*2%*	*1%*
Khorezm Province	315.1	341.6	379.8	325.1	414.6	103.0	33.1	11.8
	16.4%	*17.8%*	*19.7%*	*16.9%*	*21.5%*	*5.4%*	*1.7%*	*0.6%*

(Source: Khorezm Province Department of Uzbek Statistics Agency, 2023)

In 2022, senior adults aged 80+ were in Khazarasp District (1,204 people), whereas the smallest number was in Yangibazar District (551 people).

The largest share of children aged 0-7 years lived in 2022 in Khanka District (31,823 people), while middle-aged adults (40-59 years old) were widely distributed in Khiva District (30,170 people), Khanka District (41,640 people) and Shavat District (39,689 people). A more detailed picture of the age structure for 2022 in Khorezm Province is provided in the figure below.

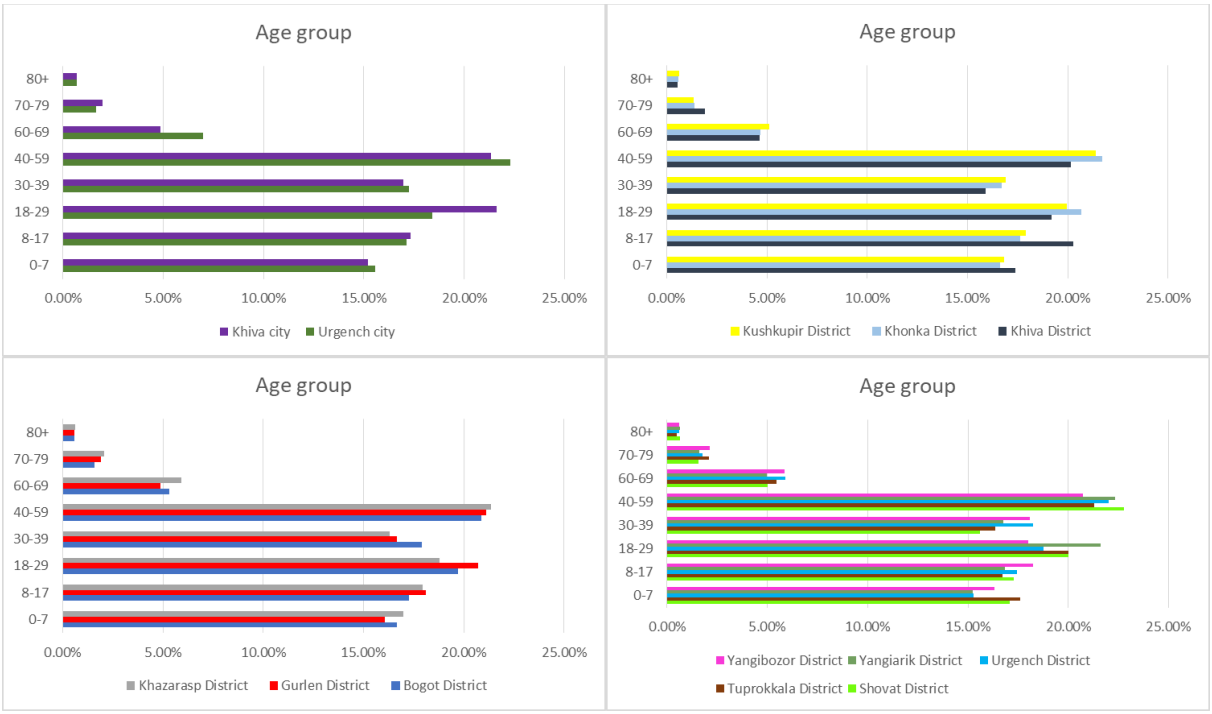


Figure 13: Population by age per urban centre, 2022
(Source: Khorezm Province Department of Uzbek Statistics Agency, 2023)

Population Density

Table 12 below provides data on population size over seven years period, 2017-2023. The population of Khorezm Province is 1,958,100 people as of Q1, 2023.

Table 15: Population size of the province (2017-2023)

Area	2017	2018	2019	2020	2021	2022	Q1 2023
Urgench city	139,272	140,180	141,685	143,750	144,964	146,721	149,942
Khiva city	-	89,265	90,738	92,176	93,355	95,258	96,974

Area	2017	2018	2019	2020	2021	2022	Q1 2023
Bagat District	155,432	158,057	160,859	163,761	166,571	169,488	172,575
Gurlen District	141,339	143,235	145,461	147,669	149,535	151,949	154,475
Khazarasp District	235,661	239,390	243,501	247,756	196,923	198,658	202,178
Khiva District	225,543	139,943	142,530	144,895	147,409	149,687	152,080
Khanka District	176,722	179,584	182,695	185,488	188,309	191,615	194,896
Kushkupir District	162,961	165,624	168,593	171,647	173,713	176,056	178,943
Shavat District	160,566	163,429	166,421	169,284	171,693	174,348	177,124
Tuprokkala District	-	-	-	-	54,412	56,558	57,926
Urgench District	186,224	190,147	193,914	197,528	201,247	205,473	209,245
Yangiarik District	110,211	111,862	113,703	115,559	117,161	118,927	120,880
Yangibazar District	82,799	84,218	85,590	86,980	88,028	89,425	90,853
Khorezm Province:	1,776,730	1,804,934	1,835,690	1,866,493	1,893,320	1,924,163	1,958,091

(Source: Khorezm Province Department of Uzbek Statistics Agency, 2023)

Population density per district and overall, for Khorezm Province was calculated by dividing the population number by the size of the province area: *Population Density = Number of People/Land Area*. The province area is 6,052 square kilometres, so the overall population density of the province is 324 people per square kilometre.

The calculations revealed that for Urgench and Khiva cities, the population density over six years was relatively high, averaging 4,905.5 and 2,909 people per square kilometre. In contrast, Tuprokkala District has the lowest population density, i.e., 31.2 people per square kilometre. This district has the largest area and smallest population in Khorezm Province. The Bagat, Gurlen, Khiva, Kushkupir, and Shavat districts have roughly the same population density average of around 350 people per square kilometre. Khanka, Khazarasp, and Urgench Districts have a slightly bigger population density, averaging about 450 people per square kilometer. Two other territories, Yangiarik and Yangibazar Districts, are less populated and have an average population density of around 280 people per square kilometre.

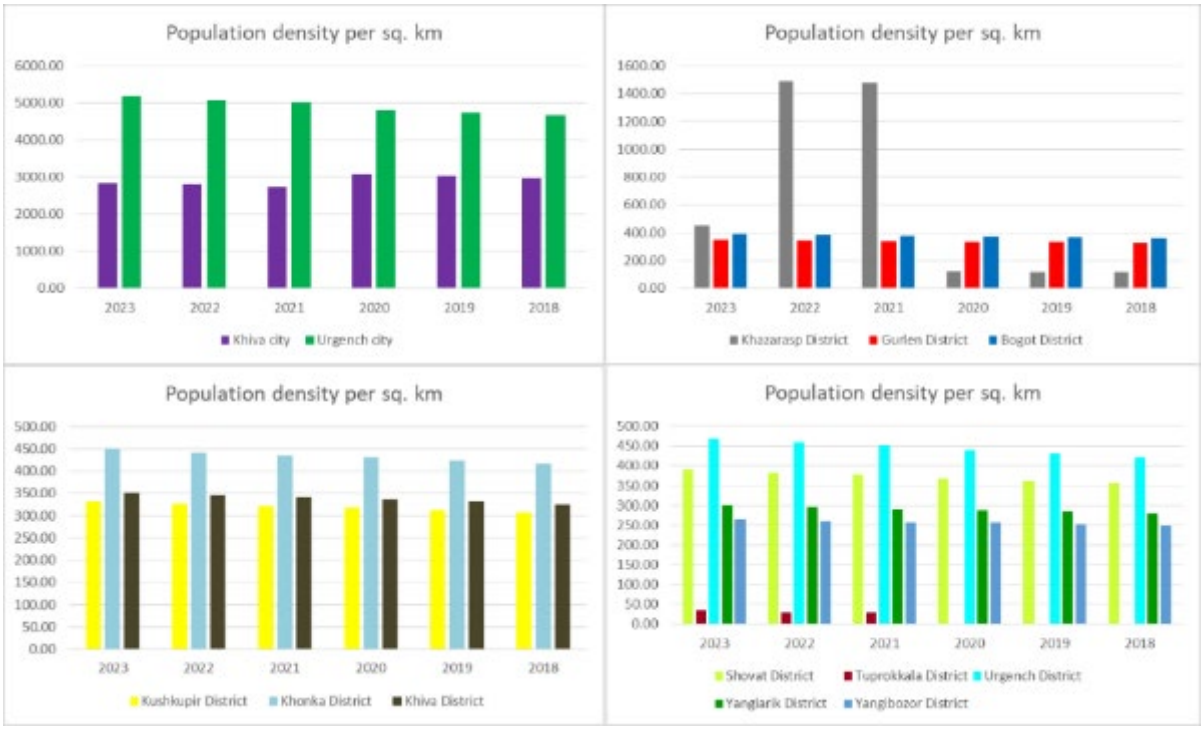


Figure 14: Population density in Khorezm Province (2019-2023)
(Source: Khorezm Province Department of Uzbek Statistics Agency, 2023)

The population density in cities, towns, and urban settlements is higher than in rural areas. However, the overall rural population is much higher than those living in urban areas.

Table 16: Distribution of population between urban and rural areas (Q1, 2023)

No.	Urban Centre	Total (people)	Urban Population (people)	Rural Population (people)	Rural population (%)
1.	Urgench city	149,942	149,942	-	-
2.	Khiva city	96,974	96,974	-	-
3.	Bagat District	172,575	30,322	142,253	82.43%
4.	Gurlen District	154,475	66,032	88,443	57.25%
5.	Khazarasp District	202,178	31,274	170,904	84.53%
6.	Khiva District	152,080	17,216	134,864	88.68%
7.	Khanka District	194,896	66,693	128,203	65.78%
8.	Kushkupir District	178,943	45,785	133,158	74.41%
9.	Shavat District	177,124	45,722	131,402	74.19%
10.	Tuprokkala District	57,926	24,483	33,443	57.73%
11.	Urgench District	209,245	27,802	181,443	86.71%
12.	Yangiarik District	120,880	28,726	92,154	76.24%
13.	Yangibazar District	90,853	16,840	74,013	81.46%
	Khorezm Province:	1,958,091	647,811	1,310,280	66.92%

(Source: Khorezm Province Department of Uzbek Statistics Agency, 2023)

The largest share of the rural population (close to 80%) lives in Bagat, Khazarasp, Khiva, Urgench, and Yangibazar districts, while the smallest part of the rural population, compared to other regions, lives in Gurlen District (57.25%). The figure below shows the strong contrast between urban and rural populations in Khorezm Province districts.

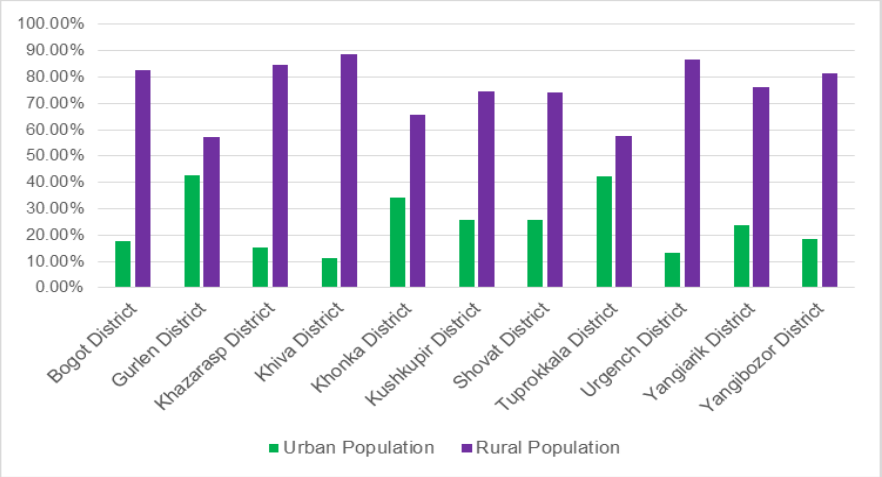


Figure 15: Urban/rural population comparison in the districts, data as of Q1, 2023
(Source: Khorezm Province Department of Uzbek Statistics Agency, 2023)

Gender Distribution

The data provided by the Khorezm Province Department of Uzbek Statistics Agency for Q1, 2023, specifies a comparatively even distribution of men and women in Khorezm Province. The province has more male than female inhabitants, which is not common for in some districts and Khiva.

Table 17: Gender distribution as of Q1, 2023

No.	Urban Centre	Total, people	Men		Women	
			people	%	people	%
1.	Urgench city	149,942	75,165	50.13%	74,777	49.87%
2.	Khiva city	96,974	48,092	49.59%	48,882	50.41%
3.	Bagat District	172,575	85,523	49.56%	87,052	50.44%
4.	Gurlen District	154,475	78,257	50.66%	76,218	49.34%
5.	Khazarasp District	202,178	101,016	49.96%	101,162	50.04%
6.	Khiva District	152,080	75,661	49.75%	76,419	50.25%
7.	Khanka District	194,896	98,478	50.53%	96,418	49.47%
8.	Kushkupir District	178,943	90,252	50.44%	88,691	49.56%
9.	Shavat District	177,124	88,476	49.95%	88,648	50.05%
10.	Tuprokkala District	57,926	28,542	49.27%	29,384	50.73%
11.	Urgench District	209,245	103,847	49.63%	105,398	50.37%
12.	Yangiarik District	120,880	60,943	50.42%	59,937	49.58%
13.	Yangibazar District	90,853	45,428	50.00%	45,425	50.00%

No.	Urban Centre	Total, people	Men		Women	
			people	%	people	%
	Khorezm Province:	1,958,091	979,680	50.03%	978,411	49.97%

(Source: Khorezm Province Department of Uzbek Statistics Agency, 2023)

Women account for a higher share of the population in Bagat, Khiva, Shavat, and Urgench districts, while in Khiva city, there are more women than men. In contrast, men's share is more significant in some villages of the Urgench, Khanka, and Khiva districts. Some gender deviation is also seen in nine rural communities of Shavat District, where females represent the most significant share of the village population (54% and above).

However, the overall deviation between men and women populations is not significant and accounted for the average gender ratio of 0.99.

Population Growth

The districts of the province with the greatest population are Khazarasp District (202,200 people), Khanka District (194,900 people), and Urgench District (209,200 people). Meanwhile, the least populated area of the province is Tuprokkala District (57,900 people). Bagat, Kushkupir, and Shavat districts have a rough population size of around 180 thousand people per district.

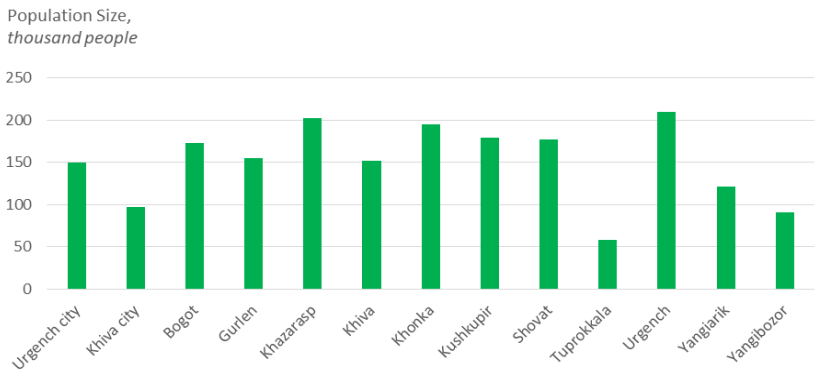


Figure 16: Distribution of Population as of Q1, 2023
(Source: Khorezm Province Department of Uzbek Statistics Agency, 2023)

The population has been growing steadily by an average of 1.63% per year over the past seven years (2017-2023).

Table 18: Population size and growth rate (2017-2023)

Indicator	2017	2018	2019	2020	2021	2022	Q1, 2023
Population size, people	1,776.70	1,805.00	1,835.70	1,866.50	1,893.32	1,924.16	1,958.10
Population growth, %	-	1.59%	1.70%	1.68%	1.44%	1.63%	1.76%

(Source: Khorezm Province Department of Uzbek Statistics Agency, 2023)

The population has increased by 181,400 people from 1,776,700 in 2017 to 1,958,100 in 2023. As expected, the population increased significantly in Urgench and Khiva cities. The pattern of consistent population growth is only observed in some districts. Over the same period, the population decreased and increased in some areas of the province for various reasons.

The population growth has been more robust in Bagat (1.84%), Khanka (1.71%), and Khazarasp (1.78%) districts in 2023. As mentioned above, the Tuprokkala District was established in 2021 from the Khazarasp District, so its population growth has only been available for two recent years and shows a steady increase. Accordingly, a sharp decline in population growth was observed in 2021 (-20.50 %) when some populations were transferred to the new Tuprokkala District.

The Urgench and Shavat Districts experienced a decline in population growth from 2017 to 2023; perhaps these changes were related to increasing outward migration and natural population decline.

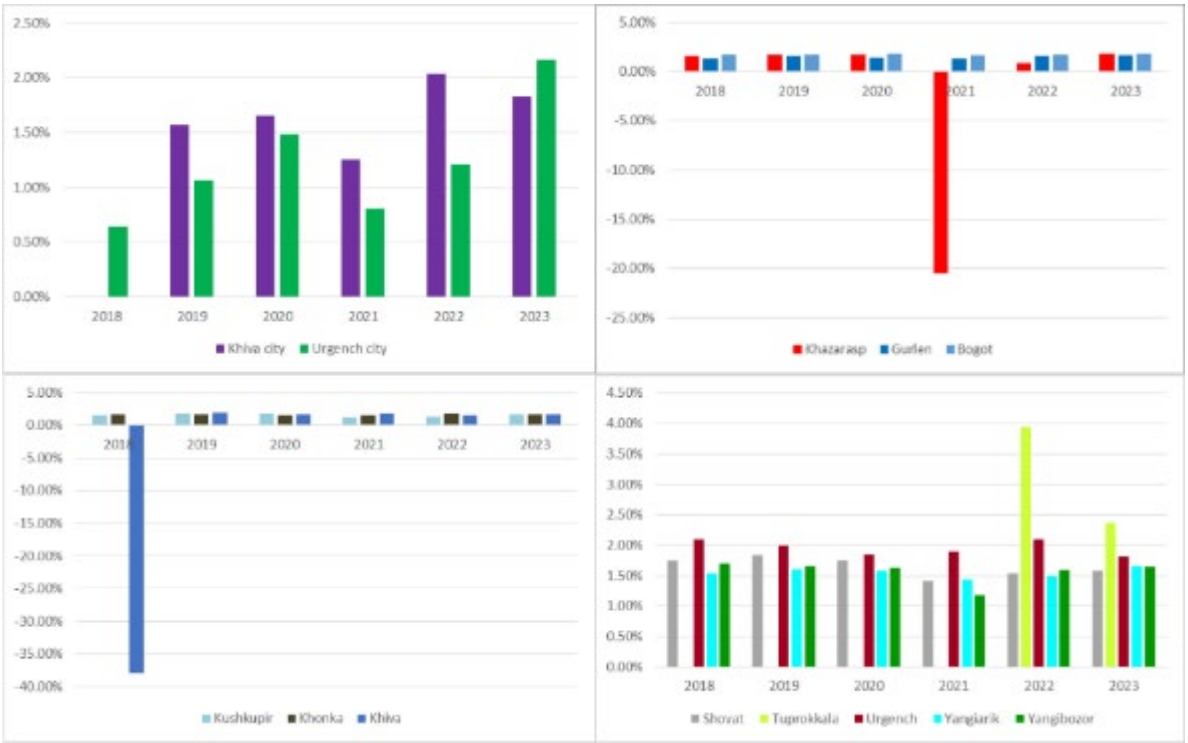


Figure 17: Population growth in 2018-2023 per districts
(Source: Khorezm Province Department of Uzbek Statistics Agency, 2023)

The natural population decline rate in the province is associated with the prevalence of the male death rate above the female death rate.

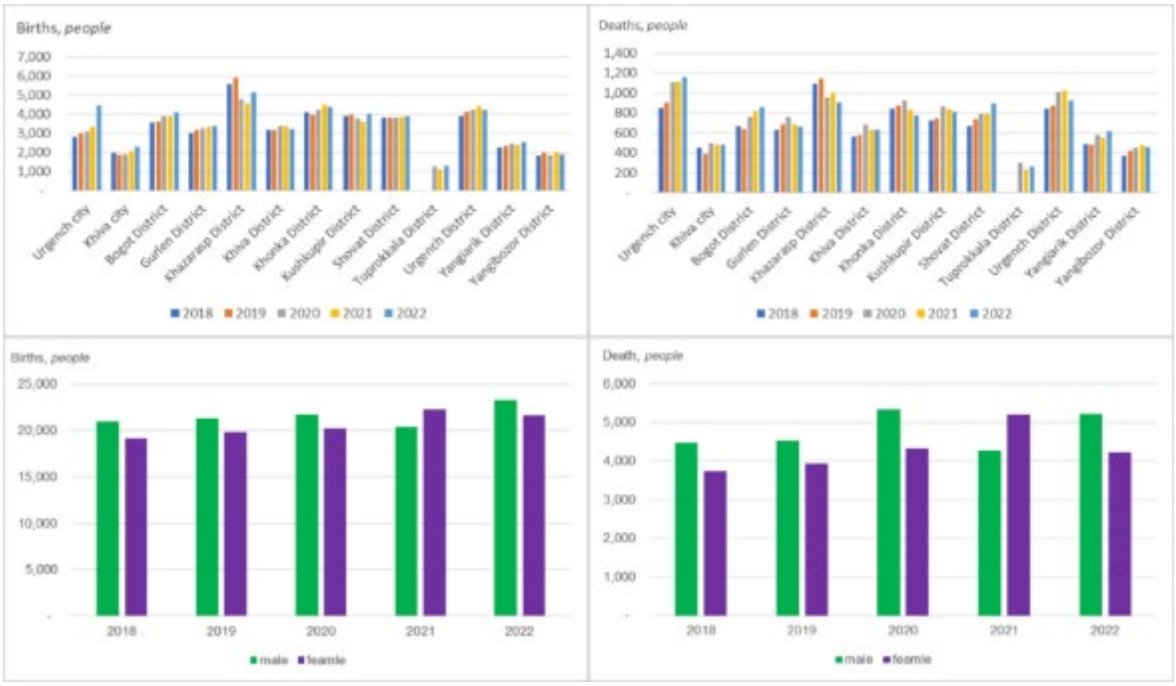


Figure 18: Births and deaths data over the 2018-2022 period
(Source: Khorezm Province Department of Uzbek Statistics Agency, 2023)

Since 2018, there has been an increase in deaths in both men and women. For men, this figure was changed from 4,466 people in 2018 to 5,217 in 2022, and for women, deaths increased from 3,737 people in 2018 to 5,199 in 2021 and slightly decreased in 2022 to 4,229 people.

With regard to the birth rate, the birth rate of boys is higher than that of girls for most of the years between 2018 and 2023. The birth rate of boys, on average, increased by 722 people per year from 2018 to 2022, and the birth rate of girls increased by about 390 people per year in 2018-2019 and by more than 2,000 by the end of 2022. Despite high mortality across the region, natural population growth remains positive.

Table 19: Natural growth of the population (2018-2022), people

Period	Live births			Deaths			Natural growth		
	All	Boys	Girls	All	Men	Women	All	Men	Women
2022	44,920	23,296	21,624	9,446	5,217	4,229	35,474	18,079	17,395
2021	42,653	20,388	22,265	9,463	4,264	5,199	33,190	16,124	17,066
2020	41,978	21,721	20,257	9,671	5,349	4,322	32,307	16,372	15,935
2019	41,092	21,309	19,783	8,467	4,530	3,937	32,625	16,779	15,846
2018	40,103	20,937	19,166	8,203	4,466	3,737	31,900	16,471	15,429

(Source: Khorezm Province Department of Uzbek Statistics Agency, 2023)

Migration

The population migration data provided by the Uzbek Statistics Agency shows a trend for net outward migration. The largest population outflow was observed in 2020, with 5,480 people as net outward migration. The outflow of the population decreased by more than half in the next two years but did not drop below 1,100 people as net outward migration.

Table 20: Net migration of the population (2018-2022), people

Period	Inward migration	Outward migration	Net migration
2022	6,685	8,231	-1,546
2021	9,855	12,202	-2,347
2020	4,987	10,467	-5,480
2019	5,752	7,574	-1,822
2018	6,308	7,452	-1,144

(Source: Uzbek Statistics Agency, 2023)

Most of that outward migration is of people of young working age, i.e., between 20 and 39 years old, followed by the 40-59 age group and those under 20. Migration is associated with finding a permanent occupation, educational opportunities, and marriage decisions. The outward migration from Khorezm Province is small in the population size of the province and remains consistent for all the years of 2018-2022, at 0.5% on average.

Ethnicity

The population of the Khorezm region is ethnically diverse. According to the data of the Committee of the Interethnic Relations under the Ministry of Culture and Tourism of Uzbekistan, Uzbeks make up 92.84% of the total population. Turkmens, Tajiks, Russians, Tatars, Koreans, Kazakhs, Ukrainians and other nationalities are represented in small numbers (Figure 16).

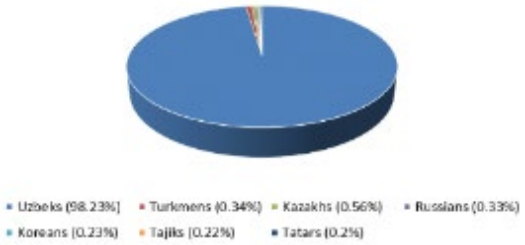


Figure 19: Ethnic groups

(Source: Committee of the Interethnic Relations under the Ministry of Culture and Tourism of Uzbekistan[87])

[87] https://interkomitet.uz/o-komitete/nacionalnye-kulturnye-centry/#1519390214856-246b1949-35f0, https://www.gazeta.uz/ru/2021/08/20/ethnic-groups/, https://ru.wikipedia.org/wiki/Хорезмская_область#Население

4.5.2. Economic Profile

Employment and Income

The working age population in Uzbekistan is males aged 16 to 60 and females aged 16 to 55, except non-working disabled people of the first and second disabilities categories and those receiving an old-age pension on preferential terms. As of July 01, 2022, the province's working-age population was 59.1% of the total population. In 2022, only 42.1% (811,000 people) of the total population were reported to be economically active, and 12.84% (247.022 people) were registered as economically inactive.

According to the International Labour Organisation: "*The economically active population' comprises all persons of either sex who furnish the supply of labour for the production of economic goods and services as defined by the United Nations systems of national accounts and balances, during a specified time-reference period.*" So, the economically active population comprises residents in employment and the unemployed population. In 2018-2022, the average unemployment rate was 9.68%.

Table 21: Unemployment rate, 2017-2021, people

Period	Economically active	Residents in employment	Unemployed	Unemployment rate, %
2022	811,000	1,057.95	73,174	9,0%
2021	806,400	726,400	80,000	9.92%
2020	804,500	716,400	88,100	10.95%
2019	810,000	736,500	73,500	9.07%
2018	786,000	711,800	74,200	9.44%

(Source: Khorezm Province Department of Uzbek Statistics Agency, 2023)

Table 22: Economic activity of population, 2017-2022

Indicator	2017	2018	2019	2020	2021	2022*	Average
Residents in employment:	1,000.6	1,013.4	1,029.6	1,044.8	1,047.1	1,057.95	1,032.24
Urban, thousand people	356.8	359.7	361.2	387.0	359.3	--	364.80
Share (%) of total	*35.7*	*35.5*	*35.1*	37.0	34.3	--	35.52
Rural, thousand people	643.8	653.7	668.4	657.8	687.8	--	662.30
Share (%) of total	*64.3*	*64.5*	64.9	63.0	65.7	--	64.48
Economically active population:	773.3	786.0	810.0	804.5	806.4	810.929	798.52
Urban, thousand people	263.3	242.7	277.1	302.7	273.6	--	271.88
Share (%) of total	*34.0*	*30.9*	*34.2*	37.6	33.9	--	34.12
Rural, thousand people	510.0	469.1	532.9	501.8	532.8	--	509.32
Share (%) of total	*66.0*	*59.7*	*65.8*	62.4	66.1	--	64.00

Indicator	2017	2018	2019	2020	2021	2022*	Average
Economically inactive population:	227.3	227.4	219.6	240.3	240.7	247.022	233.72
Urban, thousand people	93.5	94.1	84.1	84.3	85.7	--	88.34
Share (%) of total	*41.1*	*41.4*	*38.3*	35.1	35.6	--	38.30
Rural, thousand people	133.8	133.3	135.5	156.0	155.0	--	142.72
Share (%) of total	*58.9*	*58.6*	*61.7*	64.9	64.4	--	61.70

(Source: Khorezm Province Department of Uzbek Statistics Agency, 2023)
*https://data.egov.uz/rus/data/61025aa22a2e256d868e82ef, Uzbek National Digital Government Management Centre

Most economically active people (64% on average in 2017-2022) lived in rural areas. Despite steady urban and rural growth, the average economically active population remained at the same level. Meanwhile, unemployment was high in 2020, with 88,100 unemployed people, and declined to 73,174 people in 2022. Perhaps these numbers are not accurate as during the household survey, many unemployed respondents said that they did not register at the province employment centre due to (i) costs and time for travel and registration process, (ii) the low level of salaries offered to unskilled labor, typical in rural areas of the province; and (iii) low amount of the unemployment allowance. As a result, the unemployed consider the effort required to register incompatible with the benefits they receive.

In eight regions of Uzbekistan, per capita income growth was below the national average, including in the Khorezm Province[88]. In the first half of 2022, the development of real incomes of Uzbekistan's population amounted to 10.8%, while in the Khorezm region, this indicator amounted to 9.6%[89]. The Uzbek Statistics Agency specified the total annual income per capita as of 2022 in the Khorezm Province as UZS 19,643,500 (approximately US$1,700 or about US$140 per month). The Khorezm Province residents' primary incomes are their wages and remittances from Russia.

Table 23: Total income structure for 2021 and 2022

Income	2022	2021
Labor income	58.90%	55.60%
Income from the production of services and income from property	8%	7.10%
Income as remittances	33.10%	37.30%

(Source: https://www.gazeta.uz/ru/2022/07/28/total-income/)

Distribution of total income for 2018-2022 by 10 decile groups of the population of the Khorezm Province is provided in the table below.

[88] https://www.uzdaily.uz/ru/post/75118
[89] https://www.gazeta.uz/ru/2022/07/28/total-income/

Table 24: Distribution of total incomes by decile groups

Period	I decile	II decile	III decile	IV decile	V decile	VI decile	VII decile	VIII decile	IX decile	X decile
2018	4.6	6.1	7.0	7.8	8.3	9.1	10.0	11.3	13.2	22.7
2019	3.7	5.7	6.7	7.6	8.6	9.7	10.9	12.5	14.3	20.2
2020	5.4	6.6	7.1	7.7	8.5	9.3	10.3	11.7	13.3	20.1
2021	4.3	5.9	6.8	7.6	8.9	9.6	10.5	12.0	14.5	19.9
2022	5.5	7.0	7.8	8.3	9.1	9.7	10.3	11.5	13.0	17.8

(Source: Uzbek Statistics Agency, 2023)

An overview of the average monthly salary received by Khorezm Province's residents is provided for the last five years. The average wage in UZS has risen by about 18.48% per year, mostly in line with inflation. At the same time, its highest growth was observed from 2018 to 2019 by 31.99% and from 2021 to 2022 by 23.23%. As of Quarter 1, 2023, the average salary growth was already 7.61%.

Table 25: Average monthly salary in 2019-2023

Indicator	2019	2020	2021	2022	Q1, 2023
Average monthly salary, UZS	1,962,705.25	2,186,248.49	2,584,346.52	3,184,609.80	3,427,038.23
Growth of the average monthly salary, %	31.97%	11.39%	18.21%	23.23%	7.61%

(Source: Khorezm Province Department of Uzbek Statistics Agency, 2023)

According to the Khorezm Province Department of Uzbek Statistics Agency, the population of Khorezm Province was mainly employed in the following economic activities: manufacturing, construction, trade, transportation and storage, hotel and catering, financial services and insurance, education, health and social care, art, entertainment, leisure, etc. The residents employed in transportation, banking and insurance sectors received the highest average salary. The lowest average wage remained during 2018-2023 in the hotel and catering businesses. The average wage in trade has not changed much since 2019 and the average wage in health and social care has increased slightly.

Table 26: Average salary size per economic activity in 2019-2022, UZS

Economic activity	2019	2020	2021	2022	Q1, 2023
Industry	2,718,629.57	2,667,560.96	3,112,293.38	3,715,817.93	3,945,767.02
Construction	1,937,171.81	2,485,279.53	2,975,713.60	3,061,716.30	3,306,768.04
Trade	2,181,883.46	2,196,055.71	2,339,257.80	2,329,760.36	2,806,680.64
Transportation	2,847,670.61	4,217,688.52	4,754,750.50	6,480,543.33	6,414,991.50
Hotel and catering	955,986.45	1,276,210.87	1,606,412.49	1,814,231.50	2,167,220.92
ICT	2,076,011.03	2,408,753.61	2,964,752.50	4,041,370.91	6,253,774.22

Economic activity	2019	2020	2021	2022	Q1, 2023
Financial and insurance	3,864,754.74	5,446,500.72	7,214,483.57	9,092,046.70	8,967,109.80
Education	1,729,573.48	1,822,631.66	2,142,420.84	2,528,562.07	2,764,917.31
Healthcare and social services	1,632,854.03	1,933,454.26	2,214,081.34	2,771,615.73	2,992,628.85
Art, entertainment, and leisure	1,372,688.91	1,545,768.09	1,961,960.62	2,376,800.55	2,468,098.45
Other	1,976,623.70	2,275,902.47	2,892,380.14	3,627,638.62	3,932,003.74

(Source: Khorezm Province Department of Uzbek Statistics Agency, 2023)

Pursuant to the Decree of the President of Uzbekistan[90], pensions and social benefits were increased by 7% starting from April 1, 2023, and provided the following minimum monthly social benefits:

- Minimum pension is UZS677,000[91] (US$59.21)
- Minimum disabilities pension or allowance is UZS747,000 (US$65.33)
- Social allowance for elderly citizens who do not have the necessary number of years for a regular pension is UZS535,000 (US$46.79)
- Social allowance for a child with disabilities (up to 18 years) is UZS535,000 (US$46.79)
- Social allowance for disabled adults is UZS535,000 (US$46.79), etc.

In addition, the wages of employees of budgetary organisations were also increased by 7% starting from May 1, 2023, with the minimum wage being UZS980,000 (US$85.71).

The Centre for Economic Research stated[92] in 2020 that 12-15% (or 4-5 million of the country's population) were in poverty, meaning that their daily income did not exceed UZS10,000-13,000 (US$0.95-1.24). At the end of 2022, the poverty rate in Uzbekistan decreased by almost 3% compared to the previous year and amounted to 14%[93].

Housing

Most of the housing in Khorezm Province consists of privately owned houses, which accounts for 91% in average of all places (Figure 17). Most of the residential housing in the province is of solid construction, made of brickwork, stone, or adobe with concrete columns. Typical private houses have a garden with vegetable plots and fruit trees. Some of the homes also have trellis vines for grapes. As in other Uzbekistan urban centres, the apartment buildings were mostly constructed in the 1970s-1980s and consist of prefabricated concrete panels, which are now in the general state of disrepair and need structural rehabilitation to extend their life. Those apartment buildings are all

[90] Decree of the President of Uzbekistan No. UP-45, 28.03.2023, On increasing wages, pensions and social benefits, https://lex.uz/ru/docs/6417184
[91] US$1 = UZS11,433.21, US$1 = UZS10476.92 on December 31, 2020 https://cbu.uz/en/
[92] https://www.cer.uz/en/post/publication/bednost-v-uzbekistane
[93] https://www.uzdaily.uz/ru/post/75118

Soviet-style and have little differences. Meanwhile, Urgench city is experiencing a new housing construction wave of apartment buildings of new style sharply.

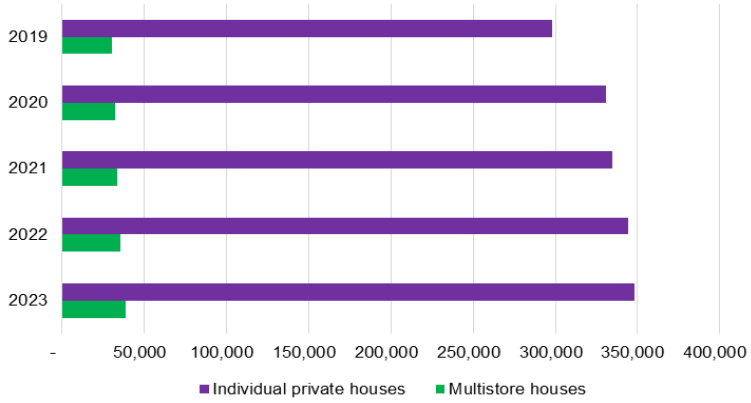


Figure 20: Numbers of individual private houses versus multistore houses
(Source: Uzbek Statistics Agency, 2023)

Sectors

Over the past five years, new enterprises, small businesses, and farms have been created in Khorezm Province. The region's gross product (GRP) for 2017-2020 increased by 17%; industrial production grew by 46% in 2020, and the number of operating enterprises increased by 25%. During 2016-2020, newly created jobs accounted for about 109,000 in the Khorezm region[94]. Agriculture and the associated food industry play an essential role in the Khorezm region's economy. According to the Khorezm Province Department of Uzbek Statistics Agency, 210 ha were under crops in 2020 and 265.9 ha in 2022[95], and the number of livestock and crop farms increased by 104.7%. Khanka and Gurlen districts are the province's leading agricultural producers. Products sold by these districts in 2022 amounted to UZS2,535 billion and UZS2,376 billion, respectively. Another province's economic activity is fishing, which increased production from 9,401 tons in 2017 to 29,565.5 tons in 2022, with Yangiarik (8,940.9 tons) and Khiva (5,539.4 tons) districts leading in this field.

Manufacture in Khorezm Province is represented by automobile plants (JSC Khorezm Auto), mining, textile, chemical, furniture, and other industries. The Khorezm Auto plant is the most significant industry in Tuprokkala District and has produced 40,000 Chevrolet Damas and Chevrolet Labo mini trucks since 2014. Other businesses include Urgench Excavator Plan JSC, Khiva Gilami JSC (carpet factory), and Khorazm Maveraplast LLC. As of Q1 2023, among 23,358 registered industries, only 80% were operating companies. The most significant number of new companies as of Q1 2023 was created in the Shavat region (226 new companies) and Urgench city (200 new companies).

[94] https://review.uz/post/infografika-socialno-ekonomicheskoe-razvitie-xorezmskoy-oblasti-za-pyat-let
[95] https://invest.gov.uz/ru/regional-map/horezmskaya-oblast/

Table 27: Small businesses

Period	Registered	Operating	Inactive	Newly created	Liquidated
2019	12,576	11,815	761	2,009	786
2020	16,282	15,453	829	4,668	983
2021	13,787	13,008	779	3,498	451
2022	23,324	21,984	1,340	4,914	1,751
2023	20,867	16,147	4,720	1,162	230

(Source: Khorezm Province Department of Uzbek Statistics Agency, 2023)

The types of businesses commonly operated in cities and districts of the Khorezm Province are summarised in the table, where cultivation, poultry, fishery, and livestock farming are the most common economic activities.

Table 28: Main businesses per urban centre

Urban centre	Main businesses
Bagat District	Farming, textile, greenhouse, gardening, vineyard, fruit and vegetable processing
Gurlen District	Textile, rice growing, greenhouse, farming
Khazarasp District	Textile, gardening, rice growing, trade, farming
Khiva District	Textile, gardening, fishing, poultry farming
Khanka District	Textile, furniture, food processing, rice growing, farming
Kushkupir District	Textile, horticulture, production of building materials, poultry farming
Shavat District	Textile, greenhouse, food industry, farming
Tuprokkala District	Mechanical engineering, textile, building materials
Urgench District	Building materials, food processing, textile, horticulture, farming
Yangiarik District	Textile, fishing, greenhouses, farming
Yangibazar District	Greenhouse, gardening, farming

(Source: Regulation of the Cabinet of Ministers of Uzbekistan No. 154 of April 04, 2022[96])

4.5.3. Education

Pre-school organisations, secondary and vocational schools, and higher educational institutions represent the educational sector in Khorezm Province. Statistics for 2018-2022 show an increase of 1.7 times in the number of kindergartens from 253 in 2017-2018 to 433 in 2021-2022, following a corresponding increase in population. Meanwhile, the average child-caretaker ratio remained at 1:11. Moreover, such an increase is not observed in the number of secondary schools. In particular, from 2017 to 2022, the number of secondary schools has increased by only 42, which is 8%. At the same time, the number of academic lyceums (specialised high schools) decreased from 5 in 2017 to 4 in 2022.

Table 29: Number and types of educational institutions in Khorezm province, 2017-2022

Educational Institution	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022
Pre-school educational organisations	253	323	360	402	433

[96] https://lex.uz/en/docs/-5939831

Educational Institution	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022
Secondary schools	525	526	556	561	567
Academic lyceums (specialised high schools)	5	5	5	5	4
Vocational schools	88	86	56	47	48
Universities	3	3	3	3	6

(Source: Khorezm Province Department of Uzbek Statistics Agency, 2023)

The higher educational institutions are presented only in Urgench city, although they have doubled from three in 2017-2018 to six universities in 2021-2022. As of 2022, 28,700 students were studying at universities of Khorezm Province, approximately 13.5% of young people aged 18-24.

4.5.4. Healthcare Facilities

The healthcare system of Khorezm Province is represented by 72 hospital facilities and 419 outpatient centres with the total of 21,700 medical personnel as of 2021, of which 5,300 were medical doctors and 16,400 were nurses. The most significant number of outpatient clinics (129) and hospitals (34) are in Urgench city. On average, each district has about 20 outpatient centres and three hospitals.

However, following Resolution of the President of Uzbekistan No. PP-2857[97], the number of rural medical centres in Khorezm Province decreased from 163 to 83 units. The local population must come to the nearest large community or district centre to receive primary health care.

4.5.5. Waterborne Diseases

Contaminated water and poor sanitation are linked to transmission of diseases such as cholera, diarrhoea, dysentery, hepatitis A, typhoid, and polio. As given below, the province has high number of incidences of waterborne diseases, mainly acute gastroenteritis affecting in average 1.6% of population. Meanwhile, hepatitis cases decreased from 1.72% in 2018 to 0.42% in 2021.

Table 30: Diseases statistics in Khorezm province

Diseases	2018	2019	2020	2021
Acute intestinal infections	31,800	39,000	18,900	31,600
Bacterial dysentery	1,400	1,500	300	700
Salmonella	900	1,100	400	500
Typhoid fever and paratyphoid A, B, C	9	2	1	-
Influenza and respiratory viruses	437,900	510,800	432,500	525,700
Hepatitis	31,000	27,300	11,500	7,900

[97] https://lex.uz/docs/3177802

Diseases	2018	2019	2020	2021
Scarlet fever	119	106	39	2
Whooping cough	22	11	4	-
Measles	6	149	7	7
Meningococcus	778	745	418	548
Brucellosis	119	106	39	2

(Source: Uzbek Statistics Agency, 2023)

Every year, an average of 102 people die in the Khorezm Province from infectious and parasitic diseases, 415 people from digestive system diseases, and 449 people die due to accidents, poisoning, and injuries. Despite a relatively small number of reported cases, the spread of infections arising from water supply and sanitation shortfalls is estimated to be significant, requiring substantive improvements in the water supply and sewage systems and a robust hygiene awareness campaign.

4.5.6. Findings of the Household Survey

The survey in Uzbekistan was carried out in May 2023 in person, i.e., in the form of a single face-to-face baseline interview. To ensure accuracy, the study enabled validation using cross-referencing, confirmation using geo-coordinates, and other techniques.

A cluster sample design was used to produce regionally representative data for the population in Khorezm Province. The survey encompassed 207 random households from the selected PSUs, as planned. However, during the study in the Gurlen district, the residents of the Nurobod community also asked for a household survey in their communities to attract the project stakeholders' attention to the existing water supply issues in their area. The survey team interviewed two more random households in the Nurobod community. The survey with a representative sample of 209 households accounted to 1,243 household members.

The overall response rate was 95%, with 207 adults, interviewees, participating in the survey. The data were weighed for the complex survey design, non-response rate and population distribution by age and sex.

Demographics

The population of the surveyed area comprised 68.14% of adults 18 years old and above and 31.86% of children up to 17. The gender profile showed a relatively equal share of women and men, corresponding to 50.1% and 49.8%. The mean numbers of males and females among age categories showed that the mean number of males and females in the working-age group was higher than that in the dependent group (younger than 18 years and older than 65 years). The children proportion, i.e., boys and girls, is 1:1.7, where the girls of 0-17 account for a higher share (62.88%) than boys (37.12%).

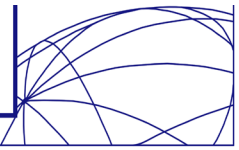


Table 31: Overall surveyed population

Gender	Adults (18+)		Children (0-17)		Total
men	425	50.1%	147	37.1%	572.00
women	422	49.8%	249	62.9%	671.00
Total:	847	68.1%	396	31.9%	1,243.00

Source: Survey outcomes

Concerning the gender of the household heads across the studied area, male household heads comprised a significant share of 85.7%, and females made up 14.4% (Table 42). Bagat district stands out with the relatively highest number of female heads of household, with a share of 20.8%, and the most significant number of male heads of household was noted in Khanka District, with a share of 92.6%.

Table 32: Household head's gender

District	Male		Female		Total
Bagat	19	79.2%	5	20.8%	24
Gurlen	20	87.0%	3	13.0%	23
Khazarasp	23	82.1%	5	17.9%	28
Khanka	25	92.6%	2	7.4%	27
Kushkupir	21	80.8%	5	19.2%	26
Shavat	21	91.3%	2	8.7%	23
Urgench	25	89.3%	3	10.7%	28
Yangiarik	14	82.4%	3	17.7%	17
Yangibazar	11	84.6%	2	15.4%	13
Total:	179	*85.7%*	30	*14.4%*	209

(Source: Survey outcomes)

A person's age affects the employment pattern, mobility, and quality of work done. No one respondent of the 16-25 age group was noted among the respondents. The largest share were respondents in the 56-65 age group. The smallest share comprised young people aged 26-35, with a share of 6.2%, and retired made up 18.18%. Overall, the mean age of the respondents was 45.5.

Table 33: Age distributions

District	16-25	26-35	36-45	46-55	56-65	66+
Bagat	-	3	4	7	6	4
Gurlen	-	0	9	8	5	1
Khazarasp	-	2	0	7	13	6
Khanka	-	0	8	8	8	3
Kushkupir	-	3	1	4	8	10
Shavat	-	0	9	7	3	4
Urgench	-	2	9	4	8	5

Yangiarik	-	2	2	4	6	3
Yangibazar	-	1	1	7	2	2
Total:	-	13 (6.2%)	43 (20.6%)	56 (26.8%)	59 (28.2%)	38 (18.2%)

(Source: Survey outcomes)

Heads of 93% of the interviewed households were married, 6.7% were widowed, and around 0.5% were divorced. Single heads of households were not encountered. Such a situation would align with the prevailing cultural and social settings based on traditional family values and the prevalence of households based on extended families comprising several generations of children.

Table 34: Marital status

District	Single	Married	Divorced	Widow
Bagat	-	22	-	2
Gurlen	-	22	-	1
Khazarasp	-	25	1	2
Khanka	-	25	-	2
Kushkupir	-	24	-	2
Shavat	-	21	-	2
Urgench	-	26	-	2
Yangiarik	-	17	-	0
Yangibazar	-	12	-	1
Total:	-	194	1	14

(Source: Survey outcomes)

Household Size

The average family consists of household members pooling their incomes together and eating from the same kitchen. The family members living outside the household or the community (or even outside the country) contribute to the family income in some form. The overall mean number of family members was 5.96, with the minimum family comprising two members and the maximum having 13 people. The median household consisted of a male head and his wife, two adults aged 18 and above, and two children up to 17 years old. The study also showed 22 disabled and 90 retired people as family members of 209 households. 43.75% of the retired were males, and 56.25% were females.

Table 35: Household structure per district

District	Mean number of females (18+)	Mean number of males (18+)	Mean number of children (0-3)	Mean number of children (0-17)	Average family size
Bagat	1.92	1.96	0.75	1.42	6.04
Gurlen	1.87	1.87	0.61	1.70	6.04
Khazarasp	2.04	2.04	1.04	1.00	6.11

District	Mean number of females (18+)	Mean number of males (18+)	Mean number of children (0-3)	Mean number of children (0-17)	Average family size
Khanka	1.70	2.07	0.42	1.11	5.31
Kushkupir	2.12	2.04	0.42	1.19	5.77
Shavat	2.17	1.91	0.48	0.96	5.52
Urgench	2.11	2.07	0.43	1.81	6.42
Yangiarik	2.29	2.53	0.82	1.29	6.94
Yangibazar	2.08	1.85	0.38	1.15	5.46
Average:	2.03	2.04	0.59	1.29	5.96

Source: Survey outcomes

Education

All of the surveyed adult population was literate. The secondary school enrolment rate for household members aged 7-14 was 100%, consistent across the districts. All settlements had at least one primary school and middle school in the vicinity, whereas vocational schools and high schools were mainly in the urban settlements. The study's findings showed no household members who have never attended school.

About 97.87% of respondents reported graduating from middle school, and more than one-third (38.37%) also completed vocational school. The level of vocational education in men was higher than in women. Men comprised more than one-fifth (21.13% of the surveyed population) of those who completed vocational schools, and women's share was twice less (11.22% of the surveyed population).

Only 11.22% had a higher education level, where 9.21% had a bachelor's and 2.01% had a degree. Women were more active in obtaining higher education; their share was 53.68%, while men comprised 46.32% of those with higher education.

Table 36: Educational level

Indicator	Literacy	Middle School	Vocational School	Bachelor Degree	Master Degree
Males	425	421	179	37	7
Females	422	408	146	41	10
Total:	847	829	325	78	17
Share:	*100%*	*97.9%*	*38.4%*	*9.2%*	*2.0%*

(Source: Survey outcomes)

Housing

Most respondents, 95.7%, lived in their own houses, while 4.3% lived in apartment buildings. This was more or less in line with the house ownership data reported in the water utility register. No respondent reported living in a rented house. Most single houses were one-story buildings with gates and windows overlooking the street and inside the garden. Roofs were covered with slate or painted iron and rarely galvanised iron. The

building walls were mostly made of adobe and some of brick and cement. Despite the same type of construction, the difference between the houses was substantial due to the building materials and decorations. Almost all households had a gas connection. However, respondents reported that they are more accustomed to having a "summer kitchen" and preparing food there. Such a summer kitchen included at least a fireplace for baking bread, two or three more fireplaces for food preparation, and water boiling for drinking and laundry.

Employment

About 40.9% of respondents reported having a job. Labor force participation was higher among males. About 63.2% of males aged 18 and above, or 31.5% of the total sample, reported being employed. The women were less economically active and those employed comprised 18.8% of females aged 18 and above or 9.93% of the total sample. The median employment rate was 40.9% of adults aged 18.

Table 37: Employment status

District	Employed Males		Employed Females		Total	
Bagat	32	68.1%	8	17.4%	40	43.0%
Gurlen	33	76.7%	10	23.3%	43	50.0%
Khazarasp	38	66.7%	7	12.3%	45	39.5%
Khanka	33	58.9%	11	23.9%	44	43.1%
Kushkupir	25	47.2%	5	9.1%	30	27.8%
Shavat	36	81.8%	12	24.0%	48	51.1%
Urgench	31	53.5%	15	25.4%	46	39.3%
Yangiarik	23	53.5%	6	15.4%	29	35.4%
Yangibazar	15	62.5%	5	18.5%	20	39.2%
Average:		63.2%		18.8%		

(Source: Survey outcomes)

Some 18% of the respondents reported being retired and receiving a state pension. Another significant share was migrant workers, who reported more than 12% but seemed much more extensive than reported. Most were said to have gone to work in Russia, and a minor part in Kazakhstan and Turkey. During the interview, people said they usually planned to leave for no more than six months. The income from Russia allowed them to have a relatively sustainable livelihood for six months more. However, not all household representatives disclosed that their men had gone to work in Russia, fearing unclear consequences. Despite the existing geopolitical situation, the majority of the working males from Khorezm Province still migrate to work in Russia.

Almost 1% of the population was reported as unemployed. Most respondents reported engaging in agriculture, working as a laborer, renting lands for farming rice, wheat, cotton, and vegetables, and selling agricultural products to agricultural firms and the market. Around 7% of respondents reported being hired as day laborers for weeding

and farm maintenance. Women and men were both involved in these types of farming activities. The respondents also said that almost 90% of farm owners do not hire long-term labor for work on the farm, so the residents were usually employed as seasonal workers. Meanwhile, a significant share of women remained unemployed due to social roots when women stayed home. However, these women also did not classify themselves as housewives.

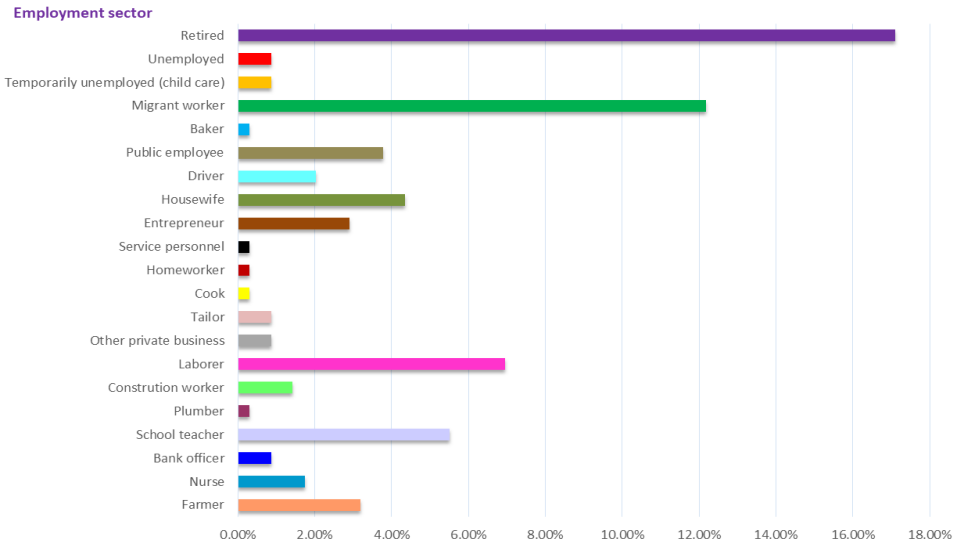


Figure 21: Employment Sector
(Source: Survey outcome)

Of those in waged employment, the private sector employs significantly more people (more than 24% of the surveyed population) than the public sector (11.88% of the surveyed population, primarily those working in education, health care, banking, and public institutions).

Household income

Household incomes in the area were relatively consistent with official statistics. The average monthly household income was recorded at between UZS1-5 mln. The main sources of income were wages from private businesses, public sector entities, day labor, and farming.

Table 38: Household income

Income	Respondents	Income share
Up to UZS1 mln.	41	24%
UZS1-5 mln.	112	65.5%
UZS5-10 mln.	15	8.8%
UZS10-15 mln.	2	1.2%
UZS15 mln. and above	1	0.6%
Total:	171	-

(Source: Survey outcomes)

For households with pensions and other social allowances, such payments constitute a stable and substantial source of income. 8% of males and 10% of females comprised pensioners receiving state pension that was a minimum of UZS500,000 and a maximum of UZS3,300,000. In addition, 2.25% reported receiving a disability allowance, and 1.13% received a childcare allowance from the state. The social allowances ranged from UZS332,000 as childcare allowance to UZS500,000÷1,300,000 as disability allowance.

Various other income sources, including sales of agricultural produce, intermittent non-agricultural earnings, and trade, played a minor role but were significant in specific households. Some female respondents also reported that their income depended on remittances from Russia, where their husbands and sons work. Some respondents could not estimate their monthly cash flows because remittances from abroad were unstable, and it was impossible to calculate monthly income. However, they knew their monthly expenditures were close to UZS2 mln.

About 10% of respondents disclosed they have additional side income from tailoring, farming, gardening, owning a shop, or crafting. Such side incomes brought them UZS500,000÷2,000,000 per month. Among those who owned livestock and poultry, 4.91% had livestock for self-consumption, 1.45% had livestock for breeding, and 3.78 farmed poultry for self-consumption.

Table 39: Additional income, livestock and poultry

Livestock and Poultry	Share in the total sample
Livestock for self-consumption	4.91%
Livestock for breeding	1.45%
Donkey	0.16%
Sheep	0.72%
Poultry (chicken, turkey, etc.)	3.78%

(Source: Survey outcomes)

Access to Water Supply

All of respondents reported having access to a safe drinking water source, where 54.5% were connected to tap water, and 39.2% purchased water from private water traders. The residents said that the private trader's water is better than the tap water: the water of private traders has the same colour, taste, and purity as bottled water, while the tap water needs sedimentation to separate solids from the water.

Table 40: Main sources of drinking water and food preparation

District	Tap Water	Private operator	Private well in individual houses	Private well of the water trader	Public tap with water meter	Bottled water
Bagat	37.5%	0.0%	33.3%	37.5%	0.0%	8.3%
Gurlen	52.2%	0.0%	43.5%	73.9%	17.4%	8.7%
Khazarasp	21.4%	0.0%	50.0%	71.4%	0.0%	32.1%

District	Tap Water	Private operator	Private well in individual houses	Private well of the water trader	Public tap with water meter	Bottled water
Khanka	70.4%	25.9%	7.4%	0.0%	0.0%	0.0%
Kushkupir	73.1%	0.0%	23.1%	34.6%	0.0%	15.4%
Shavat	60.9%	0.0%	34.8%	47.8%	0.0%	30.4%
Urgench	67.9%	0.0%	28.6%	35.7%	0.0%	21.4%
Yangiarik	70.6%	0.0%	47.1%	23.5%	0.0%	0.0%
Yangibazar	30.8%	0.0%	69.2%	15.4%	0.0%	7.7%
Total:	54.6%	3.4%	34.9%	39.2%	1.9%	14.8%

(Source: Survey outcomes)

Respondents also reported that they could directly purchase water at a private trader's office or order water delivery by phone anytime. Private traders use Damas and Labo mini trucks to provide water to the communities. Water is packed in 19-liter plastic transparent bottles, from which the required volume of water is pumped out to residents. People can order water in any quantity without restrictions on purchased water volume.

Figure 22: Vehicle of private trader with contact phone for water delivery, Gurlen District
(Source: Survey outcomes)

Due to the lack of water in the water supply system and the high water costs from private traders, some residents use groundwater as a primary source for drinking and food preparation.

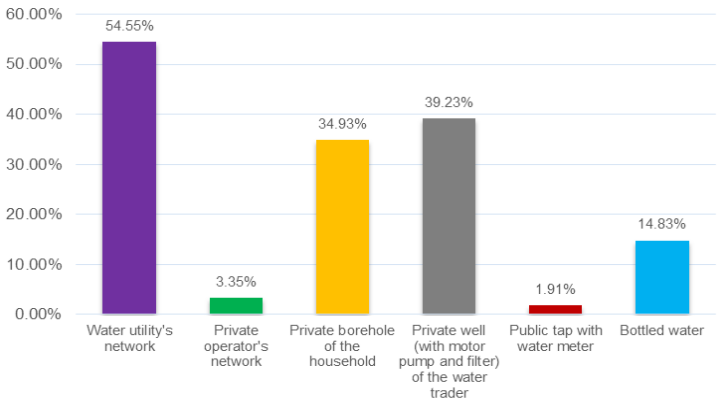


Figure 23: Main sources of drinking water and food preparation in households
(Source: Survey outcomes)

About 34.9% of residents said they used water from their boreholes in the yards. They also reported the water of the borehole is saline and requires sedimentation to remove suspended solids. Other respondents reported using bottled water (14.83%) for drinking and cooking. Some communities (1.91%) used public taps due to the lack of individual connection to the water network and private traders' lack of water delivery.

Significant differences were recorded in the access level to the public water supply system. Most of those connected to the water supply system were among the residents of Khanka and Shavat Districts, who accounted for 93.30% and 96.30%, respectively. The smallest number of the population connected to the water supply system was noted in Yangibazar and Khazarasp Districts, 30.77% and 46.43%, correspondingly. The sample's mean number of those connected to the water supply system was 71.84%.

Table 41: Access to water network

District	Connected to water network	Not connected to water network
Bagat	79.2%	20.8%
Gurlen	73.9%	26.1%
Khazarasp	46.4%	53.6%
Khanka	96.3%	3.7%
Kushkupir	80.8%	19.2%
Shavat	91.3%	8.7%
Urgench	71.4%	28.6%
Yangiarik	76.5%	23.5%
Yangibazar	30.8%	69.2%
Average:	71.84%	71.8%

(Source: Survey outcomes)

Respondents of some communities in Khazarasp District also reported that despite a connection to the tapped water, the main source of drinking water and cooking was

water delivered by a private trader. For other household needs, they used groundwater from their wells. Such a situation has developed due to the lack of water in the network. As mentioned above, the respondents considered the water of a private trader to be better than water in the network in terms of quality and taste and preferred to buy it despite the high tariff. Since they did not use piped water (due to its lack and poor quality), they did not consider themselves connected to the network. Therefore, more people were related to the water supply system than stated (54.5%).

Residents were asked to specify the water sources for their household needs. Data presented in the table reveals that, on average, 48.60% of respondents used groundwater for household needs, while 39.64% used drinking water supply systems for various household activities. 1.85% of respondents reported using irrigation channel water for garden irrigation, livestock and poultry, and house cleaning and laundry.

Table 42: Water sources for household needs

Household Activities	Tap water	Private well of the household	Channel water
Adults bathing	41.6%	47.9%	0.5%
Children bathing	41.6%	47.9%	0.5%
Laundry	41.2%	47.9%	1.0%
House cleaning	41.2%	47.9%	1.0%
Dishes washing	41.2%	48.3%	0.5%
Garden irrigation	36.4%	50.2%	4.8%
Water for livestock and poultry	34.5%	50.2%	4.8%
Average:	39.6%	48.6%	1.9%

(Source: Survey outcomes)

As reported by respondents, the household's average weekly water consumption for very basic needs was 355.31 litres (L) and included the following:

- 72.86 L of drinking water: Despite being required to calculate water used for drinking from all sources, most households figured only water purchased from the private water trader. Most of the rural population consumed only water from this source.
- 34.75 L for house cleaning: Respondents reported cleaning the house no more than once a week. However, they also mentioned that they sweep in front of the house and the backyard daily and water the area from the drainage channel.
- 191.67 L for garden irrigation: It is an approximate volume and seems to be underestimated as none of the respondents could calculate the particular volume used for garden irrigation. Gardening is additional income for the household and is hidden from the authorities to avoid taxation.
- 56.03 L for livestock: Households that reported having cattle, on average, one cow and one calf. When calculating cattle water consumption, residents mentioned that animals mainly drink water from irrigation canals during grazing,

while there is always one or two buckets of water in the barn. Therefore, livestock's weekly consumption of tap water is not so large.

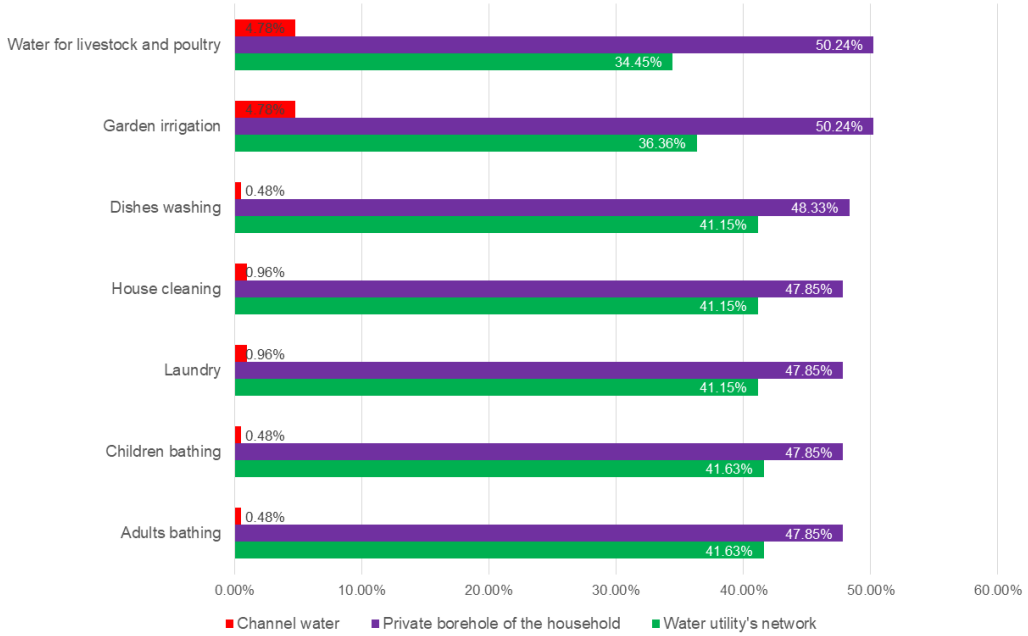


Figure 24: Water used for various household activities
(Source: Survey outcomes)

Since the population was experiencing water shortages, they were asked if they stored water and, if so, how they held water and what the accumulated water volume was. More than 65% stored water for household needs. The water storage containers included canisters, plastic basins, buckets, barrels, and other containers. Those connected to the water network were asked about the water pressure in a home. Of them, 35% reported poor water pressure, 25% were satisfactory, and 29% were good.

The residents also suggested that the low water pressure arises from old pipes logging minerals, corroded pipes, and cracks in the main supply pipe. Meanwhile, many who responded about good water pressure had boosting pumps installed in the system.

Table 43: Water storage by population

Storage facility	Population Share	Volume
Canisters	11.00%	20 L
Plastic basins	20.10%	60 L
Buckets	12.44%	10 L
Barrels	14.35%	50÷480 L
Plastic container	7.66%	20 L

(Source: Survey outcomes)

Perceptions of the water supply system operation differed significantly:

- 28.1% of respondents reported that water was supplied less than 4 hours per day

- 3.5 % said that water was supplied every second day
- 0.88% said that water was supplied once in three days
- Other respondents decided not to answer this question, as most had installed pumps, and some had connections to two different water mains.

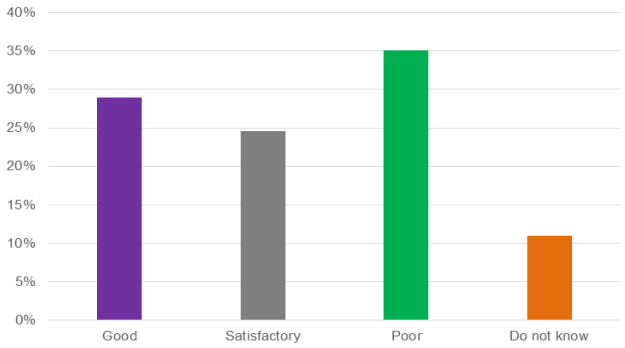


Figure 25: Pressure of tap water in private properties
(Source: Survey outcomes)

Respondents' assessment of the quality of tapped water and local wells revealed that

- 25.8% considered both water sources to be of good quality
- Almost the same residents share (24.9%) considered both water sources as satisfactory
- One-fourth of the surveyed population decided that both water sources had poor water quality, substantiating their assessment of it by saline taste and relative turbidity.

Salinity, turbidity, odour, and sediment were the main causes of poor water quality. Respondents speculated that the tapped water's poor quality was due to pipe cracks, allowing drinking water to mix with (a) naturally saline soils and groundwater seeping through pipe cracks and (b) part of domestic wastewater flowing into irrigation canals. Groundwater quality was characterised by salinity and sedimentation. Few households had filtration facilities, so the water usually required sedimentation after pumping. 51.2 % of respondents said they filter (11%), settle (22.5%) and boil (37%) water before use.

All respondents connected to the water supply had water meters. About 10% of customers doubted or did not know whether their meter was operational.

Access to Sewerage System

Almost all respondents (98%) of individual houses reported having separate pits for toilets and domestic wastewater. Given the high groundwater table, regular pits for domestic wastewater are 1 m deep and 1 m wide. Pits for domestic wastewater were often connected to collector irrigation canals by a discharge pipe.

Figure 26: Pits for domestic wastewater in the household yard
(Source: Survey outcomes)

Only 1.91 % of respondents reported having a connection to the sewage system. These respondents lived in apartment buildings. However, most respondents were not connected to the wastewater network. As said by the respondents, pit latrines are cleaned occasionally (every one to three years), where the contents are raked out and mixed with manure and then discharged to the agricultural fields and gardens as a fertilizer. Considering a high level of groundwater, pit latrines were built shallow, with the possibility of emptying them. Not all pit latrines were solid structures with cement foundations. Typical facilities were adobe. Respondents were asked about the cleanliness of their sanitation facility, and the answers were provided as follows:

- 40.7% of respondents considered their sanitation facilities satisfactory
- 32.5% of the survey population said they have clean sanitation facilities
- 23.9% of residents reported having very clean sanitation facilities
- 0.5% of respondents said they have dirty sanitation facilities.

Respondents were also asked how often they emptied the pit latrine, who had done this activity, and how much they paid. The results are divided into three groups:

- 49.3% reported they emptied the pit latrine themselves
- 6.2% answered that they bury the old one and dig a new pit latrine
- 13.9% said that they pay for empty pit latrines.

The tariff for pit latrine emptying was reported to be in the range of UZS 100,000 to UZS 400,000.

Affordability of Tariffs

The monthly water payments in the surveyed areas are summarised below. More than one-third of respondents paid monthly between UZS 20,000 and UZS 50,000 for water.

Table 44: Existing payments by population for drinking water

Payment for water	Population share
up to UZS20,000	25.8%

Payment for water	Population share
UZS20,000÷UZS50,000	36.8%
UZS50,000÷UZS80,000	22.5%
UZS80,000÷UZS100,000	1.9%
more than UZS100,000	2.9%

(Source: Survey outcomes)

Households were asked to consider increasing monthly consumption charges for improved water supply service. Service improvement was described as providing clean and safe water 24 hours a day, regular and fair billing based on metered use, prompt repairs, and efficient customer service. Based on this description, the survey sought consumer responses, either "yes" or "no," to different water tariffs for improved water services. Households without access to piped water were also asked to consider paying monthly consumption charges, with additional questions on one-time connection charges for piped water services. 11.96% refused to pay additional connection charges but agreed to pay the monthly bill per the established tariff for the province. Overall, the willingness to pay monthly bills for improved services was moderate among unconnected households when they had to pay connection charges. The respondents commented the local or Republican budgets could subsidise this one-time connection charge.

Table 45: Willingness to pay for improved water services (per cubic meter)

Water bill for improved service	Sample population
Up to UZS1,400	5.7%
UZS1,500÷UZS1,700	59.3%
UZS1,800÷UZS2,000	3.8%
UZS2,100÷UZS2,400	1.4%
UZS2,500÷UZS2,900	1.4%
UZS3,000 and more	0.5%

(Source: Survey outcomes)

Some observations related to willingness to pay for improved services and increased water tariffs are as follows:

- As the water tariff increased, connected and unconnected households ("yes" answers) decreased.
- Acceptance of the increased water tariff was higher among those currently connected to piped water than those unconnected.
- A water cost per litre from a private trader was UZS100-200. Considering that the average household purchased 72.86 L of water per month, the average household's monthly water consumption was between UZS 32,787 and UZS 49,180.

Based on the survey results, affordable monthly water fees were estimated between UZS 30,000 and UZS 49,000.

4.6. Gender Gaps and Challenges

Considering cultural and social roots, women in Uzbekistan are more at risk of poverty than men, particularly if women are divorced, widowed, unmarried, or have many children (more than two). The unemployment rate for women is almost two and half times higher than that of men, with women accounting for 65.4 percent of unemployed persons. Most unemployed women are unskilled women from rural areas trained for low-wage agricultural work. Other women concentrated in the predominantly female sectors, such as the health and education sectors of the government service and food and aesthetic industries (beauty and wellness centers) of the private sector. Women often face additional barriers when they attempt to take advantage of new opportunities to improve their standard of living: women lack many business skills to develop small businesses, and due to possible maternity, employers prefer to employ men, etc.

Overall, efforts to promote gender equality show slow progress in the Khorezm Province. While women potentially have access to secondary and higher education (despite all higher educational institutions concentrated in the province capital - the city of Urgench), their unemployment is more than three times higher (13.9%) than that of men (4.9%). The employment rate is also less (43.8%) than that of men (56.2%). Economically active females (377.3 thousand people) also made up 1.1 times less than males (438.2 thousand). Of 463,382 women, the women entrepreneurs registered with the State Tax Service comprised 11,220 people. Gaps related to decision-making, prospects for advancement, and access to and control over natural resources remain low in the province. Below are some gender-related indicators that provide an overview of the overall involvement of women and men in economic and social relations.

Table 46: Gender Indicators in the province and national context

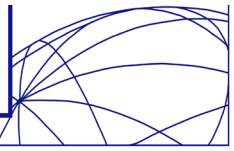
Indicator	Women	Men	Total
Unemployment rate (Uzbekistan), %	13.4	5.4	8.9
Unemployment rate (Khorezm Province), %	13.9	4.9	9.0
Unemployed (in Uzbekistan), thousand people	872.9 (65.4%)	459.8 (34.6%)	1,332.7
Unemployed (in Khorezm Province), thousand people	52.4	21.3	73.7
Residents in employment (in Uzbekistan), %	41.2	58.8	---
Residents in employment (in Khorezm Province), %	43.8	56.2	---
Economically active population (in Khorezm Province), thousand people	377.3	438.2	815.5
Employed in the economy (in Khorezm Province), thousand people	324.9	416.9	741.8
Employed in Industry (in Khorezm Province), %	41.3	58.7	---

Indicator	Women	Men	Total
Employed in Construction (in Khorezm Province), %	4.9	95.1	---
Women-entrepreneurs registered with the State Tax Service (in Khorezm Province), people	11,220	---	---
People with disabilities receiving pensions and social benefits (in Khorezm Province), thousand people	23.3	26.5	49.9
People receiving pensions and social benefits (in Khorezm Province), thousand people	129.1	87.2	232,7
Children participating preschool organizations (in Khorezm Province), thousand people	41.9	43.6	85.5
Underweight children (in Khorezm Province), %	1.1	1.0	1.
Number of abortions including mini abortions (in Khorezm Province)	1,317	---	---
Share of those who have committed crimes (in Khorezm Province), %	2.4	2.5	

(Source: Uzbek Statistics Agency, https://gender.stat.uz/ru/osnovnye-pokazateli/trud)

Analysis of vulnerable populations with gender perspective was conducted based on the community survey and key information interviews conducted by the study team during field visits. The following are some findings revealed during the analysis of 57,510 residents living in the selected 15 rural communities (*Tayanch, Toma, Turkiston, Fidoilar, Shirin, Shodlik, Ezgulik, Ekhtirom, Yangi Turmush, Yangilanish, Archazor, Beshmargan, Istikbol, Turkiston, Chigatoy*):

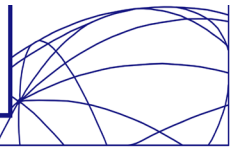
- 99% of residents live in individual houses with backyards
- three (3) of 15 communities have apartment buildings represented mainly through two- to four-store buildings
- 57,510 people comprising 14,119 families
- Women makes up 47.33% out of 57,510 people
- Retired residents made up 10.31% (5,928 people) where women comprised almost 48% of all retired and single senior adults made up 0.5% of all elder people
- 1.7% (233 families) of 14,119 families reported living without their primary income earner, whom they assume only male
- 2.3% (325 families) of 14,119 families were registered as low-income families
- Single parents made up 0.2% (33 families) of all families
- 3% (469 families) were reported to have four children, 2% (267 families) were registered to have five children, and only 0.2% (34 families) had more than five children
- 13% (1,823 families) were registered as social security recipients; these include social allowances for children, maternity leave, support for low-income families, childbirth allowance, etc.
- 2% of studied population were reported to have various disabilities; of them:
  - 99 residents have a disability of 1st category
  - 666 people have a disability of 2nd category, and



  - 99 people have a disability of 3d category; no information on women a share of people with disabilities
- 861 people with disabilities were registered to received GoU social security
- The women's committee is presented in all rural and urban populated settlements throughout the province; the average number of women's committees is ten female residents
- 32 females registered under "women in difficult circumstances" category; no clarifications of such situation were provided by women's committees; they said they keep consulting these women and provided required assistance
- Only three of 15 communities have a public library
- No communities have vocational training center
- Family outpatient is presented only in three of 15 communities and rural medical stations are only in two of 15 communities; no rural communities have pharmacies.
- Almost every community has dysfunctional families, alcohol abusers, and those who committed a crime, where 6.82% of them are women
- Almost every community has mentally ill people, a quarter of whom are women.

From a gender perspective, the population of the study area has some common characteristics deeply bonded by the social roots and existing economic situation in the region:

- Strong assumptions about men's role as key "breadwinners" and women as "mothers" and "housewives" remain across the province, even in the context of urban and rural areas where many women have at least seasonal jobs (e.g., farming, cleaning, packing, and loading of agricultural goods, and other day-labour activities) or act in other ways as primary subsistence providers. The local population considers only males as primary income earners. Even though women contribute through temporary or permanent earnings on an equal basis with men, women and other family members underestimate their financial input in the family budget. With the loss of a male breadwinner, the family continues to live on funds earned by other family members and mainly by the mother or wife of the breadwinner if the sons have not reached the age when they can support the family. However, even where women are engaged in paid work, they tend to be portrayed in the family primarily as homemakers.
- Existing male outmigration for jobs in Russia resulted in many households being headed up by senior or working-age women. Such male outmigration leaves women to assume primary income earner roles in many families as they do not receive regular remittances from their men. Despite this new role, women do not consider themselves the head of the household, leaving this position to men. Nevertheless, women are the ones who try to manage household expenses and find more sources of income.
- Without a regular income, women rely heavily on social security received for children, old age pensions, disability allowance, etc. Almost every family has a



senior woman or man who receives an old-age pension and young women who receive social security for their children.

- Despite homesteading, not all women effectively manage the crops: only a few women sell surplus crops to generate additional income. Mainly, men sell melons, fruits, and vegetables along the main roads of the district and province, while for residents, goods, including local fruits, vegetables, and bread, are sold in private stores. Despite strong cultural and social traditions in rural areas, people purchase food and other goods from stores. Markets similar to those in Tashkent (with a variety of agricultural products and sellers) are rare in the rural areas.
- Most women have only a secondary school education, allowing them to maintain daily routine activities, but this education does not always help them to survive financially. Most women have only a secondary school education, allowing them to maintain daily routine activities, but this education does not always help them to survive financially.
- Families in rural communities have limited awareness of the relevance of education and the broader, longer-term benefits for their children and families, especially for girls. Most of the secondary school graduates' women are less likely to participate in further adult education. Associated costs of higher or vocational schooling remain high for low-income families - most residents prefer to start working after school to contribute to the family income. In addition, social norms on gender relations remain a major challenge in expanding education and training opportunities for girls and women. Low parental education levels, particularly in rural areas, remain severe obstacles to ensuring children's education, especially for girls.
- There are very few vocational schools for women in the region to mainstream women into economic activities. Vocational educational institutions are mainly located in the city of Urgench and the Urgench district centre. Women tend to be employed in lower and low-skilled jobs and seldom in management positions – very few communities were headed by women. Women are mainly concentrated in a few sectors with less social and economic value – weavers, greenhouse workers, farmland workers, kindergarten staff, and nurses in rural medical centres; they rarely occupy the positions of cashiers and accountants; the number of female teachers and trainers also remains low. Due to cultural and social roots, female participation is weak in formal, long-term, high-skilled, and high-demand education programs.
- Mahalla committees keep logs of all residents, including those who were born, died, retired, divorced, married, handicapped, those in need of financial assistance, as well as those who are registered with the police, those who were in prison, those who use strong alcoholic drinks or drugs, those deported from other countries, and those involved in prostitution, etc. Due to strong cultural and social roots, people falling into the latter categories are rarely registered by makhalla committees. Moreover, the community registers have an article for women in difficult situations. Few such women are noted, but the reason or clarification for the "difficult situation" has not been disclosed by representatives

of the makhalla or women's committees; they said they keep consulting these women and provided required assistance.

- Women in the project province are the primary water collectors and users. During interviews, the local women mentioned to consider the water from the private trader to be better for the quality and taste. Still, water costs money, so the local population uses this water only for drinking and food preparation. Some families can afford to purchase water from private traders; others use tap water or water from their backyard well; however, this water must be settled for several hours and still taste brackish. Women also noted the relatively high cost of connection works to tap water systems and asked if the government could pay for this service during the new project. Such expenses are considered unplanned in their family budget and require additional income sources.
- Sanitation activities in the home are also divided by gender, with women and girls traditionally responsible for domestic sanitation chores, caring for children and older people, cleaning, and personal hygiene. The focus group discussions and key informant interviews revealed that people do not understand that having two sewage pits and a well of drinking water in one yard contradicts human health and safety principles. Residents believe the two- to three-meter distance between the pit latrine and the water well does not impact drinking water quality. Uzbek Public Health Standard No. 0146-04 requires setting up 10-20 m distance around the water well in the individual houses to ensure human health and safety.
- Following Resolution of the President of Uzbekistan No. PP-2857[98], the number of rural medical centers in Khorezm Province decreased from 163 to 83 units. The local population must come to the nearest large community or district center to receive primary health care. As highlighted above, several population groups, such as single parents, senior adults, people with disabilities, children, and women, stand out as highly vulnerable to unmet healthcare needs. These vulnerable people's difficulty accessing healthcare is primarily associated with transport costs. The cost of medicine is another reason why women and other vulnerable populations in financially unstable situations avoid health care services. Among senior-aged people, the leading reasons for unmet medical needs are affordability for detailed medical examinations such as ultrasound, CAT scans, blood work, etc. In such a situation, men are more likely than women to delay medical checkups in the hope that the health issue will resolve itself.

[98] https://lex.uz/docs/3177802

5. Environmental and Social Impact Assessment

The information on the ESIA methodology and a summary of positive and adverse E&S impacts during the construction and operation phases of the Project was derived from the ESIA report for the entire Project AoI undertaken as part of the Project feasibility study. More specific detail on the potential E&S impacts and risks associated with each of the subprojects proposed will be provided in relevant ESIA reports to be prepared for each of the subprojects.

5.1. Impact Assessment Methodology

Impact identification and assessment started with scoping and continued through the study and aimed to assess all direct and indirect impacts and risks in both the short-term and the long-term resulting from the project's preconstruction, construction, and operation phases. Early identification and characterization of environmental and social impacts allow to form a view about the ecological viability and social acceptability of proposed project activities and what conditions should apply to mitigate or minimize those risks and impacts.

The environmental and social impacts can be characterized as interactions of the project activities with various environmental and social components. The significance of the impacts will be determined in the following steps:

Step 1. Identification of Impacts
Step 2. Evaluation of Impact
Step 3. Management and Mitigation Measures
Step 4. Evaluation of Residual Impact.

The table below provides an overview of objectives under each step of the impact assessment process.

Table 47: Impact assessment methodology

Impact Assessment Stage	Objective
Step 1: Identification and Prediction of Impacts	▪ Ensure that all potentially significant impacts are identified and taken into account in the ESIA process ▪ Identify what could happen to the resources and receptors as a consequence of the planned activities ▪ Identify area of influence
Step 2: Evaluation of Impact	▪ Identify the magnitude of potential impacts, and provide the basis for the assessment of significance ▪ Evaluate the significance of the identified impacts by considering their magnitude, extent, duration, likelihood of occurrence, value, and importance of the affected resources

Impact Assessment Stage	Objective
	and receptors compared to with the situation without the project
Step 3: Management and Mitigation Measures	▪ Identify appropriate and justified measures to mitigate potential impacts
Step 4: Evaluation of Residual Impact	▪ Evaluate the significance of impacts assuming implementation of mitigation measures

5.1.1. Identification and Prediction of Impacts

Impact prediction is a way of mapping the environmental consequences of planned activities. Environmental and social impacts can never be predicted with absolute certainty. Therefore, considering all possible factors and precautions shall be taken to reduce uncertainty.

5.1.2. Evaluation of Impact

Once the identification of impacts is completed, each potential effect should be described in terms of its characteristics.

Table 48: Impacts characteristics

Characteristics	Description
Type	▪ Direct: impacts are potential effects from directly interacting the project components with resources and receptors. ▪ Indirect: impacts are potential impacts caused by the project components that are later in time or farther removed in distance but are still reasonably foreseeable. ▪ Cumulative: impacts result from the incremental effect of the project components when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other activities.
Extent	▪ Local: an impact locally occurring site-specific or limited to the project area (including around the project footprint in some kilometers) ▪ Regional: an impact that may extend beyond the project area ▪ National: an impact affecting resources on a national scale
Duration	The period over which a receptor or resource is potentially affected by the project activities: ▪ Short-term ▪ Medium-term ▪ Long-term ▪ Temporary
Scale	This characteristic specifies the size of the area around the project to be potentially impacted and the fraction of the resources that could be lost or affected due to the planned project activities.

Characteristics	Description
Frequency	This impact characteristic specifies a measure of its constancy or periodicity occurrence.
Likelihood	The likelihood of impact occurrence is specified using a qualitative scale where: ▪ Unlikely: impact occurrence characterizes the event that may unlikely occur at some time during normal operating conditions ▪ Likely: impact occurrence describes the event as essentially inevitable to occur during normal operating conditions ▪ Possible: impact occurrence characterizes the event that is likely to occur at some time during normal operating conditions.
Magnitude	Impact magnitude relates to the severity of the impact, whether the impact is irreversible or reversible, and the potential rate of recovery from the impact. For instance, the magnitude of the impact is considered high if a major adverse impact cannot be mitigated. A major adverse impact would affect the potential subsistence/recreational/commercial use of biophysical resources, with the result that the value of resources would be reduced far below the publicly acceptable level. Moderate to minor unmitigated impact of a similar nature will result in resources being still usable but at some inconvenience to the public. So, the impact designation would be characterized as: high, medium, low, and negligible.

Evaluating the significance of environmental and social impacts is one of the most critical components of impact assessment. The significance of the impact is determined by assigning sensitivity to receptors and resources, then defining magnitude of impacts, and finally, defining significance of impact.

The value and sensitivity of the receiving environment/receptor is rated according to the following scale:

Table 49: Impact sensitivity

Scale	Magnitude
High	Loss of resources, quality, and integrity over a significant area; severe change/damage to key characteristics, features, or elements for over three years.
Medium	Loss of resources, but not adversely affecting the integrity over a significant area; partial loss of/damage to key characteristics, features, or elements for over six months but less than three years.
Low	Some measurable change in attributes, quality, or vulnerability; minor loss of, or alteration to, one (maybe more) key characteristics, features, or elements.
Negligible	Little or no measurable change in attributes, quality, or vulnerability.

Once the value and sensitivity of the receptor and the magnitude of the impacts were assessed, the significance was assigned to each impact. The following matrix applied to all resources and receptors and impacts to them.

Table 50: Significance of impacts

Receptor Magnitude	Receptor Sensitivity		
Impact	Low	Medium	High
Negligible	Negligible	Negligible	Low
Low	Negligible	Low	Medium
Medium	Low	Medium	High
High	Medium	High	High

Generally, a significant aspect has or can have a considerable impact. So, the effects are likely to be significant if they:

- are extensive over space and time
- are intensive in concentration or proportion to assimilative capacity
- exceed environmental standards or thresholds
- do not comply with environmental policies, land use plans, sustainability strategy, etc.
- adversely and seriously affect ecologically sensitive areas
- adversely and seriously affect cultural and archaeological heritage resources, other land uses, communities and/or indigenous peoples, traditions, and values.

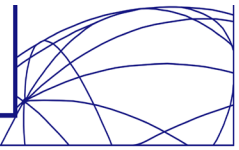
5.1.3. Management Measures

Once the significance of the impact has been characterized, the next stage would be to evaluate the mitigation and enhancement measures warranted. The mitigation hierarchy is used to limit the negative impacts and manage risks and comprises:

(1) Avoiding any impacts at source
(2) Minimizing or reducing impact to acceptable levels where avoidance is not possible; this includes impact abatement on site by improving the project design and impact abatement off-site by introducing specific control measures
(3) Rehabilitation measures shall be introduced to the unavoidably damaged resources and receptors
(4) Provision of compensation for losses, damages, and disturbance where technically and financially feasible.

Mitigation measures applied to the source of impact will be prioritized, where reduction, rehabilitation, and compensatory measures will address the resultant effect on the receptors and resources. This approach is consistent with AIIB ESP, specifying mitigation hierarchy as follows:

(a) anticipate and avoid risks and impacts
(b) where avoidance is not possible, minimize or reduce risks and impacts to acceptable levels
(c) once risks and impacts have been minimized or reduced, mitigate them and



(d) where residual risks or impacts remain, compensate for or offset them, where technically and financially feasible.

5.1.4. Evaluation of Residual Impact

Residual project effects will be those predicted to persist even when the prescribed mitigation measures are applied. These residual effects shall be characterized in terms of the following:

- direction of impact, that is, positive, adverse, or neutral
- magnitude of the impact
- geographic extent of the impact
- duration and frequency of the impact
- reversibility of the effect or the ability to recover to pre-disturbance conditions during or following project activities
- likelihood of occurrence based on the status of scientific or statistical information, experience, and/or professional judgment
- ecological and social context of the impact, i.e., the predicted environmental or social consequences of the impact.

Residual project impacts shall be evaluated as thoroughly as possible for each project phase based on the impact assessment described above. The measures addressing residual environmental and social risks and impacts will be developed following the mitigation hierarchy, emphasizing avoiding or minimizing impacts and, where possible, enhancing positive impacts using environmental planning and management.

5.1.5. Cumulative Impact Assessment

Cumulative impact assessment (CIA) will involve identification of other projects, activities, or disturbance features in the vicinity of the Project, which may have impacts that could combine with the residual project effects to increase the level of effect on the Project area. IFC specifies environmental or social receptors, affected resource, ecosystem, or human community as valued environmental and social components (VEC), which are assessed in six-step process following *IFC Good Practice Handbook on CIA: Six-Step Approach*[99]:

(1) Determine spatial and temporal boundaries
(2) Identify VEC in consultation with affected communities and stakeholders
(3) Determine present conditions of VECs
(4) Assess cumulative impacts and evaluate their significance over VECs' predicted future conditions

[99] https://www.ifc.org/content/dam/ifc/doc/mgrt/3-gph-steps-cardinale.pdf

(5) Design and implement (a) adequate strategies, plans, and procedures to manage cumulative impacts, (b) appropriate monitoring indicators, and (c) effective supervision mechanisms.

5.2. Summary of Assessed Impacts

The project is expected to generate benefits in improving the efficiency of water use and wastewater management and enhancing the environment, hygiene, and public health security in the Khorezm Region. The proposed project will bring significant benefits or positive impacts, including the following:

Economic Benefits. Due to its desert geographic location, water supply is a critical element in the economic development of the project area. Wastewater management will bring the province's population to living standards, ensuring good hygiene conditions. The effective functioning of the water supply and wastewater systems will lead to sustainable development and overall improvement of the population's livelihoods. The expected economic and social benefits are the following:

- cost savings from avoiding direct coping costs of inadequate water supply (purchase of electric/manual pumps for shallow wells, purchase of water from water vendors and bottled water, and costs of private water storage)
- savings from indirect coping costs, including time saved from handling water (time to boil, manually pump, and haul water)
- cost savings from cleaning sewage pits and pumping out the sludge
- health benefits (sick days avoided)
- increase in supply duration and availability (incremental water)
- cost savings from reduced technical losses and improved energy efficiency.

Employment Opportunities. During the project's construction activities, jobs and income opportunities will be created, and as such, per capita income will be enhanced in this area. For new water and wastewater infrastructure operations, a number of long-term skilled and unskilled personnel will be required for O&M work, which will also create employment opportunities for the local inhabitants, including jobs for women.

Migration will be increased due to new job opportunities in the project area. People in the neighbourhood are expected to benefit from the employment that would be generated and from the increased business activities during the construction period.

Enhanced Community Health and Safety. The new water infrastructure will ensure clean and safe drinking water for the project settlements and protect public health by controlling and eliminating waterborne diseases. Children are most vulnerable to unclean water and waterborne diseases, while women are responsible for water collection. The vulnerable population, including women, children, elderly residents, people with disabilities, and low-income families, will be the specific beneficiaries of this project due to a clean and safe water supply household connection.

At the same time, the proposed project activities may cause various negative environmental and social impacts. These impacts may include physical and economic displacement, especially regarding land acquisition for the new facilities, generation of waste, noise, dust, air pollution, wastewater, impacts on cultural heritage, disruption to the community and traffic, health risks, and safety concerns related to facility siting, civil works, and operation and maintenance. To assess the project's potential environmental and social impacts, the methodology described in Section 5.1 has been used. The key impacts are summarized in the table below, and potential impacts are discussed in subsequent sections.

Table 51: Summary of impacts during construction phase

Impact	Duration	Extent	Likelihood	Magnitude	Sensitivity	Significance
Impacts during planning phase						
Impact on community infrastructure and resources during the project siting	Short-term	Local	Likely	Medium	Low	Medium
Land acquisition and resettlement	Short-term	Local	Likely	Medium	Medium	Medium
Poor quality of engineering design	Short-term	Local	Likely	Medium	Medium	Medium
Incomplete and unclear bidding documents	Short-term	Local	Likely	Medium	Medium	Medium
Environmental impacts during construction phase						
Air pollution	Short-term	Local	Likely	High	Medium	Medium
Noise and vibration	Short-term	Local	Likely	Medium	Medium	Medium
Water resources pollution	Short-term	Local	Likely	Medium	Medium	Medium
Soil compact, erosion, and contamination	Short-term	Local	Likely	Medium	Medium	Medium
Biodiversity	Short-term and Long-term	Local	Likely	Medium	Medium	Medium
Social impacts during construction phase						
Livelihood	Short-term and Long-term	Local	Likely	High	Medium	High
Local economy	Long-term	Local	Likely	Medium	Medium	High

Impact	Duration	Extent	Likelihood	Magnitude	Sensitivity	Significance
Community health and safety	Long-term	Local	Likely	Medium	Medium	Medium
Labour influx	Short-term	Widespread	Likely	Medium	Medium	Medium
Restricted access	Short-term	Local	Likely	Medium	Medium	Medium
Traffic disturbance	Short-term	Local	Likely	High	High	High
Occupational health and safety	Long-term	Long-term	Long-term	Medium	High	High
Archaeological and cultural heritage	Short-term, Long-term, and Temporary	Local	Possible	Medium	High	High
Environmental impacts during operation phase						
Air pollution	Long-term	Widespread	Likely	High	Medium	Medium
Noise and vibration	Long-term	Local	Likely	Medium	Medium	Medium
Water resources	Long-term	Widespread	Likely	High	High	High
Soil pollution and contamination	Long-term	Local	Likely	Medium	Medium	Medium
Biodiversity	Long-term	Widespread	Likely	Medium	Medium	Medium
Social impacts during operation phase						
Local Economics and Livelihood	Long-term	Local	Likely	High	---	High positive effect
Community health and safety impacts associated	Long-term	Local	Likely	Medium	High	High
Occupational health and safety	Short-term	Local	Likely	Medium	High	High

5.3. Impacts during the Planning Phase

5.3.1. Impact on Community Infrastructure and Cultural Resources

During siting, the project components may impact or harm community facilities or sites with spiritual significance. This would have negative consequences for the residents and other local stakeholders. The design team will avoid siting the project components with undue impacts on the local communities. Any damages caused to the community facilities and religious sites will be reinstated at no cost to the community.

5.3.2. Land Acquisition and Resettlement

At this stage, not all the locations of the project components have been identified. The project sites will be determined later when the stakeholders approve the detailed construction methodology under each project component. In that case, the project may require the area that is currently occupied by either farmland, private or public businesses or be in the government reserve, or under other land classification.

Some plots for the new WDUs were selected jointly with district authorities (khokimiyats) from their land reserve. However, at the time of survey some lands were used by the residents living in nearby households. Therefore, the land ownership documents require verification and confirmation by relevant authorities during the planning phase. Some survey outcomes are provided in Appendix.

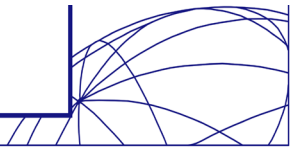
Impacts such as physical and economic displacement will be avoided to the extent possible by placing the project components on the government-owned land. If avoiding physical and economic displacement is impossible, the project will ensure agreement with landowners for land acquisition before construction work begins. The LARP, RP, or LRP will be prepared based on the Resettlement Planning Framework (RPF) and following AIIB's ESS2.

5.3.3. Poor Quality of Engineering Design

Inadequate design of distribution pipelines will lead to disproportional water supplies and losses, while the incorrect choice of pipe material will lead to a change in water quality and incompliance with the established standards. The new water mains and networks will be supposed to lay along the road infrastructure in the project area. Connection of WDUs, water mains, and networks may impact the existing utilities and infrastructure, such as roads and power transmission lines. To avoid unnecessary disruption of services during construction, the detailed design will specify routes for pipes laying in specific sites.

The wastewater treatment system can be broken down into distinct components (such as primary treatment, secondary treatment, tertiary treatment, effluent discharge, and sludge handling and disposal). If they fail to be appropriately designed, these components could negatively affect the environment, health, and safety. Improper engineering design can lead to various impacts associated with odours, sewage overflows, and effluent noncompliance with regulatory requirements. The detailed design will also agree on the scope of industrial wastewater to be treated by the project components, as the proposed technology is focused on treating organic matter rather than hazardous chemicals generated as a byproduct by industrial enterprises. So, the chemicals poured down the drain will end up in the irrigation canals, rivers, lakes, etc.

Another risk associated with project facilities siting is selecting sites with potential flood hazards. The Amudarya River has an increased exposure to floods, which may affect



critical utility infrastructures, including the project ones, and which can be responsible for soil, surface, and groundwater pollution (e.g., WWTPs are environmental hotspots). WWTPs and WDUs are technological systems subject to multiple failures in control systems, instruments, and electric power-fed machines in case of flood. For WWTPs, this may lead to treatment restrictions, which cause effluent discharge with high organic load, or the release of chemicals used in the plant. For the WDUs, this may lead to contamination of drinking water or blockage of the water supply to the population. During the engineering design, a flood risk assessment of the selected sites should be conducted to avoid potential flooding of the project components.

Moreover, overflows often occur during high rainfall or snowmelt periods and can result in facility backup overflows or discharges directly to rivers, lakes, and coastal waters. So, the detailed design should foresee the corresponding measures to prevent overflow and raw wastewater discharge to the surface water.

5.3.4. Incomplete and Unclear Bidding Documents

Lack of experience, low technical level of engineering and construction firms, and familiarity with local conditions could lead to numerous engineering mistakes and faults with the following adverse E&S impacts, including incomplete and unclear E&S safeguards of the project components, lack of requirements for the reinstatement of damaged utilities such as roads (including access roads), transmission/distribution lines (if any), and restoration of other facilities damaged due to the project, an operation and maintenance manual for all project components (i.e., WDUs, WWTPs), the provision of a site-specific environmental management plan by the contractor, etc.

5.4. Impact during the Construction Phase

5.4.1. Air Pollution

During construction phase, local ambient air quality may potentially be affected by increased dust, particularly during the site preparation stage (site clearance and earthworks etc.), material transportation, and by the exhaust gas of construction vehicles, equipment, and temporary power generators. The typical air emissions resulting from the following activities include nitrogen oxides, sulphur dioxides, carbon monoxide, carbon dioxide, volatile organic compounds, particulate matters, etc.:

Table 52: Potential impacts to air quality

Project Activities	Impact on Air Quality	Potential Consequences	Receptors
Demolition of structures	Dust emission	▪ Communities' annoyance due to the dust deposition on	▪ Community residents ▪ Public officials
Site preparation and land clearing	Dust emission		
Excavations, earth moving and earthworks	Dust emission		

Project Activities	Impact on Air Quality	Potential Consequences	Receptors
Mobile debris crushing	Dust emission and unpleasant odor	personal and public properties, crops, and ACHSs, ▪ Residents' dissatisfaction due to increased overall air quality changes resulting in difficulties in breathing ▪ Grievance related to reduced health due to dust and exhaust emissions	▪ Construction workers
Vehicle passing over unpaved ground or compacted roads and surfaces	Dust emission		
Transportation of uncovered bulk materials such as sand, cement, etc.	Particulate matter		
Vehicle and construction equipment emissions	Elevated gaseous pollutants from fuel combustion, including greenhouse gases, surfactants, gaseous toxins, PMs, etc.		
Working machinery, generators, and mechanical equipment such as hot mix and batching plant, diesel generator for power supply or other equipment	Particulate matter And exhaust emissions from machinery and heavy equipment		
Use and storage of construction materials including paints, varnishes, adhesives, sealants, wallpaper, foams, solvents, detergents, and aerosols	Volatile organic compounds and unpleasant odor		
Specific building activities such as concrete, mortar and plaster mixing, drilling, milling, cutting, grinding, sanding, welding, and sandblasting activities	Particulate matter		
Temporary wastewater facilities	Unpleasant odor		

The proposed mitigation measures will include: (i) dust prevention measures such as watering roads near the residential areas and watering dry, exposed surfaces, and stockpiles of aggregates; (ii) coverage of loose and fine materials (e.g., sand, and fine aggregates) when transported on trucks and stored piled at the site; (iii) use of vehicles, plants, and equipment meeting Euro-4 standard as required by Uzbek legislation[100]; (iv) storage of hazardous materials with potential gas emissions in sealed containers, (v) air quality monitoring in line with the monitoring plan, etc.

5.4.2. Noise and Vibration

Noise and vibration will be the critical environmental issues in this project. It is anticipated that noise from using powered mechanical equipment on sites and the

[100] Decree of the Cabinet of Ministers of Uzbekistan "About improvement of the environmental certification of vehicles and mobile equipment," https://mintrans.uz/ru/news/2022-yildan-ba-zi-toifadagi-transport-vositalarini-olib-kirish-sotish-va-ulardan-foydalanish-man-etiladi

haulage of construction materials during the construction will cause a nuisance to the nearby noise-sensitive receptors.

Table 53: Potential impacts to acoustic environment

Project Activities	Impact on Noise Level	Potential Consequences	Receptors
Demolition of structures	Short-term increase in noise levels only during the construction phase	▪ Residents' grievance on human health ▪ School principals' dissatisfaction due to reduction in the breadth of children attention: noise levels between 60 dB and 85 dB are considered loud in schools and can induce stress ▪ Communities' annoyance due to sleep disturbances	▪ Residents of adjacent communities ▪ Construction workers
Site preparation and land clearing			
Excavations, earth moving, and earthworks			
Working machinery, generators, and mechanical equipment such as concrete batching plant, diesel generator, or other equipment			
Transportation of equipment, materials, and workers to the project sites			

Depending on their specific roles and activities, site workers will also be exposed to varying noise levels. Without mitigation, noise impacts on the workforce could result in health impacts, for example, hearing damage. Although noise generated by general construction works will be during regular working hours (i.e., 07:00 to 19:00 hours on any day, not a Sunday or public holiday), noise levels should not exceed the national standards for noise or WHO Guidelines for Community Noise.

The proposed mitigation measures will include: (i) effective noise control measures, including scheduling noisy activities for the daytime, preparing work schedules, and informing adjacent communities; (ii) use of low-noise equipment and machinery; (iii) installation of an acoustic screen during noisy activities; (iv) speed limit of the project vehicles inside the populated areas; (v) provision of all project personnel with effective earmuffs and earplugs; (vi) conduct noise monitoring following the monitoring plan at the sensitive receptors' places.

5.4.3. Impact to Water Resources

The project activities causing the potential impacts to water resources and receptors are provided below.

Table 54: Potential impacts to water resources

Project Activities	Potential Impacts	Potential Consequences	Receptors
Land preparation and earthworks	▪ Increased turbidity due to suspended solid concentration in the nearby irrigation canals	▪ Communities' annoyance due to the water quality in canals used for irrigation	▪ Residents of adjacent communities ▪ Construction workers
Construction of foundations			

Project Activities	Potential Impacts	Potential Consequences	Receptors
Operation of construction equipment, such as concrete batching plant, mortar preparation system Water consumption for workers' domestic needs (washing, bathing, etc.) Construction and domestic wastewater management	▪ Increased contaminants including heavy metals, oil and grease in the nearby irrigation canals from the construction activities ▪ Discharge of construction and domestic wastewater ▪ Spread of waterborne disease through crops ▪ Worsening the sanitary and hygienic condition in the area	▪ Grievances related to reduced health of the residents from nearby communities due to consumption of contaminated crops irrigated from the canals used for the construction activities ▪ Spread of waterborne disease among residents and construction workers	▪ Downstream irrigation canals' water users in the project proximityty

Considering that surface waters in the project area are represented by irrigation and drainage canals, there is likely to be negligible or no water consumption from irrigation canals by the project at any time. The contractor will supply water for drinking and household needs to its workers on the trucks. At the same time, wastewater will be collected and disposed of by the contractor in an environmentally and socially friendly manner. Other mitigation measures will include: (i) organization of the fuel storage area in designated areas; (ii) isolation of warehouse floor to prevent the infiltration of liquid materials (oil, dyes, lubricants, etc.) into the soil and groundwater; (iii) effective wastewater collection and disposal at each project site; (iv) building a drainage system where rain run-off water will be collected and released into the environment by the terrain's inclination, etc.

5.4.4. Impact to Soil

The soil is of local importance for the communities' agricultural use. The site clearance, excavation, and digging of trenches will affect the top layers of soil. The removal of stabilized topsoil can cause erosion, slope destabilization, cave, and silt runoff. These effects may lead to the destruction of the integrity of soil layers and the unsettling of nearby road surfaces. Unorganized disposal of the excavated earth may disturb the surface and decrease the aesthetic and economic value of the area. Damaged soil is more readily eroded and washed into water courses during rainfall events and can also form dust during dry periods.

The project activities causing the potential impacts to soil and receptors are provided in the table below.

Table 55: Potential impacts to soil

Project Activities	Potential Impacts	Potential Consequences	Receptors
Land preparation and earthworks Construction of foundations	▪ Soil compaction ▪ Loss of topsoil ▪ Soil erosion ▪ Soil contamination	▪ Farmers' annoyance due to decrease in cultivation productivity ▪ Increase in surface runoff	▪ Soil ▪ Farmers ▪ Residents of adjacent communities

Project Activities	Potential Impacts	Potential Consequences	Receptors
Operation of construction equipment, such as concrete batching plant, mortar preparation system, etc.	with heavy metals, surfactants, etc.	▪ Loss of topsoil stabilizing vegetation ▪ Grievances related to reduced health of the residents from nearby communities due to consumption of contaminated crops	▪ Construction workers
Construction of access roads			
Littering			
Accidental leaks and spills of fuel, oil, and hazardous materials			

The proposed mitigation measures will include: (i) site clearance, excavation, filling, and construction works will comply with the applicable national standards; these activities will be limited to rainy days, sand/dust storms, and heavy winds to minimize erosion and run-off; (ii) strip and stockpile topsoil where practical; (iii) identifying suitable sites for the temporary storage of construction and domestic waste – placement of containers for domestic solid waste and hazardous waste at the project site and contractor camp; (iv) maintain all construction sites in a cleaner, tidy, and safe condition; (v) avoidance of soil compaction on unpaved roads; (v) repair vehicles and equipment at the designated places; (vi) storing hazardous materials in the warehouse with properly isolated floor, etc.

5.4.5. Impact to Biological Environment

Trees and shrubs cutting, haphazard site clearing, parking, and movement of construction vehicles and equipment stockpiling, resulting in disturbance to the biological environment. Impacts to the biological environment could be mitigated right from the site selection for the project components, ensuring that the detailed design effectively embeds impact avoidance and management measures. Having as possible as the smallest footprint area of the project components could contribute to minimizing the adverse effects on the ecosystem, including habitat loss, disturbance to fauna, spread of invasive plants, etc.

Most likely, the new WWTPs will be located outside villages and urban centers. The possible habitat of the Red List and any other flora and fauna species should be monitored during the site selection and preparation and before excavation or earthworks.

The project activities causing the potential impacts to soil and receptors are provided in the table below.

Table 56: Potential impacts to biological environment

Project Activities	Potential Impacts	Potential Consequences	Receptors
Footprint of short- and long-termed land acquisition	▪ Reduction in quality of habitats ▪ Interruptions or changes to fauna behaviors caused by noise, light, vibration, and visual disturbances ▪ Reduced or hindered fauna movements due to project components ▪ Spreading of invasive species	▪ Loss of habitats ▪ Fauna mortalities ▪ Changes in fauna roosting and foraging sites and migration patterns ▪ Exclusion of species from its habitats	▪ Biological environment
Land preparation and earthworks			
Discharge of waste, wastewater, and dust			
Noise, light, vibration, and visual disturbance during operation of construction equipment, such as concrete batching plant, mortar preparation system, diesel generator, mobile debris crushing etc.			
Use and storage of construction materials including paints, varnishes, adhesives, sealants, wallpaper, foams, solvents, detergents, and aerosols			
Specific building activities such as concrete, mortar and plaster mixing, drilling, milling, cutting, grinding, sanding, welding, and sandblasting activities			
Temporary wastewater facilities			
Accidental leaks and spills of fuel, oil, and hazardous materials			
Landscaping			

The proposed mitigation measures will include: (i) monitoring of flora and fauna before excavation, trenching, and other earthworks; (ii) avoid or minimize cutting trees while laying pipes and doing other works; (iii) If tree felling is unavoidable, the contractor will obtain a felling permit and pay the appropriate fee by applicable law and, based on the work results, will plant more trees at the felling site or nearby than were cut down; (iv) use of existing roads as much as possible; (v) use of less noisy equipment, vehicles, and machinery; (vi) coverage of the truck compartment while transporting construction material (such as sand, stones, cement, etc.) to avoid its spillage to the roads and adjacent area; (vii) avoidance of waterlogging and polluting the surrounding environment, etc.

5.4.6. Loss of Livelihoods

The land for the project components will include permanent and temporary land. The permanent land acquisition will be used to construct WDUs, pumping stations, production bases, and WWTPs. The temporary land will be used for water mains, networks, sewers, and other pipework and the construction of workers' camps, construction and production facilities, and access roads. The scope and method of land acquisition will be identified during the detailed design in coordination with local authorities, water utility, and Detailed Design Consultant.

The Project may require the area to be currently occupied by either farmland, private or public businesses, in the government reserve, or under other land classification. However, the project will try to avoid or minimise the use of agricultural or privately owned areas to prevent loss of livelihood by the local population. When it can't be avoided, the project will ensure agreement with landowners for land acquisition with proper compensation. The LARP, RP, or LRP will be prepared based on the resettlement scope following AIIB's ESS2 and include the following:

- The findings of conducted quantity inventory, quality assessment, and loss determination related to land, trees, crops, properties, structures, and needed support according to the applicable regulatory framework;
- Appraising land price and its coordination with competent authorities to carry out compensation, support allowances, and resettlement, if any, and the following coordination and agreement with land owners;
- Provision of compensation, support, and resettlement for public and private organisations, households, and farmers whose land is acquired;
- Settling grievance.

The finalisation of land acquisition for the project must be confirmed by the land acquisition audit, which is to be implemented by PMC and PCU with the presentation of the corresponding report.

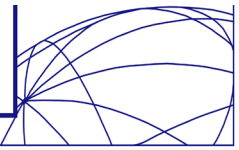
The potential impacts due to the land acquisition activities for the project are illustrated in the table below.

Table 57: Potential impacts on livelihood

Project Activities	Potential Impacts	Potential Consequences	Receptors
Land acquisition for project components	▪ Economic displacement ▪ Physical displacement ▪ Loss of livelihood ▪ Restriction on land use	▪ Loss of land ▪ Loss of income ▪ Loss business	▪ Community residents ▪ Landowners ▪ Public officials
Compensation for resettlement	▪ Social and cultural tension from dissatisfaction towards the compensation	▪ Landowners' grievances due to improper or unequal compensation ▪ Negative impact on project reputation	

Land acquisition impact nature is considered a negative impact as it will directly take away people's source of livelihood. The land acquisition process will result in either long-term or permanent economic loss. Most of the project land is under farmlands and residential areas, comprised of individual houses with backyards. According to the consultations with the water utility management:

- Under the water supply component, the sites for the WDUs will be allocated from the government reserve lands and water utility-owned plots, while the network will be installed along the government-owned district and village roads. However, the water mains will likely be laid on the outskirts of farmlands.



- Under the wastewater component, the WWTPs will be placed outside the residential and business areas; the site selection may not affect any farmland, while the network and sewers will be installed along the government-owned roads.

Other mitigation measures will include: (i) preparation of LARP, RP, or LRP based on RPF and following AIIB's ESS2; (ii) stakeholder engagement consultations during selection of land for project components; (iii) inventory of impacted landholdings and immovable/non-retrievable improvements (buildings and structures) to determine fair and reasonable levels of compensation or mitigation; (iv) census detailing affected people's composition, demography, and other relevant socioeconomic characteristics; (iv) defining livelihood restoration activities; (v) eligibility criteria and cut-off-date, etc.

5.4.7. Impact to Local Economy

The socio-economic baseline study revealed that remittances from Russia by household members and land-based income are a major livelihood source for the project area's population. Cultivation, poultry, fishery, and livestock farming are the most common work among the surveyed population.

If the project components are built on agricultural land or nearby, then a major concern will be soil erosion caused by the site clearing and construction of the project facilities. In spring, winter, and autumn, the water runoff with sediment would cause sediment accumulation and disturbance to the adjacent production land, and specifically soil stockpiling areas. Other risks will include soil and surface water (in irrigation canals) degradation due to dust accumulation from construction activities. In addition, during the construction, land will be temporarily used for laydown and equipment installation. Upon completion of project activities, these areas will be returned to the current land users. However, disrupted access to farming and other areas is expected for short intermittent periods.

The project will not affect the household's income from Russia, i.e., for money transfers by household members to Khorezm. On the other side, the project will undoubtedly generate more job and market opportunities in the province. The unskilled jobs generated by the project will be made available to the local population living around the project components. Moreover, specific positions will be first made available to women to earn extra money while taking care of families. The local population can sell agricultural and self-produced products to the contractor's staff, thereby receiving additional income. Also, the local people can provide services for repairing machinery and equipment for the contractor or deliver other paid services by making extra income. The potential impacts due to the land acquisition activities for the project are illustrated below.

Table 58: Potential impacts on local economy

Project Activities	Potential Impacts	Potential Consequences	Receptors
Land acquisition for project components	▪ Economic displacement ▪ Loss of livelihood ▪ Restriction on land use	▪ Loss of land, income, and business ▪ Restored livelihood ▪ Compensation for resettlement	▪ Community residents ▪ Land owners ▪ Public officials
Site clearance and preparation	▪ Soil and water degradation ▪ Dust emission ▪ Greenhouse gases emission	▪ Loss of crops ▪ Loss of forage for livestock and poultry	
Earthwork			
Transportation of construction materials			
Jobs for local population	▪ Income generation ▪ Improvement of business environment	▪ Improvement of living standards of local communities	
Business opportunities for private sector vendors			

The proposed mitigation measures will include: (i) avoidance or minimization of the disruption of the agricultural areas to prevent the local population from economic displacement and loss of income; (ii) provision of jobs for the local population, including non-hazard and unheavy work for women; (iii) business opportunities for private sector vendors; etc.

5.4.8. Impact to Community Health and Safety

General construction activities will include land clearance, site preparation, civil works, transportation of materials and workers, and installation of equipment, systems, and facilities, including the access road and, perhaps, transmission lines. These activities will likely generate noise, dust, and risk to the community's health and safety, including traffic safety, restricted access to properties, economic activities, social services, and service disruptions. Construction workers may potentially bring communicable diseases into the community. Without proper management of noise, waste, and dust from the construction activities, residents may experience a nuisance and annoyance. This includes residents living near the project sites and along the project vehicles' routes. Potential impacts and consequences of noise, vibration, dust, waste, and wastewater are discussed in the sections above.

The proposed mitigation measures will include: (i) lighting, temporary fences, shining barriers, and signage at active work sites; (ii) ensuring that alcohol and drugs are prohibited on the sites; (iii) prevention of excessive noise; (iv) introducing a code of conduct for workers, including restricting workers in designated areas, no littering, no fire, no trespassing, no residence at construction sites, and no obligation to do potentially dangerous work; (v) preparedness in emergency response, etc.

Labour Influx

The presence of non-local workers from other Uzbekistan provinces could be alien to the local community and may lead to behavioral traits, causing discomfort, inconvenience, disagreement, and social conflicts. The potential impacts may include the following:

- Communicable and severe respiratory disease-related risks.
- Increased risk of infections, including:
  - Water bone disease is associated with poor sanitation of construction sites and worker accommodation facilities.
  - Sexually transmitted infections and HIV/AIDS
  - Intestinal diseases due to poor standard of food hygiene in site catering facilities.
- Disturbance and tension between migrant workers and local communities.
- Pressure on public service and infrastructure.

The proposed mitigation measures will include: (i) introducing code of conduct on engaging with the local community; (ii) prohibition of sexual exploitation, abuse, and harassment; (iii) a ban on wildlife harvesting (hunting/trapping/fishing) and illegal entry into gardens, farmlands, backyards, and houses of residents; (iv) regular compulsory medical examinations (quarterly health check-ups) for all the project workers, etc.; (v) preparation of solid waste management plan; (vi) arrangement of daily workers transportation to and from sites; (vii) hiring local people; (viii) furnishing worker accommodation areas (good quality living accommodations, services, and amenities will likely reduce the interaction with local communities); (ix) regularly engaging with local authorities (khokimiyats, makhalla committees, and women's committees) for the prevention of social conflicts; (x) preparation of labor influx management plan by the contractor.

Restricted Access

Access to facilities, shops, businesses, and houses might be temporarily blocked during the pipework. If access is entirely blocked, it might cause a temporary loss of business. The open trenches would risk the community's safety if not well managed. However, this impact is temporary and likely will occur during pipework. Unauthorized access of people nearby, especially children or vulnerable people, to the project sites, is likely to increase the risks of injuries and fatalities in public safety. The project contractor(s) and construction supervision engineers will take necessary steps to ensure that local people and all workers are safe from activities on the construction site.

The proposed mitigation measures will include arrangement of bypasses for pedestrians and vehicles and inform the community of a new temporary route before the construction; fencing the construction site and install visible signs and lights in the open trenches; etc.

Traffic Disturbance

Some project components can temporarily disturb the traffic during construction activities and damage road bedding and pavement. An increase in transportation due to the project activities could lead to increased local traffic incidents and degradation of the public road infrastructure.

The proposed mitigation measures will include: (i) preparation of a traffic management plan by contractor(s) to minimize traffic congestion due to increased traffic movement due to the project; (ii) provision of a temporary bypass for vehicles and pedestrians and inform the community of a new temporary route before the construction; (iii) installation of temporary traffic lights, signs, and fences to ensure the residents' safety; (iv) roads damaged due to the project will be restored to their original condition by the contractor; (v) all construction and project vehicles will adhere to national requirements for speed limits, etc.

5.4.9. Impact to Occupational Health and Safety

Construction activities such as site preparation, excavation, concreting, operation of construction machinery and equipment, vehicular traffic, and temporary workers' accommodation pose potential risks to construction workers' health, safety, security, and well-being. Health and safety issues associated with using temporary accommodation sites include sanitation, disease, fire, cultural alienation, sleeping space, quality and quantity of food, personal safety and security, temperature control, and recreation.

The potential OHS impacts and risks of the project are illustrated below.

Table 59: Potential impacts on occupational health and safety

Project Activities	Potential Impacts	Potential Consequences	Receptors
Employment Employees accommodation Site clearance and preparation, excavation, foundation construction, scaffolding work, etc. Operation of construction machinery and equipment Operation of vehicles	▪ Exposure to noise, dust, particle matter, and greenhouse gases emission, etc. ▪ Injury and fatality risks due to unsafe working conditions ▪ Traffic accident ▪ Communicable diseases ▪ Unsanitary food and water consumption ▪ Unhygienic and unsanitary facilities ▪ Stagnant water created during the land clearance and causing disease vector habitat ▪ Unequal payment for men and women-employees ▪ Sexual harassment and abuse	▪ Occupational diseases ▪ Communicable diseases ▪ Digestive disease ▪ Disease vectors (e.g., mosquitoes) ▪ Hearing in court of law due to gender, alcohol, drug, and violence issues	▪ Contractors' personnel ▪ PCU ▪ PMC ▪ Suppliers ▪ Private vendors ▪ Individuals

Project Activities	Potential Impacts	Potential Consequences	Receptors
	▪ Failure to compliance with Code of Conduct		

Some of the occupational health and safety (OHS) risks which are likely to arise during the construction may include: (a) exposure to physical hazards from working on heights, use of heavy equipment, including cranes, trip and fall hazards, (b) exposure to dust, noise, and vibrations, (c) falling objects, (d) exposure to hazardous materials, and (e) exposure to electrical hazards from the use of tools and machinery.

The proposed mitigation measures will include: (i) the presence of full-time qualified and experienced OHS staff at the site; (ii) provision of adequate space and lighting, temporary fences, shining barriers, and signage at active work sites; (iii) prevention of excessive noise at the working places; (iv) equipment of the workers with personal protection equipment; (v) restricting workers in designated areas, and prohibition of littering, waste incineration, fire, trespassing, etc.

5.4.10. Impact to Archaeological and Cultural Heritage

The archaeology and cultural heritage range in scope and time in Khorezm Province, from ancient human settlements to major iconic monuments of the entire civilisation. Signs of ACHSs or objects of spiritual value or related to worship were found across the landscape during the field visits. Protecting the cultural heritage and archaeological sites is the shared responsibility of the citizens, GoU, and the project. A legal framework should be followed to preserve cultural heritage while constructing the project components. This can be achieved by the development of a Cultural Heritage Management Plan.

Under the water supply component, the project sites will likely be situated on previously disturbed lands; this is also relevant to placing the network and sewers under the wastewater component. These lands have considerable existing built-up infrastructure and structures along with the known ACHSs. However, the WWTP sites will likely be located outside populated areas where the ACHS may exist, given the area's history.

Table 60: Potential impacts on archaeological and cultural heritage

Project Activities	Potential Impacts	Potential Consequences	Receptors
Sites selection and land acquisition for project components	▪ Damage to undiscovered ▪ Destruction of existing ACHSs ▪ Damage to objects of spiritual value or related to worship or community gathering ▪ Disturbance to abandoned burials and cemeteries	▪ Loss of ACHS ▪ Loss of places that represent sacred meaning to the local communities ▪ Complaints of residents of local communities ▪ Grievance of public officials	▪ Local communities ▪ ACHSs
Site clearance and preparation, excavation, and another earthwork			

Removing vegetation, topsoil, site clearance, and earthworks can potentially lead to the exposure and possible damage or destruction of archaeological artifacts. Threats to ACHSs can be identified only by observing the patterns of destruction affecting the cultural heritage and archaeological sites; they include man-made and natural hazards.

Undiscovered cultural heritage, archaeological or paleontological objects, or features may be disturbed due to ground intervention activities associated with the project's construction. Objects of spiritual value or related to worship or community gathering may also be disturbed if they are present in the project area. The physical project interventions, specifically during network, water mains, or sewer construction, have the potential to result in disturbance or damage to the physical sites of cultural heritage and places that represent sacred meaning to the local communities, such as objects of living tangible heritage, including features of the natural landscape and man-made structures.

In addition, the field visits noted many registered and abandoned cemeteries, which may also be disturbed by the project activities. Mitigation through design controls includes a Chance Find Procedure, providing measures to follow if ACHS is identified, and develop and implement a Cultural Heritage Management Plan (CHMP) for the ACHS located in the vicinity of 150 m from the project components. CHMP will be prepared under the guidance of Project Coordination Unit and Project Management Consultant.

Impacts during the Operation Phase

5.4.11. Air Polution

No air quality will be impacted due to the operation of water mains, WDUs, networks, and customer connections. The water utility will take care of trees and bushes planted by the contractor to keep clean air in the area. However, WWTPs can generate a range of potentially harmful air pollutants, such as hydrogen sulfide, ammonia, and volatile organic compounds, greenhouse gases and other inorganic pollutants (heavy metals) which are causes to many reactions through atmosphere, then products detriment whole environment and living organisms including human. The WWTP, due to the processes carried out in them, is a source of offensive odors. Long-term human exposure to unpleasant odors can cause negative health impacts, from emotional to physical symptoms, including eye irritation, headache, respiratory problems, nausea, and vomiting.

To reduce odour nuisance during operation of WWTPs the following measures are recommended:

- Regular replacement of the screens.

- Regular pumping out the sludge from settling tanks.
- Open wastewater systems are more efficiently exhaust emissions than covered facilities.
- If the trees planted by the contractor are not enough to prevent the spread of odours from the WWTP, the water utility will have to additionally plant fragrant flowers that emit a pleasant aroma, such as *roses, basil, Rudbeckia fulgida, Cosmea Wild, Cosmus Pers, Aster*, etc.

5.4.12. Noise and Vibration

Some temporary noise may occur during O&M of WDUs and networks. However, this disturbance is indirect in nature, local in extent, and short-term in duration. In contrast, the operation of the WWTP is continuous, and the nature of the sound emitted by the equipment is stable. The dominant source of noise could be blowers, air distribution lines, sludge treatment facilities, etc. The proposed mitigation measures will include: (i) a manual for operation and maintenance of the project facilities; (ii) the water utility will take care of trees and bushes planted by the contractor to reduce noise levels. If the greenery planted by contractor around WWTPs is not enough to mitigate the noise generated by mechanical and electrical equipment, then the water utility shall plant more trees that are good for absorbing noise; (iii) ensuring compliance with national noise level quality standards; (iv) soft ground is an efficient noise absorber; (iv) cultivating ground before planting and adding well-rotted organic matter to the soil surface may also help reduce noise while vegetation becomes established; (v) introducing isolation of sources generating the noise by mineral wool, protective polyethylene film, and an external stainless-steel sheet

5.4.13. Impact to Water Resources

Operation of new water supply infrastructure may cause some direct and indirect negative impacts on the water availability due to excessive water withdrawal. These include excessive water withdrawal, discharge, and seepage of wastewater from the newly constructed sewage system in the project area. Excessive water withdrawal can negatively impact the sensitive ecosystem of the Amudarya River, irrigation canals, and local lakes. It may also have an impact on water users located downstream. The mitigation measures on the water withdrawal control were included in the EBRD project on rehabilitation of water treatment plants, while to avoid water losses in the networks and water mains, the water utility will implement a leak detection campaign.

With regard to WWTPs, wastewater effluent, if not properly treated, could significantly contribute to various water pollution problems, including adverse health risks for the users of surface water resources and the aquatic ecosystems. Each aquatic ecosystem has the natural tendency to adapt and compensate for changes in water quality parameters through dilution and biodegradation of some organic compounds. Water pollution sets in when this natural buffering capacity of the aquatic ecosystem is

exceeded due to the continued introduction of various contaminants. Lack of skilled personnel for the O&M of WWTP may contribute to the adverse impacts on the environment and community health within the Project area.

Using wastewater to irrigate crops or farmland is a sustainable and low-cost way to conserve water and reduce wastage. To avoid contaminating water resources and aquatic ecosystems in the project area, effluent quality monitoring and the water quality of receiving surface waters will be implemented. The effluent quality monitoring will include checking, evaluating, or investigating for specific effluent parameters to ensure the concentrations are within the allowable limits. The management measure will consist of the preparation, approval, and implementation of an effluent quality monitoring plan specifying vicinity map, plan layout, treatment technology, discharge points, number of discharging days, discharged volume, sampling points, and water body quality before and upon effluent released.

This will be supported by the laboratory equipment installed and corresponding training activities delivered by either contractor or supplier. The effluent will be discharge into the irrigation canals only upon confirming that the concentration of the mentioned parameters is within the allowable limits. The laboratory test reports will be coordinated with the Khorezm Province Public Health Service.

The proposed measures will include: (i) training O&M personnel on WDU, water main, and network operation; (ii) performing screening and monitoring the equipment, and further replacing defective ones; (iii) leak detection campaign; (iv) spill control; (v) drinking water quality monitoring; (vi) wastewater laboratory testing (vii) emergency preparedness, etc.

5.4.14. Impact to Soil

As part of water treatment, sludge generated in the reservoirs of WDUs is collected at the drying bed of the project facilities. In Uzbekistan, sludge from drinking water treatment plants is considered as non-hazardous waste. Still, sludge may contain colloidal iron and alum hydroxides (alum and iron are the most used coagulant in the drinking water treatment), colloidal or dissolved organic matter, clay, silt, residual chloride, and, perhaps, microorganisms. Even in minor concentrations these chemical and biological matters could negatively impact the soil properties. For instance, alum and iron hydroxides in the sludge favor the fixation of available phosphorus (PO4-3), thus making it less readily available to vegetation. Depending on the sludge composition, it could be used as fertilizer, material for landscaping, brick, cement, or ceramics production, or landfilled in provincial dumpsites.

As part of the wastewater treatment, generated sludge can be considered as an organic and nutrient resource, or material for mine reclamation or landscaping or waste to be disposed on the province landfills. The water utility will consider the following

applications depending on the sludge composition determined by practical laboratory tests: landfilling, incineration, and industrial or agricultural application.

5.4.15. Impact to Biological Environment

No biological environment will be impacted due to the operation of water mains, WDUs, networks, and customer connections.

With regard to operation of WWTPs, if not properly treated, effluent represents one of the most significant sources of pollution for receiving water bodies. Although wastewater treatment removes many contaminants, concentrations are still high enough to produce many negative impacts on the health of aquatic and terrestrial organisms if sewage water treatment fails the designed technology, including eutrophication, oxygen depletion, toxicity, floating debris, physical alterations. The proposed mitigation measures will include: (i) strictly adhering to the contractor's WWTP operation and maintenance manual; (ii) screening and monitoring the equipment and systems with further cleaning or replacing defective ones; (iii) developing and implementing regular leak detection campaigns across the WWTP; (iv) regular laboratory effluent testing in various treatment processes and just before discharge into the receiving water bodies; (vi) emergency preparedness, etc.

5.4.16. Impact to Local Economy and Livelihood

The project will create new jobs and opportunities for the local population. At least 172 jobs under water supply component and 137 jobs under wastewater component will be created upon completion of the project construction. The management measure will include development of the proper human resources management system by the water utility. The existing human resources system of the water utility will be strengthened and modernized within the Corporate Development Program envisioned by the project, including strengthening gender inclusion aspects of operations.

5.4.17. Impact to Community Health and Safety

Impacts during operation of project water supply components may include poorly operated and maintained WDUs and networks pass pathogens, failure to chlorinate allows pathogens to survive in distribution systems, poor-quality pipes and low pressure allow cross-contamination and result in unsafe drinking water, etc.

Operations of WWTPs, networks, and sewers may pose adverse community health and safety risks: air quality pollution due to (i) a decline in sludge handling system performance, (ii) reduction in mechanical and electrical equipment efficiency, (iii) greenhouse gases emission associated with nitrification/denitrification processes; spread of infectious disease because of personnel contact with sewage, deposits,

sludge, insects, rodents, etc.; pollution of receiving water body, i.e. irrigation canals, with the following pollution of crops and famers being in contact with polluted water.

The proposed mitigation measures include: (i) drinking water quality test on residual chlorine and all parameters required by the national standard; (ii) emergency preparedness plan; (iii) regular decontamination of WWTP premises; (iv) regular health check of employees to prevent spread of diseases; (v) regular laboratory effluent testing before discharge into the receiving water bodies; (vi) regular air quality monitoring, specifically for hydrogen sulfide; (vii) if the trees planted by the contractor are not enough to prevent the spread of odours from the facilities, the water utility will have to additionally plant fragrant flowers that emit a pleasant aroma; etc.

5.4.18. Impact to Occupational Health and Safety

No direct contact with hazardous chemicals (except for sodium hypochlorite and operators' interaction with chlorination facilities) is foreseen during the operation of water mains, WDUs, and networks. However, the water utility personnel will be working with mechanical and electrical equipment, and thereof, there are some breeding grounds for accidents and injuries that could fatally injure the workers. Operation of WDUs and networks will pose OHS risks for the maintenance staff. These risks may include exposure to dust, noise, and vibration, falling objects, and exposure to chlorine and other hazardous materials, exposure to electrical hazards from using electric tools and equipment.

Some basic hazards in WWTPs include slips, trips, and falls, polluted ambient air and aerosol by harmful gases and unpleasant odors.

The following management measures are recommended: (i) adhere to critical safety protocols to ensure a secure working environment; (ii) equipping all personnel with PPE; (iii) all equipment, and if any chemicals, should be labelled correctly and stored in designated areas; (iv) design of lockout/tagout procedures to prevent accidental or unauthorized operation of equipment that could cause injury or damage; (v) emergency preparedness (including fires, explosions, floods, power outages, equipment failures, or medical emergencies); (vi) regularly check employees' health and vaccination against illnesses (polio, hepatitis A, diphtheria, etc.); (vii) regular equipment inspections and maintenance checks.

6. Environmental and Social Management for Subprojects

This chapter outlines the proposed arrangements for managing the project's environmental and social risks and impacts. It also specifies procedures for screening, developing, and approving environmental and social instruments for the subprojects. This chapter discusses a generic Environmental and Social Management Plan (ESMP), a monitoring framework, a capacity-building program, and a Gender Action Plan (GAP) to guide the E&S work on the subproject level.

6.1. Institutional Arrangements

6.1.1. Executing Agency and Project Coordination Unit

JSC Uzsuvtaminot is the Project's Executing Agency. A Project Coordination Unit (PCU) has been established under JSC Uzsuvtaminot with responsibilities for the Project's overall management, implementation, and monitoring. PCU is a focal point for communication with the AIIB team on the project.

PCU is fully staffed and includes an E&S specialist. The main duty of the E&S specialist is to ensure that the project activities are implemented in compliance with the AIIB's ESP, applicable national regulations, and procedures, and in compliance with the ESIA/ESMP.

PCU is responsible for the project management and obtaining the relevant environmental permits, consents, and authorisations prior to commencing site work. PCU will facilitate coordination with other project stakeholders, including government agencies, local administration, project communities, consultants, and contractors. PCU will ensure the corresponding reporting and activities are made available for the project stakeholders.

PCU will be staffed with technical, E&S, procurement, and financial management specialists, where E&S specialists will have the following specific responsibilities:

(a) Leading all E&S activities at the national, Khorezm Province, and district levels.
(b) Managing the development of E&S instruments and documents for subprojects as defined in this ESMPF.
(c) Supervising the work of the Detailed Design Consultant on obtaining national environmental clearances for subprojects and coordinating with AIIB for approval of E&S documents.
(d) Ensuring the integration of environmental, social, health, and safety (ESHS) and labor requirements and code of conduct for workers in the bidding documents and contracts.

(e) Overseeing E&S activities the Project Management Consultant (PMC) performs.
(f) Ensuring timely development and provision of Site-specific ESMP (SSESMP) by the contractors.
(g) Establishing the GRMs for affected people and workers, respectively, as defined in this ESMPF, and ensuring GRMs are functional throughout the project's lifetime.
(h) Ensuring the implementation of E&S monitoring following the subproject ESMP and submitting the corresponding monitoring reports.
(i) Documentation of E&S-related issues and provision of inputs into the project progress reports and submitting semi-annual E&S monitoring reports to AIIB as required in this ESMPF.
(j) Identifying E&S training needs and organizing training for all parties involved in ESMPF/ESMP implementation.
(k) Ensuring the gender action plans preparation, implementation, and reporting under subprojects, and timely provision to AIIB of gender action plan implementation status in the semi-annual project progress reports.

PCU is a focal point for communication with the AIIB team on the project.

6.1.2. Project Implementation Unit

A Project Implementation Unit (PIU) will be set up in Khorezm city to manage day-to-day project implementation at the project and district levels. PIU will comprise one full-time Deputy Project Coordinator, and personnel with specialization in requisite disciplines such as water and sanitation engineering, procurement, financial management, and environmental and social management.

6.1.3. Implementing Agency

Khorezm Suvtaminot LLC (water utility) is the Implementing Agency for the Project. The water utility is responsible for undertaking approval of all studies, designs, and construction under the project. It is also responsible for the project's O&M after the commissioning of the infrastructure and facilities.

The water utility will have environmental, health, and safety engineers and social safeguard specialists in charge of ESMP implementation, ensuring compliance with the project design and following system operations in accordance with applicable national environmental requirements.

6.1.4. Project Management Consultant

The Project will employ PMC with responsibilities for assisting PCU in project management, overseeing the implementation of ESMP under each project components, and ensuring environmental and social safeguard compliance of the project activities. The PMC will be staffed with environmental and social specialists,

whereas environmental specialist will have solid engineering background and experience. The environmental and social specialists will perform environmental and social supervision, due diligence, and audit, site inspections, and guidance of the contractors. PMC will have the following responsibilities:

- PMC will verify the detailed design, bidding documents, and civil work contracts for inclusion among other provisions, of environmental and social safeguards, ESIA, ESMP, and LARP/LRP/RP, as required.
- PMC will provide training and clarifications to the DD Consultant on the preparation of ESIA, ESMP, and LARP/LRP/RP for the specific project component.
- PMC will provide training on SSESMP preparation and the overall implementation of ESMP to all contractors under the project.
- PMC will supervise and guide the contractors throughout their contract implementation, including supervision of ESMP implementation.
- PMC will regularly monitor the contractor's environmental performance, as scheduled in the ESMP.
- PMC will approve environmentally safe materials for use on-site in accordance with the ESIA.
- PMC will prepare semi-annual environmental and social monitoring reports to be approved by PCU.
- PMC will conduct a post-construction audit before project component will be commissioned to the water utility and will verify sites' compliance with ESMP.
- PMC will conduct consultations with the communities in the project area and other stakeholders on environmental and social issues and will keep the local communities informed on the progress, and adequately address their concerns, if any.
- PMC will lead the GRM and ensure the running of the GRM at the community level during the project activities.
- PMC's reporting will be based on its environmental and social audits, site inspections, due diligence, and analysis of the contractor's monthly reports. The PMC will report to PCU monthly, quarterly, and semi-annual. The Final Environmental and Social Monitoring Report will be submitted upon post-construction audit to demonstrate that the project is appropriately completed.

6.1.5. Detailed Design Consultant

The Project will employ a Detailed Design Consultant with the responsibilities to prepare detailed design under all project components with specific environmental and social management instruments, such as ESIA, ESMP, and LARP/LRP/RP.

Detailed Design Consultant will be staffed with E&S specialists, whereas environmental specialist will have solid engineering background and experience.

Detailed Design Consultant along with the design of the project components will prepare the national environmental and social documents under each project

components following the requirement of the applicable standard and submit these reports for the expertise and clearance by the environmental regulator.

6.1.6. Contractor(s)

Contractor will be employed by the project for the construction of project components. Contractor will assign full-time and qualified environmental, social, and occupational health and safety engineers/specialists.

The contractor will be responsible for the development of the following deliverables:

- Construction execution plan to be progressively updated through the construction life and comprising the following information:
  - construction schedule with milestones, tasks, and key dates
  - key personnel and their tasks assigned
  - description of the main and supporting activities
  - other information as will be required by the water utility.

- Site-Specific Environmental and Social Management Plan (SSESMP) incorporating:
  - earthworks and topsoil management plan
  - traffic management plan
  - petroleum products management plan
  - solid waste management plan
  - hazardous waste management plan
  - landscaping management plan
  - construction camp management plan
  - occupational health and safety management plan
  - emergency response plan
  - contingency and spoil management plan
  - social impacts mitigation plan
  - labor management plan including recruitment plan (jobs for women and unskilled residents).
  - labor influx management plan.

Contractor will be responsible for the preparation of SSESMP within 30 days upon signing the contract and prior to commencing any physical works. Contractor will implement environmentally and socially friendly construction and the corresponding management and mitigation measures.

The contractor's E&S reporting will be monthly and will incorporate the scope of work for the reporting period, implemented mitigation measures, performed tests, delivered training activities, received, and addressed complaints, accidents, etc. Contractor will submit its report to the PMC before the report submission to the PCU.

6.2. Methodology and Procedures under E&S Safeguards Activities

This section provides guidance on the procedures to implement the ESMPF to ensure the PCU is addressing the E&S impacts and risks associated with each of the subprojects in line with the AIIB ESF and relevant GIIP, namely IFC PS and associated EHS Guidelines.

6.2.1. Screening, Categorisation, and Identification of E&S Instruments

At this stage, the specific sites and activities of the subprojects are not yet detailed. Therefore, it is crucial to have the right tools to screen these activities for potential impacts and choose appropriate E&S instruments to address them effectively.

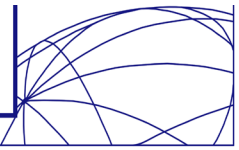
The first step will involve checking if the subproject activities are part of the AIIB's Environmental and Social Exclusion List[101]. If they are not on the list, the subproject will be categorized based on certain criteria, and the appropriate instruments will be chosen to meet national and AIIB requirements. However, it's worth noting that the AIIB and national regulatory frameworks have different criteria for categorizing subprojects and choosing E&S instruments.

The table below provides a summary of the initial categorization and identification of E&S instruments.

Table 61: Preliminary Categorisation and E&S Instruments of the Subprojects

Subproject		Category & E&S Instruments				
		AIIB ESF			National Regulation[102]	
		Category	Risk	E&S Instrument	Category	E&S Instrument
Component 1: Water Supply Infrastructure	Construction and rehabilitation of water distribution units, water mains, networks, connections, and associated facilities	B	Moderate	Brief ESIA/ESMP and RP (if applicable)	II	▪ EIA ▪ Public Consultation Record ▪ Environmental Impact Statement
					III	▪ EIA ▪ Public Consultation Record (if applicable)
Component 2: Wastewater Infrastructure	Construction of wastewater treatment plants	A	High	ESIA and RP (if applicable)	II	▪ EIA ▪ Public Consultation Record

[101] https://www.aiib.org/en/policies-strategies/_download/environment-framework/AIIB-Environmental-and-Social-Framework_ESF-November-2022-final.pdf
[102] Regulation No.541, https://lex.uz/docs/4984499



Subproject		Category & E&S Instruments				
		AIIB ESF			National Regulation[102]	
		Category	Risk	E&S Instrument	Category	E&S Instrument
						▪ Environmental Impact Statement
					III	▪ EIA ▪ Public Consultation Record (if applicable)
	Construction and rehabilitation of pumping stations, sewers, networks, and associated facilities	B	Moderate	Brief ESIA/ESMP and RP (if applicable)	II	▪ EIA ▪ Public Consultation Record ▪ Environmental Impact Statement
					III	▪ EIA ▪ Public Consultation Record (if applicable)
Components 1 and 2	Facilities to be located at environmentally sensitive sites or to have impacts on cultural heritage	A	High	ESIA and RP (if applicable)	I-II	▪ EIA ▪ Public Consultation Record ▪ Environmental Impact Statement

For Category A subprojects with significant environmental and social impacts or in sensitive areas, an ESIA with ESMP will be prepared to meet the requirements of AIIB's ESP. Such subprojects would be classified as Categories I or II following applicable Uzbekistan regulation. In this case, the EIA report along with the public consultation minutes following by the Environmental Impact Statement will be required for national environmental clearance.

For Category B subprojects having a limited number of potentially adverse environmental and social impacts, which can be successfully managed using good practice in an operational setting, the ESIA with ESMP will be prepared following AIIB's ESP. The ESIA scope may vary from subproject to subproject, but the study will be narrower than that of Category A. These subprojects would be classified as Categories II or III applicable Uzbekistan regulation and will require elaboration of EIA report with the public consultation minutes, depending on the subproject scope, for national environmental clearance.

6.2.2. National EIA Clearance Procedure

National EIA is regulated by the Regulation 541, where project categorization is based on the nature and scale of the proposed activities and the significance of the potential environmental impacts. Projects are screened for their expected environmental impacts and assigned to one of the four categories (I-IV).

The projects of Categories I and II are examined by State Center of Environmental Expertise, while the projects of Categories III and IV are subject for evaluation by the territorial departments of the State Center of Environmental Expertise.

The national EIA clearance procedure is following:

(1) EIA Preparation

The EIA prepared under the Categories I-III will contain the following information:

(a) General information of the project owners and beneficiaries and EIA team.
(b) Environmental and social baseline.
(c) Project location, its rational, and alternatives.
(d) Public consultation record with concerns, comments, and proposals of the stakeholders.
(e) Scoping.
(f) Map with geographic positioning of the project components and adjacent populated settlements, irrigated areas and farmlands, infrastructure, etc.
(g) Description of machinery and equipment to be used in the project.
(h) Description of the project's main components and their annual capacity.
(i) Predicted potential impacts, such as emissions, noise, waste, and other negative impacts and their assessment.
(j) Review of the proposed technology and alternatives.
(k) Organizational arrangements and management measures intended to mitigate adverse effects of the project.
(l) Emergency analysis and preparedness measures.
(m) Predicted consequences and residual effects upon implementation of the management and mitigation measures.

The EIA in the content specified above will be submitted to the regulator's evaluation through online system, www.eco-service.uz. Submitted project documents are evaluated as following:

- Projects of Categories I are evaluated up to 20 calendar days.
- Projects of Categories II are evaluated up to 15 calendar days.
- Projects of Categories III are evaluated up to 10 calendar days.
- Projects of Categories IV are evaluated up to 5 calendar days.

The projects under Category IV will complete environmental checklist provided by the environmental regulator through its e-system.

(2) Preparation of Environmental Impact Statement

Once the EIA clearance is obtained, an Environmental Impact Statement will be prepared. The Environmental Impact Statement will include details of surveys conducted, such as laboratory tests and physical measurements, and a scientifically feasible environmental management plan. This supplemented information will be submitted for regulator's review before the start of the construction. So, the project will proceed only upon receiving clearance for Environmental Impact Statement.

In general, the Environmental Impact Statement will be primarily required for the projects classified under the Categories I and II.

(3) Preparation of Statement on Environmental Consequences

This document is the final stage of the project's environmental clearance procedure. It will be prepared after the completion of the project but before it is commissioned to the beneficiary. The document will contain detailed information on the constructed facilities, their capacity, and calculated resource consumption. It will also cover the project's impact on the environment, such as emissions, noise, waste, etc., and explain how the project facilities will change the area and provide information on the applicable environmental standards and other engineering and operating documents related to the project.

The approval of the EIA by the environmental regulator is valid for three years. If required, it can be extended for an additional two years. However, in case of any changes to the project design, the project owner must provide the revised project documents along with the EIA report for the regulator's evaluation. Moreover, if the project's physical works do not commence within the approved period, the regulator reserves the right to either request the applicant to renew the project documents or extend the approval based on the nature of the design changes and the provided information.

6.2.3. Subproject ESIA per AIIB ESP

Category A Projects. As shown in Table 4 above, the subprojects were classified as Category III (low environmental impact) under the applicable national EIA regulations. Category III projects require the preparation of an EIA. The regulatory EIA reports for the nine regional projects have been prepared by Uzsuvtaminot in December 2023 and January 2024 and submitted for regulatory approval.

It is of note that the spatial scope of the regulatory EIAs was limited by the administrative boundaries of each of the Project districts and therefore the specific E&S impacts that

would arise from the relevant subprojects were not assessed in detail by the regulatory EIAs, as recommended by the applicable lender standards. Some subprojects, particularly those requiring a new land-take may have significant adverse E&S impacts that are irreversible, cumulative, diverse and/or unprecedented. Those impacts may have not been captured by the regulatory EIA process, and thus those subprojects could be classified as Category A projects under the AIIB ESF and require a full-scale ESIA.

This is specifically the case where the subprojects require the construction of auxiliary infrastructure such as transmission lines and access roads. Those facilities fall under the definition of associated facilities "*which are facilities that are not funded as part of the project and that would not have been constructed or expanded if the project did not exist and without which the project would not be viable*" (IFC, 2012). It is normal practice in many jurisdictions worldwide to exclude this type of project infrastructure from the scope of regulatory EIAs.

For Category A subprojects the following approach will be applied to undertake the ESIA: (i) initial screening of the subproject and scoping of the assessment process; (ii) examination of alternatives; (iii) stakeholder identification (focusing on those directly affected); (iv) gathering of environmental and social baseline data; (v) impact identification, prediction, and analysis; (vi) elaboration of mitigation or management measures and actions; (vii) preparation of ESMP by composing the proposed mitigation and management measures into a single source, defining grievance redress mechanism (GRM), monitoring requirements to ensure efficacy of the proposed mitigation measures and roles and responsibilities for ESMP implementation and monitoring; (viii) stakeholder engagement and disclosure of ESIA with ESMP and GRM and (viii) documentation of the assessment process and collaborate with design engineers with the following integration of the E&S considerations into the detailed design of subproject.

Most importantly, E&S impacts and risks should be identified and assessed in the context of the Project AoI, which is essentially the entire project footprint. AIIB defines the AoI as follows (AIIB ESF): "*Project area of influence includes the area likely to be affected by the Project, including all its ancillary aspects, such as power transmission corridors, pipelines, canals, tunnels, relocation and access roads, borrow and disposal areas, and construction camps, as well as unplanned developments induced by the Project (e.g., spontaneous settlement, logging or shifting agriculture along access roads). The area of influence may include, for example, (a) the watershed within which the Project is located; (b) any affected estuary and coastal zone; (c) off-site areas required for resettlement or compensatory tracts; (d) the airshed (e.g., where airborne pollution such as smoke or dust may enter or leave the area of influence; (e) migratory routes of humans, wildlife or fish, particularly where they relate to public health, economic activities, or environmental conservation; and (f) areas used for livelihood activities (hunting, fishing, grazing, gathering, agriculture, etc.) or religious or ceremonial purposes of a customary nature.*"

Consequently, subprojects ESIAs should:

- Identify and assess the potential E&S impacts and risks for the entire project footprint, taking into consideration the AIIB definition of the AoI.
- Where the subproject requires a new land-take, thus allowing to be considered "a major expansion", examine technically and financially feasible alternatives to the selected sites, including the "zero alternative/no project" option, and provide the documented rationale that the sites were selected after consideration of appropriate E&S site selection criteria.
- Collect recent E&S baseline data at an appropriate level of detail to inform the impact identification process. Using secondary information on the subproject AoI is acceptable but field surveys to gather primary information are always the best way to establish the baseline.
- Properly identify and determine critical habitats[103] using the criteria in the IFC Guidance Note 6 "Biodiversity Conservation and Sustainable Management of Living Natural Resources". Further guidance on ecological surveys and ecological impact assessment is provided in Appendix 2.
- Reassess the significance of the adverse E&S impacts assessed as significant by the Project ESIA. Loss of livelihoods and impacts on the local economy, occupational health and safety and cultural heritage can be less significant at the subproject level or, to the opposite, equally significant and thus requiring a focussed action.

Category B Projects. A limited E&S assessment (or an ESMP in AIIB terminology) will be required for Category B projects. As required by para 42 of the AIIB ESP, the ESMP should normally include:

(a) Mitigation measures.
(b) E&S monitoring and reporting requirements.
(c) Related institutional or organisational arrangements.
(d) Provisions for information disclosure and consultation during project preparation and implementation.
(e) Provisions for the project's GRMs, as well as a description of the PPM or other Bank-approved IAM and how they can be accessed.
(f) Community health and safety measures applicable to the project.
(g) Capacity development and training measures, including engagement of any E&S experts required for this purpose.
(h) Implementation schedule and cost estimates, including E&S mitigation and monitoring costs, which are integrated into the project's overall schedule and budget.

[103] Critical habitats are areas with high biodiversity value, including (i) habitat of significant importance to Critically Endangered and/or Endangered species; (ii) habitat of significant importance to endemic and/or restricted-range species; (iii) habitat supporting globally significant concentrations of migratory species and/or congregatory species; (iv) highly threatened and/or unique ecosystems; and/or (v) areas associated with key evolutionary processes (IFC PS 6, para 16).

(i) Performance indicators.
(j) A LARP/LAP/RP as required, preceded by social screening to identify its need.

These elements may be presented as one or more separate plans.

6.2.4. Stakeholder Consultations

The ESMPF provides a framework for stakeholder consultation during project implementation and the E&S team of the detailed design consultant will follow the requirements in the framework and conduct consultations with stakeholders identified for each subproject.

During the public consultation meetings, the E&S team of the Detailed Design Consultant, in collaboration with the PCU E&S experts, will present the ESIA, ESMP, and RP. They will provide an overview of the project, its location and implementation schedule, the E&S study process, and any conclusions on impacts, proposed mitigation measures, and benefits. The subproject information presented will be preliminary or intermediate, indicating that participant input can still be applied to the subproject design. Participants in the meetings will be invited directly to provide comments and corrections on what is presented. They will be provided with relevant and convenient contact information.

A public consultation meeting will be held for a specific subproject. The meeting announcement will be posted on the website and local mass media at least two weeks before the session. It will briefly describe the project, location, and specific contact details, including telephone numbers. The E&S team of the Detailed Design Consultant will collaborate with the PCU to make an announcement to the district authorities about holding the public consultation meeting. The announcement will include a written short booklet and an invitation to participate in the consultation meeting. Documentation of the consultations should be submitted to PCU E&S staff.

The E&S documents in Russian and Uzbek with records of stakeholder consultations should be posted in a public place close to the construction site and on the water utility and JSC Uzsuvtaminot websites.

6.2.5. AIIB Acceptance

All E&S documents (ESIAs, ESMPs and RAPs) prepared under the subprojects will require review and acceptance by AIIB.

6.2.6. Information Disclosure

Once the subprojects are approved, the Project Coordination Unit (PCU) will make sure that the final ESIA, ESMP, and RP are printed in local languages and made available to the public. Additionally, the PCU will upload the final E&S documents on the water utility

and JSC Uzsuvtaminot websites. Before the final approval of the subproject, the PCU will send the final documents to the AIIB for record-keeping.

6.2.7. Integration of ESIA Requirements into Project Documents

The bidding documents for each subproject must contain the Environmental, Social, Health, and Safety (ESHS) requirements mentioned in the ESMP. These requirements must be attached to the bidding documents and then added to the construction contracts. It is important that the implementation of the ESMP is budgeted appropriately and reflected in the construction contracts.

6.2.8. Site-Specific ESMP

Project contractors will translate the subproject ESMP to be developed on the basis of the subproject ESIA into site-specific ESMP (SSESMP), which will include specific mitigation measures and management actions to address E&S impacts associated with that subproject. The SSESMP will be submitted to the PMC for review. The updated SSESMP after review will be submitted to PCU's E&S staff for a final review and approval.

6.3. Generic Environmental and Social Management Plan

The objective of the generic ESMP is to propose possible measures to mitigate adverse environmental and social impacts and enhance positive impacts resulting from the subprojects activities that are identified in chapter 5 of this document.

The generic ESMP specifies (i) the measures to be implemented during the construction and operation phases of the subprojects and ensure that the adverse impacts of the project on the physical, biological, and human environment are avoided, minimized, mitigated, or compensated, and integrate the environmental and social considerations into the project implementation while complying with national and AIIB environmental and social assessment requirements; (ii) actions needed to implement these measures; (iii) monitoring plan to evaluate the effectiveness of the mitigation measures employed.

The generic ESMP covers the project's planning, construction, and operation phases with their potential to affect, positively or negatively, the environment and communities in the project area.

6.3.1. Generic Mitigation Plan

Based on the impact assessment report, most potential impacts can be minimized or even eliminated by adopting standard mitigation measures. The table presented below contains information on the general impacts and suggested mitigation and enhancement measures. It also specifies which party is responsible for implementing the mitigation and enhancement measures. However, the subproject-specific impacts

need to be identified during the subproject's ESIA, and a subproject ESMP will be prepared in line with the Generic ESMP. The Detailed Design Consultant will be responsible for conducting the subproject ESIA and preparing the detailed design subproject.

Following the impact assessment above, most potential impacts can be minimized or eliminated by adopting standard mitigation measures. The table below contains information about the general effects and suggested mitigation and enhancement measures. It also specifies which party is responsible for implementing the mitigation and enhancement measures. However, subproject-specific impacts will be identified during ESIA with the following preparation of a subproject ESMP will be prepared in line with the Generic ESMP. The Detailed Design Consultant will be responsible for the subproject ESIA and preparing the detailed design of the subproject. The subproject ESMP will provide a set of management plans to guide the contractors to prepare their site-specific ESMPs.

Table 62: Generic Mitigation Plan

No.	Project Activity	Impact	Mitigation Measures	Responsibility
Planning Phase				
1.	Community infrastructure and cultural resources	Disturbance of community facilities or sites with spiritual significance	(i) the design team will avoid siting the project components with undue impacts on the local communities; (ii) any damages caused to the community facilities and religious sites will be reinstated at no cost to the community.	Detailed Design Consultant, PCU/PMC, Water Utility
2.	Land acquisition and resettlement	Physical and or economic displacement, disruption of agricultural and business works	(i) physical and economic displacement will be avoided to the extent possible by placing the project components on the government-owned land; (ii) if avoiding physical and economic displacement is impossible, the project will ensure agreement with landowners for land acquisition before construction work begins. The LARP, RP, or LRP will be prepared based on the Resettlement Planning Framework (RPF) and following AIIB's ESS2.	Detailed Design Consultant, PCU/PMC, Water Utility
3.	Engineering Design	Improper engineering design can lead to various impacts associated with odors, sewage overflows, and effluent noncompliance with regulatory requirements	(i) design will be based on international best practices and adopted into Uzbek legislation; (ii) treated drinking water will comply with the relevant requirements set in applicable national legislation, while treated wastewater will fulfil the effluent discharge standards; (iii) hydraulic integrity for water supply infrastructure; (iv) agree on the scope of industrial wastewater to be treated by the project components; (v) measures to prevent overflow on WWTPs and raw wastewater discharge to the surface water.	Detailed Design Consultant, PCU/PMC, Water Utility
4.	Bidding documents	Failure to conduct environmental and social monitoring over the construction activities	(i) the presence of the environmental engineer and social safeguards specialist within the PMC and detailed design consultant; (ii) bidding documents and the contract will ensure the inclusion of environmental and social provisions along with ESMP and the budget for its implementation; (iii) ensure reinstatement of damaged utilities (including roads and access roads), transmission/distribution lines (if any), and restoration of other facilities damaged due to the project.	Design Consultant, PCU/PMC, Water Utility
Construction Phase				
5.	Air quality pollution	Increased dust, particulate matter, and volatile organic compounds emission, unpleasant odor, exhaust emissions from machinery and heavy equipment in the air environment	(i) dust prevention measures such as watering roads near the residential areas and watering dry, exposed surfaces, and stockpiles of aggregates; (ii) coverage of loose and fine materials (e.g., sand, and fine aggregates) when transported on trucks and stored piled at the site; (iii) use of vehicles, plants, and equipment meeting Euro-4 standard as required by Uzbek legislation ; (iv) storage of hazardous materials with potential gas emissions in sealed containers, (v) air quality monitoring in line with the monitoring plan, etc.	Implementation by Contractor, Supervision by PCU, PMC, and Water Utility
6.	Noise and vibration	Temporary increase in noise level and vibrations by excavation equipment, and the transportation	(i) effective noise control measures, including scheduling noisy activities for the daytime, preparing work schedules, and informing adjacent communities; (ii) use of low-noise equipment and machinery; (iii) installation of an acoustic	Implementation by Contractor

No.	Project Activity	Impact	Mitigation Measures	Responsibility
		of materials, equipment, and people	screen during noisy activities; (iv) speed limit of the project vehicles inside the populated areas; (v) provision of all project personnel with effective earmuffs and earplugs; (vi) conduct noise monitoring following the monitoring plan at the sensitive receptors' places.	Supervision by PCU, PMC, and Water Utility
7.	Impact to water resources	Trenching and excavation, runoff from ineffective stockpiled materials, infiltration of fuels and lubricants, and inadequate wastewater treatment may cause siltation, surface and reduce groundwater quality, and worsen the sanitary and hygienic condition	i) organization of the fuel storage area in designated areas; (ii) isolation of warehouse floor to prevent the infiltration of liquid materials (oil, dyes, lubricants, etc.) into the soil and groundwater; (iii) effective wastewater collection and disposal at each project site; (iv) building a drainage system where rain run-off water will be collected and released into the environment by the terrain's inclination, etc.	Implementation by Contractor Supervision by PCU, PMC, and Water Utility
8.	Impact to soil	Excavation and digging of trenches leading to soil erosion, slope destabilization, cave, and silt runoff, may lead to the destruction of the integrity of soil layers and the unsettling of nearby road surfaces	(i) site clearance, excavation, filling, and construction works will comply with the applicable national standards; these activities will be limited to rainy days, sand/dust storms, and heavy winds to minimize erosion and run-off; (ii) strip and stockpile topsoil where practical; (iii) identifying suitable sites for the temporary storage of construction and domestic waste – placement of containers for domestic solid waste and hazardous waste at the project site and contractor camp; (iv) maintain all construction sites in a cleaner, tidy, and safe condition; (v) avoidance of soil compaction on unpaved roads; (v) repair vehicles and equipment at the designated places; (vi) storing hazardous materials in the warehouse with properly isolated floor, etc.	Implementation by Contractor Supervision by PCU, PMC, and water utility
9.	Biological environment disturbance	Cutting trees and shrubs, haphazard site clearing, parking, and movement of construction vehicles and equipment stockpiling resulting in disturbance to the biological environment	(i) monitoring of flora and fauna before excavation, trenching, and other earthworks; (ii) avoid or minimize cutting trees while laying pipes and doing other works; (iii) If tree felling is unavoidable, the contractor will obtain a felling permit and pay the appropriate fee by applicable law and, based on the work results, will plant more trees at the felling site or nearby than were cut down; (iv) use of existing roads as much as possible; (v) use of less noisy equipment, vehicles, and machinery; (vi) coverage of the truck compartment while transporting construction material (such as sand, stones, cement, etc.) to avoid its spillage to the roads and adjacent area; (vii) avoidance of waterlogging and polluting the surrounding environment, etc.	Implementation by Contractor Supervision by PCU, PMC, and water utility
10.	Loss of livelihood	Loss of land, house, structure, plants, business, or other income	(i) preparation of LARP, RP, or LRP based on RPF and following AIIB's ESS2; (ii) stakeholder engagement consultations during selection of land for project components; (iii) inventory of impacted landholdings and immovable/non-retrievable improvements (buildings and structures) to determine fair and	Implementation by PCU, PMC, water utility, and contractor

No.	Project Activity	Impact	Mitigation Measures	Responsibility
			reasonable levels of compensation or mitigation; (iv) census detailing affected people's composition, demography, and other relevant socioeconomic characteristics; (iv) defining livelihood restoration activities; (v) eligibility criteria and cut-off-date, etc.	
11.	Impact to local economics	Economic displacement, loss of livelihood, and restrictions on land use will decline the local population's income. Conversely, the project will create jobs and business opportunities for the local population.	(i) avoidance or minimization of the disruption of the agricultural areas to prevent the local population from economic displacement and loss of income; (ii) provision of jobs for the local population, including non-hazard and unheavy work for women; (iii) business opportunities for private sector vendors; etc.	Implementation by PCU, PMC, water utility, and contractor
12.	Impact to community health and safety	Bringing noise, dust, communicable diseases, and unethical behavior of the project personnel in the project communities	(i) lighting, temporary fences, shining barriers, and signage at active work sites; (ii) ensuring that alcohol and drugs are prohibited on the sites; (iii) prevention of excessive noise; (iv) introducing a code of conduct for workers, including restricting workers in designated areas, no littering, no fire, no trespassing, no residence at construction sites, and no obligation to do potentially dangerous work; (v) preparedness in emergency response, etc.	Implementation by Contractor Supervision by PCU, PMC, and water utility
13.	Labour influx	The community health and safety are associated with the project personnel and migrant workers' presence who could transmit communicable diseases, cause conflict with the community residents, litter, causing noise, and other tension due to the difference in culture and living style, as well as pressure on public service and infrastructure	(i) introducing code of conduct on engaging with the local community; (ii) prohibition of sexual exploitation, abuse, and harassment; (iii) a ban on wildlife harvesting (hunting/trapping/fishing) and illegal entry into gardens, farmlands, backyards, and houses of residents; (iv) regular compulsory medical examinations (quarterly health check-ups) for all the project workers, etc.	Implementation by PMC and Contractor
14.	Restricted Access	Access to facilities, shops, businesses, and houses might be blocked during the pipework	arrangement of bypasses for pedestrians and vehicles and inform the community of a new temporary route before the construction; fencing the construction site and install visible signs and lights in the open trenches; etc.	Implementation by PMC and contractor Supervision by PCU and Water utility
15.	Traffic disturbance	Disturbance of traffic during construction activities and road bedding and pavement damage	(i) preparation of a traffic management plan to minimize traffic congestion due to increased traffic movement due to the project; (ii) provision of a temporary bypass for vehicles and pedestrians and inform the community of a new temporary route before the construction; (iii) installation of temporary traffic	Implementation by PMC and contractor Supervision by PCU and Water utility

No.	Project Activity	Impact	Mitigation Measures	Responsibility
		during construction and other project activities. Increased traffic could lead to increased local traffic incidents and degradation of the public road infrastructure.	lights, signs, and fences to ensure the residents' safety; (iv) roads damaged due to the project will be restored to their original condition by the project funds; (v) all construction and project vehicles will adhere to national requirements for speed limits, etc.	
16.	Impact to occupational health and safety	Inadequate sanitation facilities and drinking water supply, poor housing conditions, mishandling of hazardous substances leading to health and safety hazards to the workers	(i) the presence of full-time qualified and experienced OHS staff at the site; (ii) provision of adequate space and lighting, temporary fences, shining barriers, and signage at active work sites; (iii) prevention of excessive noise at the working places; (iv) equipment of the workers with personal protection equipment; (v) restricting workers in designated areas, and prohibition of littering, waste incineration, fire, trespassing, etc.	Implementation by Contractor Supervision by PCU, PMC, and Water utility
17.	Impact to archaeological and cultural heritage	The project may encroach into or be near archaeological and cultural resources resulted in loss of ACHS and loss of places that represent sacred meaning to the local communities	Preparation of a CFP, providing measures to follow if ACHS is identified, and development and implementation of a CHMP for the ACHS located in the vicinity of 150 m from the project components.	Implementation by Contractor and PMC Supervision by PCU, PMC, and Water utility
Operation Phase				
18.	Air pollution	WWTPs can generate a range of potentially harmful air pollutants, such as hydrogen sulfide, ammonia, and volatile organic compounds, greenhouse gases and other inorganic pollutants (heavy metals	(i) the water utility will take care of trees and bushes planted by the contractor to keep clean air in the area; (ii) regular replacement of the screens in WWTPs; (iii) regular pumping out the sludge from settling tanks in WWTPs; (iv) open wastewater systems are more efficiently exhaust emissions than covered facilities; (iv) if the trees planted by the contractor are not enough to prevent the spread of odours from the WWTP, the water utility will have to additionally plant fragrant flowers that emit a pleasant aroma, such as roses, basil, Rudbeckia fulgida, Cosmea Wild, Cosmus Pers, Aster, etc.	Water Utility
19.	Noise and vibration	The dominant source of noise could be blower, air distribution lines, sludge treatment facilities, etc.	(i) a manual for the operation and maintenance of the project facilities; (ii) the water utility will take care of trees and bushes planted by the contractor to reduce noise levels. If the greenery planted by contractor around WWTPs is not enough to mitigate the noise generated by mechanical and electrical equipment, then the water utility shall plant more trees that are good for absorbing noise; (iii) ensuring compliance with national noise level quality standards; (iv) soft ground is an efficient noise absorber; (iv) cultivating ground before planting and adding well-rotted organic matter to the soil surface may also help reduce noise while vegetation becomes established; (v) introducing	Water utility

No.	Project Activity	Impact	Mitigation Measures	Responsibility
			isolation of sources generating the noise by mineral wool, protective polyethylene film, and an external stainless-steel sheet	
20.	Water resources	Discharge and seepage of wastewater in the project area	(i) training O&M personnel on WDU, water main, and network operation; (ii) performing screening and monitoring the equipment, and further replacing defective ones; (iii) leak detection campaign; (iv) spill control; (v) drinking water quality monitoring; (vi) wastewater laboratory testing (vii) emergency preparedness, etc.	Water utility
21.	Soil	Sludge generated in the project facilities may contain chemical and biological matters that could negatively impact the soil properties.	Depending on the sludge composition, it could be used as fertilizer, material for landscaping, brick, cement, or ceramics production, or landfilled in provincial dumpsites.	Water utility
22.	Biological environment	Effluent represents one of the most significant sources of pollution for receiving water bodies including eutrophication, oxygen depletion, toxicity, floating debris, physical alterations	(i) strictly adhering to the contractor's WWTP operation and maintenance manual; (ii) screening and monitoring the equipment and systems with further cleaning or replacing defective ones; (iii) developing and implementing regular leak detection campaigns across the WWTP; (iv) regular laboratory effluent testing in various treatment processes and just before discharge into the receiving water bodies; (vi) emergency preparedness, etc.	Water utility
23.	Local economics and livelihood	The project will create new jobs and opportunities for the local population	Development of the proper human resources management system by the water utility.	Water utility
24.	Community Health and Safety	Poorly operated WDUs pass pathogens; failure to chlorinate allows pathogens to survive in distribution systems; poor quality pipes and low pressure allow cross-contamination from sewers and soil organisms	(i) drinking water quality test on residual chlorine and all parameters required by the national standard; (ii) emergency preparedness plan; (iii) regular decontamination of WWTP premises; (iv) regular health check of employees to prevent spread of diseases; (v) regular laboratory effluent testing before discharge into the receiving water bodies; (vi) regular air quality monitoring, specifically for hydrogen sulfide; (vii) if the trees planted by the contractor are not enough to prevent the spread of odours from the facilities, the water utility will have to additionally plant fragrant flowers that emit a pleasant aroma; etc.	Water utility
25.	Occupational health and safety	Exposure to dust, noise, and vibration, falling objects, and exposure to chlorine and other hazardous materials, exposure to electrical hazards from using electric tools and equipment	(i) adhere to critical safety protocols to ensure a secure working environment; (ii) equipping all personnel with PPE; (iii) all equipment, and if any chemicals, should be labelled correctly and stored in designated areas; (iv) design of lockout/tagout procedures to prevent accidental or unauthorized operation of equipment that could cause injury or damage; (v) emergency preparedness (including fires, explosions, floods, power outages, equipment failures, or medical emergencies); (vi) regularly check employees' health and vaccination	Water utility

No.	Project Activity	Impact	Mitigation Measures	Responsibility
			against illnesses (polio, hepatitis A, diphtheria, etc.); (vii) regular equipment inspections and maintenance checks	

6.3.2. Generic Monitoring Plan

E&S monitoring and auditing of the commitments will be implemented from the planning phase through the construction and operation phases. These activities will be implemented by the qualified environmental and Social Specialists of the PMC, PCU, Detailed Design Consultant, and Khorezm Suvtaminot LLC in coordination with contractors and other external agencies as identified. The entire environmental and social monitoring and auditing process should be properly documented.

The subproject project monitoring plan to be developed by the detailed design consultant, aims to assess the performance of the undertaken mitigation measures, formulate additional mitigation measures, and modify the existing ones to meet environmental and social compliance as appropriate during the planning phase, construction, and operation of the project components. The environmental and social monitoring plan will specify the monitoring parameters, frequency and methodology of measurement, sampling locations, and applicable standards for environmental quality, where:

- Monitoring site is the place near the project activity, sensitive receptors, or within the project influence area.
- Means of monitoring are parameters of monitoring and methods of monitoring, including visual inspection, consultations, interviews, surveys, field measurements, or sampling and analysis.
- Frequency of monitoring: daily, weekly, monthly, seasonally, annually, or during the implementation of a particular activity.

The subproject monitoring plan will be coupled with a series of supporting procedures, yet to be developed, covering:

- Sample or data collection
- Sample handling, sample storage, and preservation
- Sample or data documentation
- Quality control
- Data reliability (calibration of instruments, test equipment, and software and hardware sampling)
- Data storage and backup, and data protection
- Interpretation and reporting of results
- Verification of monitoring information by qualified and experienced external experts.

The monitoring plan will also describe the links between the resources/receptors, the impacts, and mitigation measures. If exceedance of standard is observed, corrective actions will be proposed by the PMC and implemented by the contractors in a timely

manner. Resettlement will be an integral part of social monitoring plan prepared by the Detailed Design Consultant and implemented by PMC with provision of the relevant ESMP implementation report.

Site inspections will be undertaken regularly in relevant areas of the subprojects. The inspections will focus on compliance with the ESMP. The inspections will play an essential role in increasing awareness of ESMP. Minor non-conformances will be discussed during the inspection and recorded as a finding in the inspection report. Major non-conformances will be reported as incidents. Inspection results will be disclosed at the project management meetings with PCU, water utility, contractors, and other agencies if needed.

Major non-conformances may include the following:

- Non-payment of compensation for land acquisition
- Non-reinstatement of damaged utilities such as roads (including access roads), transmission/distribution lines (if any), and restoration of other facilities damaged due to the project
- Exceedances of relevant thresholds as identified during routine monitoring
- Non-conformances with the requirements of the ESMP or supporting documentation identified during the site inspection, consultation with communities and other project stakeholders
- Non-conformances identified during an environmental audit or inspections by regulatory authorities
- Events, such as spills, wastewater discharge, debris and other impacts, resulting in potential or actual environmental harm
- Events that did or could result in injury to staff, visitors to the project sites, or surrounding communities
- Significant complaints or grievances received from adjacent communities and any other source.

Corrective and preventive actions will be identified and implemented in response to these non-conformances. These actions will address the root cause of the non-conformance and reduce or prevent repeated non-conformances. PMC, PCU, and the water utility will establish a process for the identification, investigation, and tracking of non-conformances, including:

- Prioritising and classifying non-conformances based on the type and severity of the non-conformance;
- Recording of non-conformances and the results of corrective and/or preventive actions, including the actions necessary to mitigate or remedy any associated impacts;
- Defining results expected from the corrective and/or preventative actions;

- Confirming the corrective and/or preventive actions taken to eliminate the causes of the non-conformance are appropriate to the magnitude of the problem and commensurate with the impacts encountered;
- Reviewing the effectiveness of the corrective and/or preventive actions taken;
- Implementing and recording required changes in the ESMP or project monitoring plan resulting from corrective and preventive action.

Serious non-conformances will be classified as incidents and will be promptly managed.

During construction, E&S monitoring will be implemented by several project stakeholders to ensure the protection of air and noise pollution, community relations and safety provisions, water quality control, soil quality tests, and greenbelt development around the major project components such as WDUs, pumping stations, and WWTPs.

During operation, raw water, sewage, treated effluent, and drinking water quality monitoring will be critical responsibilities of the water utility.

The E&S Monitoring Report will be a part of the monitoring process and will focus on implementing the subproject ESMP. The E&S Monitoring Report will be prepared on semi-annual basis and provide information on (i) compliance of the subproject activities with the applicable Uzbekistan regulatory framework and AIIB ESP; (ii) compliance of the E&S safeguard subproject activities with subproject ESMP; (iii) incidents and emergencies and mitigation and management measures applied; (iv) measurements, laboratory tests, and social surveys; (v) capacity building activities; (vi) GRM implementation; and (vii) recommend corrective actions or amendments of the subproject ESMP.

The water utility will conduct external monitoring to ensure that the subproject activities comply with Uzbek regulations, while the AIIB mission will monitor covenant compliance. If any non-compliance arrives, PCU will investigate non-compliance and decide what is needed to bring a subproject into compliance or whether financing should be suspended.

6.4. Environmental and Social Reporting

Monitoring elements of the ESMP will be documented and controlled by PMC and communicated to PCU. Records demonstrating compliance with legal requirements and conformance with the ESMP will also be maintained. PCU and PMC will supervise, establish, implement, and maintain reporting procedures.

Following Uzbekistan applicable regulations[104], the contractor will maintain a log for environment, health, and safety training sessions delivered to its personnel and separate register for accidents occurred during the civil works. Instrumental monitoring records and laboratory test reports will be kept by contractor and made available for PCU, water utility, and AIIB.

The monitoring requirements will be fulfilled by maintaining the proper documentation records of the findings and include daily checklists by a contractor, weekly reports and monthly audits by PMC, and quarterly monitoring missions by PCU.

The following reports will be produced:

- Contractor will prepare monthly reports on SSESMP implementation under the project and submit them to PCU and PMC.

  Prior to the start of the civil works, the contractors will collaborate with PMC to create a site inspection format that will improve the ESHS supervision process. This format will be added to the SSESMP. The contractor's monitoring will consist of a checklist that includes a list of mitigation measures to be implemented during construction, their performance status, and explanations as needed.

- To ensure the contractor implements the SSESMP accordingly, PMC will conduct environmental monitoring throughout the project and the contractor's contract. PMC's monthly and quarterly reports will include findings revealed during monitoring of the physical and social environment, the investigation of the project sites, and compliance of the contractor's activities with SSESMP. PMC will also report to PCU on LARP/RP/LRP implementation and finally, will provide a LARP/RP/LRP completion report.

- The project status and compliance with ESMP will be reported to the AIIB through semi-annual environmental monitoring reports prepared by PMC and approved by PCU. This reporting will also provide information on accidents, emergencies, and grievance, as well as applied management and mitigation measures.

6.5. Capacity Building and Training Programme

The implementation of the ESMPF requires specific knowledge for stakeholders engaged in different phases of the project implementation. The project will support relevant environmental and social management training, including ESMPF implementation and preparation and implementation of ESIA, ESMP, and RP per AIIB

[104] Regulation No. 272, Arrangement of Training and Knowledge Evaluation in Occupational Health and Safety, 14.08.1996, https://lex.uz/docs/699606

ESP and ESSs. To achieve this, the PMC will organize training sessions for E&S specialists of the Detailed Design Consultant and contractors. The training will cover the basic requirements of the AIIB ESP and National EIA rules and procedures and relevant case studies. Furthermore, the PMC will continue training the contractor during construction on environmental and social compliance, monitoring, and supervision.

Before starting respective works,

- PMC will train contractors on handling, collecting, and disposing of hazardous materials (polychlorinated biphenyls and asbestos materials), code of conduct with residents of project communities, and respect and protect local spiritual and cultural heritage sites during construction.
- The contractor will provide training to its personnel on occupational health, safety, and the environment, including first aid training. Other training sessions by the contractor will include an introduction to the subproject activities, job hazard analysis, emergency preparedness, etc.

Other capacity building activities under the project will include public awareness on water conservation and maintaining hygiene and good sanitation conditions for better living standards. These activities will be implemented by various stakeholders during planning, construction, and operation phases.

The tentative plan of capacity building and training plan is presented in the table below.

Table 63: E&S Training and Capacity Building Activities

No.	Training/Capacity Building	Provider	Participants	Period	Tentative cost
1.	Training on ESMPF implementation and preparation and implementation of ESIA, ESMP, and RP per AIIB ESP and ESSs	PMC	PCU, Detailed Design Consultant, Contractors	Upon signing the contract and prior any construction activities Duration – 1 day	US$5,000
2.	Training on SSESMP preparation	PMC	Contractor	Upon signing the contract and prior any construction activities Duration – 0.5 day	US$2,000
3.	Training on waste disposal practices and procedures, including training on hazardous waste management	PMC and Contractor	Contractor's personnel	Prior construction activities and during the civil work Duration – 0.5 day	US$2,000

No.	Training/Capacity Building	Provider	Participants	Period	Tentative cost
4.	Training on OHS (equipment and machinery maintenance, specific hazards of their work, first aid, basic sanitation, and health care) and environmental protection	Contractor	Contractor's personnel	Prior construction activities and during the civil work Duration – 0.5 day	US$2,000
5.	Training on code of conduct, engaging with the local community, community health and safety, and GBV risks	PMC and contractor	Contractor's personnel	Prior construction activities and during the civil work Duration – 0.5 day	US$2,000
6.	Training on O&M of new water and wastewater infrastructure	Contractor	Water utility's personnel	Upon completing all the construction works, testing and commissioning of water infrastructure to the water utility Duration – 14 days	US$10,000
7.	Training on emergency preparedness (case studies and practice)	PMC, Contractor, Water utility	Contractor and Water utility's personnel	During civil works and operation phase Duration – 0.5 day	US$2,000
8.	Training on CHMP and CFP (case studies and practice)	PMC	Contractor	prior any construction activities Duration – 1 day	US$5,000
9.	Training for gender equality and women's empowerment	PMC	Residents of the project communities	During the project implementation	US$10,000
10.	Community consultation meetings	Detailed Design Consultant and PMC	Institutional Stakeholders and Residents of the project communities	Continuously during the project implementation	US$20,000
11.	Mass media campaign	mass media	public	Continuously during the project implementation	US$2,000
				Subtotal:	**US$62,000**
				10% of Subtotal (*Miscellaneous*):	**US$6,200**
				Total:	**US$68,200**

WDU = water distribution unit; PS = pumping station; PB=production base; WWTP=wastewater treatment plant; SSESMP = Site-specific Environmental and Social Management Plan; GBV = gender-based violence; O&M = operation and maintenance; OHS = operational health and safety; CHMP = Cultural Heritage Management Plan; CFP = Chance Find Procedure

6.6. Gender Action Plan

The Gender Action Plan (GAP) has been developed by following the AIIB requirements to ensure that women of the project area have access to resources and economic empowerment. The GAP aims reducing gender gaps in access to the benefits of safe, sustainable, and convenient water and wastewater infrastructure, which would improve women's livelihoods and well-being. The Project effectively mainstreams gender, where women will benefit from access to resources and ability to be economically active. Adequate water and wastewater systems will lead to in declining time spent by women and girls on domestic chores allow them to pursue education and income. The Project will also raise public awareness about hygiene and sanitation (Table 61), provide employment opportunities (Section 5.4.13), contribute to reducing time poverty and expenditure on water and medicine, and improve overall public health in the Project area.

The GAP aims to ensure that women will benefit from the proposed water supply service and sanitation improvements through equal participation and consultation in the project interventions and capacity-building opportunities. To close identified gaps and address challenges (Section 4.6), the following actions will be implemented:

- Given the current water supply and sanitation practices in the province, adequate and continuous attention to women and children should be taken into account while planning the gender action plan and capacity-building measures. These activities will include awareness campaigns on the project that focus on providing better access to safe water for drinking and food preparation and creating more favorable conditions for personal hygiene.
- The infrastructure projects have long-term impacts on the local communities by changing the entire social and cultural fabric of community life. Women's participation in the project will significantly impact economic prosperity at the family, community, district, and province levels. Construction has traditionally been a male-dominated industry, a condition that has been justified, among other issues, by the harsh work situations. In addition, cultural and social roots refrain women in the project area from being involved in construction activities. However, local women could participate in any other non-construction activities associated with the project, including food preparation, site cleaning, site gardening, warehouse management, office management, etc. Therefore, the project should promote women's involvement at the local level.
- Adequate water and wastewater systems will lead to in declining time spent by women and girls on domestic chores allow them to pursue income. These activities may include vegetable and fruit cultivation, cultivation of medicinal plants, processing and reduction of agricultural waste, flower arrangement, honeybee farming, livestock breeding, processing industries (livestock,

horticulture, and agriculture), etc. rural entrepreneurship is a suitable solution for women's empowerment and capacity building to change the current pattern of life, reduce the gap between urban and rural, and create economic, social, environmental, and institutional equality.

- The promotion of gender equality in education and vocational training could be implemented through improved physical infrastructure, better access, and opportunities for girls to education and training, better social attitudes, and more favorable conditions for the participation of women at all levels across the sectors. Gender equality in the project area could be realized only through the promotion of education. The meetings and trainings with a gender perspective will allow women and girls to rethink their behavior toward education and look for opportunities that could more efficiently support their lives and families.
- Gender is an important determinant of primary healthcare access and uptake: Women's greater familiarity with health and social services is often attributed to the fact that they dedicate more of their time to caring for children, families, and even neighbors. Consultations and training activities will help women and girls in rural areas maintain the health of their communities by following sanitary and hygienic practices in handling water for drinking and food preparation, as well as managing wastewater.
- Water supply and wastewater systems are essential in providing access to safe drinking water and ensuring community health and safety. Water and wastewater services can improve water security and provide social benefits to the province's population. In the project province, the residents can benefit through economic opportunities created during the construction and operation phases or income received from being subcontractors for various construction, O&M, and non-technical activities. Women can gain access to new jobs and income generation opportunities or improve health and safety due to the improved quality of local social services associated with water and wastewater.

Additionally, the GAP will focus on agency staffing and capacity building. The Project sets achievable targets for personnel gender mix at the PCU, Khorezm Suvtaminot LLC, Project consultants, contractors, and other Project personnel. PCU and PMC will have the overall responsibility of management, implementation, and monitoring the GAP. A Social, Gender and Resettlement Specialist will be assigned to the PCU to coordinate GAP implementation and reporting. PCU and PMC will work closely to ensure GAP performance is updated in quarterly and semi-annual progress reports submitted to AIIB.

The Project will:

(i) Support the Uzsuvtaminot JSC, water utility, and local administrations at the district and community levels to promote women through equal access to training and capacity building.

(ii) Increase women's safety and privacy needs through access to separate bathrooms and toilets.
(iii) Ensure affordable access to water services.
(iv) Increase employment opportunities and careers for women through access to formal education qualifications.
(v) Provide employment for women in project work.

A tentative Gender Action Plan is provided in table below and will be finalised and detailed during the engineering design phase.

Table 64: Gender Action Plan

Activities	Targets and indicators	Responsibilities	Timeframe
Project implementation, monitoring, and reporting			
Ensure environmental, social, and gender considerations are integrated into the project activities and decision-making process	▪ PCU, PMC, and DED Consultant are staffed with Environmental, Social, and Gender Specialists. ▪ Contractor(s) team includes Occupational Health and Safety and Environmental Engineers and Social Specialist ▪ E&S instruments and documents for subprojects are developed and timely implemented.	UzWJSC, PCU, and Khorezm Suvtaminot LLC	Starting from Year 1
Employ women in the project management, supervision, implementation (including civil works)	▪ The PCU, PMC, and DED Consultant teams have female-employees. ▪ Women are employed in project civil works as part of the contractor's team. ▪ Women employed in the project activities have safe working conditions. ▪ Water and sanitation facilities are available for women workers at the construction site.	PCU, PMC, DED Consultant, and contractor(s)	Starting from Year 1
Institutional Capacity Strengthening			
Review and improve of the recruitment procedure of Khorezm Suvtaminot LLC	▪ Improved gender responsive recruitment procedure. ▪ All job posts for utility agency include text "Applications by women are encouraged." ▪ Sex disaggregated human resource database developed and annual human resources report is available.	PCU, PMC, and Khorezm Suvtaminot LLC	Upon contracting the PMC
Integrate gender approaches in corporate policy documents and procedures	▪ Customer satisfaction survey implemented at the beginning and the end of the project. ▪ Gender sensitive sanitary facilities are available for men and women. ▪ Water utility personnel participated in gender capacity building program (gender analysis, gender-responsive planning, gender budgeting, and GAP compliance).	PCU, PMC, and Khorezm Suvtaminot LLC	Upon contracting the PMC
Output 1: Improved water and wastewater services			
Provide safe and sustainable drinking	▪ Treated water complied with Uzbek drinking water quality standard. ▪ Safe and sustainable drinking water available across the Project area.	PCU, PMC, and Detailed Design Engineer	Design and construction stages

Activities	Targets and indicators	Responsibilities	Timeframe
water for local population	▪ Households of the Project area connected to the new water distribution system complying with water quality standards.		
Provide reliable wastewater services for local population	▪ Wastewater collection and treatment in the project area. ▪ Households of the project district centres are connected to the new wastewater system.	PCU, PMC, and Detailed Design Engineer	Design and construction stages
Organise community consultation meetings with local population and specifically with women in the Project area discussing communities' health and safety, project interventions and business and job opportunities, and established GRM	Quarterly community consultation meetings are conducted per participating settlement: ▪ Consultation meetings are scheduled at times and places convenient to both men and women. ▪ Community consultations are discussed Project activities and issues encountered including those related to the communities' health and safety and business and job opportunities. ▪ At least 100 women participated in the community consultations by the end of the Project activities. ▪ Community committees, public schools, and rural medical stations include women empowerment and helpline numbers.	PCU, PMC, and Detailed Design Engineer	Design and construction stages
Organise training on water conservation and hygiene for residents in the project area	▪ Training sessions are organised at the public schools: – Training sessions are delivered to the students of 1-11 grades. – Training sessions are scheduled at times agreed upon with the public-school principal. – At least 100 boys and 100 girls from each district. – Training sessions are focused on school-based hygiene and efficient use of water and the training program is agreed upon with the public-school principal. ▪ Training sessions are provided for adult resident of the project communities: – Training sessions are delivered to the families with low income, women-headed households, and other vulnerable groups. – At least 20 representatives of vulnerable groups are participated in the training activities. – Training sessions are scheduled places convenient to training participants. – Training sessions are focused on gender equality of access to water services, best practices on sanitary and hygiene, efficient use of water with the consideration of climate change and tension of reducing water resources in the near future. – The training program is based on age and gender sensitive approach.	PCU, PMC, and Detailed Design Engineer	Design and construction stages

Activities	Targets and indicators	Responsibilities	Timeframe
Organise mass media campaign	▪ Organise mass media campaign in each Project district to increase the awareness of the population about the project, its benefits, GRM, etc.	PCU, PMC, and Detailed Design Engineer	Design and construction stages
Output 2: Institutional effectiveness improved			
Organise employment opportunities for women	▪ PCU, PMC, and DD Consultant gender focal points are appointed. ▪ 20% of PCU positions are occupied by women. ▪ 20% of water utility positions are occupied by women. ▪ 10% of the project consultants and contractors' positions are occupied by women.	EA and PCU	Starting from Year 1
Encourage women participation in the project activities	▪ All new jobs are advertised with a statement encouraging women to apply. ▪ All job opportunities are advertised in the project area.	EA, PCU, and contractors	Starting from Year 1
Provide gender and GAP awareness training	▪ One gender awareness and GAP training is provided to each contractor: – Training is delivered to contractors' personnel: both men and women, where at least three participants of those trained are women. – Training is delivered prior to the physical commencement of work on the subproject. – Training is focused on the GAP implementation, gender, hygiene, and sanitation awareness, and community's health and safety. ▪ One gender awareness and GAP training provided to water utility and PCU personnel: – Training is delivered to the water utility personnel (including to those worked at customer service departments and HR department) and PCU staff where at least 30% of the overall trainees are women. – Training is delivered before the commencement of the physical works. – Training is focused on the GAP implementation, gender, hygiene, and sanitation awareness, and community's health and safety.	PMC	Prior to the physical commencement of project activities
Provide gender equality and skills development training	▪ One specific on-the-job training to the contractor's personnel with special focus on targeting female workers is provided: – Training is delivered during the contractor's work. – Training is focused on the occupational health and safety, filing complaints, measures to be taken against unpaid labour work, participating in decision making, and other skills necessary for advancing gender equality in women daily lives and work.	PCU and PMC	During the project construction

Activities	Targets and indicators	Responsibilities	Timeframe
Organise specific provisions for women in the labour camp(s), including safe drinking water, toilets, bathrooms, catering, etc.	▪ Design provided for drinking water station and catering for personnel. ▪ Design provided for separate sanitation facilities for women. ▪ Design provided for separate bathroom facilities for women. ▪ Adequate facilities for women in construction sites are established (bathroom, sanitation facilities, catering area, etc.).	PCU, PMC, and Detailed Design Engineer, and contractors	Starting from Year 1
Monitor the contractor's compliance with the Code of Conduct	▪ Contractors employ dust and noise control measures in the project area (hours during which noisy plant and equipment may be used) following the Contractor Code of Conduct. Monitoring findings are reported to the PCU. ▪ Following the Code of Conduct, contractors behave correctly toward the local population (including women, older adults, and children).	PCU, PMC, and contractors	Design and construction stages
Manage the GRM	▪ At least one-woman member included in the Grievance Redress Committee (GRC) per participating settlement. ▪ Sex disaggregated data on complaints filed and redressed.	PCU, PMC, and contractors	Starting from Year 1
Implement, monitor, and report on GAP	▪ Progress monitored regularly and reported in semi-annual reports. ▪ Lessons learned and good practices highlighted.	PCU, PMC, and contractors	Starting from Year 1

GAP = Gender Action Plan; PCU = Project Coordination Unit; PMC = Project Management Consultant; EA = Executing Agency; GRM = Grievance Redress Mechanism; GRC = Grievance Redress Committees

6.7. Grievance Redress Mechanism

Grievances redressal is a critical component of effective stakeholder engagement. The purpose of GRM is to provide a forum for external and internal stakeholders to voice their concerns, queries, issues, and suggestions on the project. Timely and effective redress of stakeholder grievances will bring sustainability to a project's operations. GRM will help advocate forming and strengthening relationships between project management and the stakeholder community groups and bridge gaps to create a common understanding, helping the project management operate efficiently in the area.

Based on the understanding of the project area and the stakeholders, a list of the grievance types and corresponding redress mechanisms have been identified for the Project and include the following:

(1) GRM for Communities (to redress grievances from all project-related stakeholders in general and community grievances in particular)
(2) GRM for Workers (to redress grievances from all related direct and indirect project personnel, including local workers, migrant workers through contractors, sub-contractors' and consultants' personnel)
(3) GRM on Gender-based Violence (GBV) (to redress grievances from all project-related stakeholders)
(4) Court of Law
(5) AIIB's Project-affected People's Mechanism (PPM).

The complaint will follow the process illustrated briefly in Figure 25 below. The purpose of the GRM is to facilitate resolving disputes without going into litigation. However, if any disputant remains dissatisfied with the project-level GRM outcome, the disputant can seek redress from a court of law.

The Community GRM will operate in two tiers: Community level GRM and PCU level GRM.

Each tier will have different actors for objective and transparent decision-making. This approach would allow for trust to be built among the stakeholders and prevent the culmination of small issues into major community concerns. The GRM will be accessible and understandable for all stakeholders and be available for the entire project life.

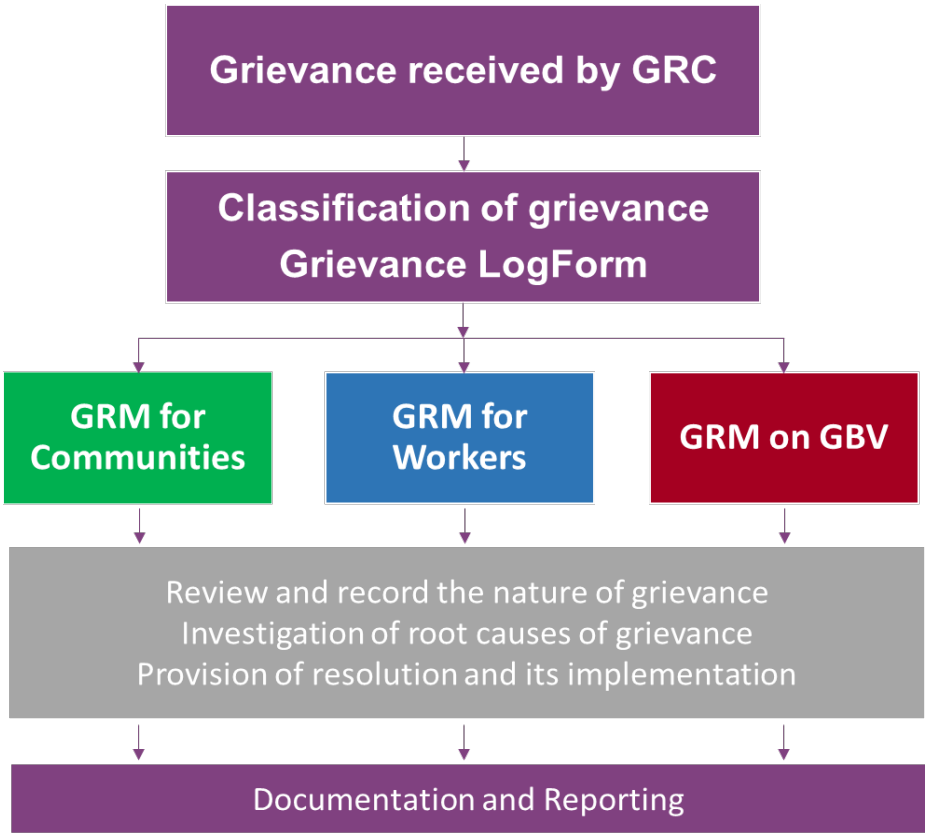


Figure 27: GRM per grievance type

6.7.1. GRM for Communities

Grievance Redress Committees

The Grievance Redress Committees (GRC) will be created to ensure accessibility, fairness and independence of the grievance filing and redress and will be established at two levels:

(1) Community-level GRC
(2) Project-level GRC.

The community-level GRC will be established to engage community members and leaders (makhalla committee) to participate in the decision-making processes and have the "voices" of the aggrieved parties in the grievance redress procedures. This will also enhance local ownership of the project. Having members based in the community, the GRC will help resolve the grievances quickly, often without going into lengthy documentation. The local participation will further build local capacity in dispute resolution and decision-making and provide leadership support in implementing the project.

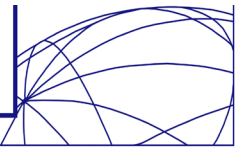
The community-level GRC will be established in each of the community where the Project will have its components: the number of participating communities will correspond to the number of created GRCs. The community-level GRC will be dealing only with the Project activities in the specific community. GRC will comprise representatives of the community, village and the project personnel. The following composition is proposed for a GRC:

1. Head of the makhalla
2. Member of the women's committee (community level)
3. Community members (such as nurse, medical doctor, school principal, and other residents)
4. PCU Environmental and Social Specialist
5. PMC Environmental and Social Specialists
6. PCU Coordinator
7. Head of District Department of Khorezm Suvtaminot LLC
8. Contractor's authorised representative.

However, the members of the community-level GRC should be appointed after consultations with the communities. A community may want to include additional members such as an assistant to the local governor, youth leader, community members with medical education, school principals, retired teachers, and other community activists. Meanwhile, when selecting members for a GRC, social and cultural background should also be considered, e.g., women's issues should be addressed primarily by female members of the GRC. Thus, a GRC should include no less women than men. In addition, the community-level GRC composition shall be available on the dashboard of each project settlement. No work should be started by the Project without determining the community-level GRC for each project community.

The GRC scope of work will include the following:

(1) A GRC will ensure that all grievances related to social and environmental issues are registered, formally recorded, reviewed, resolved, and the concerned person is informed on time.
(2) GRC will not consider complaints related to the procurement or any matters pending in the court of law.
(3) In resolving the disputes, the GRCs will consider the following:
    - Merit of the complaints/case received for consideration;
    - Evidence to decide on the complaint;
    - Witness statements;
    - Plausibility of the case in the light of related project activity;
    - Applicable laws, environmental guidelines of Uzbekistan, initial environmental examination and environmental review document of the project, and AIIB ESP;



- Observations made on the field; and
- Available information on previous complaints of similar nature.

Grievances may be channelled through letters, emails, text messages, verbal narration, grievance boxes, and registers. However, the printed Complaint Registration Forms should be available at the community centre (*makhalla committee*) and complaints should be registered in relevant Grievance Logs.

At this level, a complaint should be resolved within two weeks. If the grievance was not redressed in the first stage or the complainer is not satisfied with the decision made, the complainer can submit the grievance directly to the project-level GRC in head offices of Khorezm Suvtaminot LLC in Urgench.

Project-level GRC

The project-level GRC will be established at Khorezm Suvtaminot LLC. However, apart from Khorezm Suvtaminot representatives, the GRC should also include the authorised representative of Uzsuvtaminot JSC and the PCU Head. In addition, the GRC may be joined by the Khorezm Province Administration (*khokimiyat*) officers from the land cadastre, agriculture, water resources, legal, and health or education departments.

The project-level GRC composition will be available at the district departments of Khorezm Suvtaminot LLC and the PCU Coordinator's office in the water utility. The GRC scope of work will include the following:

(1) The GRC will monitor the work of the community-level GRC and will work as a forum for appeal against the decision of the community-level GRC.
(2) GRC will not consider complaints related to the procurement or any matters pending in the court of law.
(3) In resolving the disputes, the GRCs will consider the following:
    - Merit of the complaints/case received for consideration;
    - Evidence to decide on the complaint;
    - Witness statements;
    - Plausibility of the case in the light of related project activity;
    - Applicable laws, environmental guidelines of Uzbekistan, initial environmental examination and environmental review document of the project, and AIIB ESP;
    - Observations made on the field; and
    - Available information on previous complaints of similar nature.

Grievances may be channelled through letters, emails, text messages (SMS), verbal narration, grievance boxes, and registers. The printed Complaint Registration Forms should be available at the district department of Khorezm Suvtaminot LLC and complaints should be mandatory registered on the Grievance Log.

Grievance Resolution

The overall GRM process will be built on the following four steps:

Step 1. Receiving Grievance

This stage involves the recording of the complaint on the project. The complaint may range from issues and complaints to an inquiry or suggestions for further improvements. All these grievance types should be registered, and a case will be created. At the end of this stage, an acknowledgment of the receipt of complaints, inquiries, or suggestions is issued to the aggrieved party with a case number and recorded date in the Grievance Log.

Step 2. Grievance Classification

The registered complaint should be screened whether it is simple or complex grievances, provided by individual or large group. Regardless of the nature of the complaint, it would be categorised as environmental or social issues. The criteria for determining ecological issues are noise, pollution, dust, effluent, sludge, health and safety, or other parameters. The environmental and social safeguards related to grievances and suggestions will be taken forward in this GRM, while the non-safeguard-related issues will be sent to the contractor for their action. The outcome of that action will be informed by contractor accordingly.

Step 3. Grievance Investigation

During this stage, the GRC will collect information about the complaints, assess the information provided, and verify the data supplied with field investigation (if needed). After a report with the decision made is prepared by the GRC of first tire, the report and its recommendation are sent to the complainant. If not satisfied with the decision made, the complainant may submit its grievance to the 2nd tire GRC, where, based on the additional investigation and discussions, a decision would be made and agreed upon by consensus.

Step 4. Grievance Resolving and Case Closure

Irrespective of the tire the grievance underwent, the aggrieved party or individual will be informed of the outcome, and information on the corrective measures will also be communicated if relevant. After such communication, the case would be closed, and the status of the cases would be updated in the registry.

Grievance Investigation by Community-level GRC

The procedure for hearing and resolution of the complaint will be as follows:

- The GRC member (head of makhalla committee or representative of women's committee) will log the complaint in a register called the Grievance Log.
- The GRC member will issue to the aggrieved party with a case number and recorded date in the Grievance Log within two days.
- The GRC will arrange the meeting within next seven calendar days of the logging of the complaint to:
  - Deliberate on the nature and circumstances of the complaint;
  - Investigate the complaint based on evidence provided by the complainant;
  - Meet with the complainant and other persons;
  - Make a decision.
- If the GRC needs extra time to investigate or deliberate on the complaint, the head of makhalla (community committee) should inform the complainant of the time when a decision is expected. In any case, all complaints shall be resolved within one month.
- The GRC will prepare all the information and documents relevant to the complaint prior to the meeting and provide copies to all members.
- If the solutions are not accepted by grievant, GRC will conduct more consultations with the grievance to obtain further detailed clarification on the issues and to try and agree upon a mutual solution. Minutes of such consultation sessions should be kept in the Grievance Log. If mutual solution cannot be obtained through consultations, the grievant may submit its complaint to the project-level GRC.

Once the complaint is resolved, the PMC will document the decision and prepare full documentation on the process, including minutes of meeting, photographs of visits, documents reviewed, and reasons for the decision and will share this documentation and the complaint management report with all GRC members, the complainant, and the PCU. The GRC will ensure that the complainant is fully informed of the decision and is also informed about the right to appeal to the Project GRC and to the court of law. In case follow-up actions are required, the PMC will ensure that the actions are taken and documented and will share this information with the head of the community committee, other GRC members, and the PCU.

Grievance Investigation by Project-level GRC

The procedure for hearing and resolution of the complaint by the project-level GRC will be almost the same as for community-level GRC:

- The GRC member (PCU Coordinator or water utility officer) will log the complaint in the Grievance Log and issue to the aggrieved party with a case number and recorded date the same day.
- The GRC will arrange the meeting within next seven calendar days of the logging of the complaint to:
  - Deliberate on the nature and circumstances of the complaint;
  - Investigate the complaint based on evidence provided by the complainant;
  - Meet with the complainant and other relevant persons;
  - Make a decision.
- If the GRC needs extra time to investigate or deliberate on the complaint, PCU Coordinator should inform the complainant of the time when a decision is expected. In any case, all complaints should be resolved within one month.
- The PCU Coordinator will prepare all the information and documents relevant to the complaint prior to the meeting and provide copies to all members.
- If the solutions are not accepted by grievant, PCU Coordinator will conduct more consultations with the grievance to obtain further detailed clarification on the issues and with the following agreement upon a mutual solution between GRC and complainant. Minutes of such consultation sessions should be kept in the Grievance Log.

The GRM will provide an accessible forum for receiving and facilitating resolution of affected persons' grievances related to the project. Every grievance will be registered with careful documentation of the process adopted for each grievance handled, as explained below.

PCU and PMC will have the overall responsibility for timely grievance redress on environmental and social safeguards issues. The Project Coordinator in Khorezm Province will be the focal person for facilitating the grievance redress at the local level.

Public awareness campaigns will be conducted on a regular basis as per the communication strategy of the project to ensure awareness of the project's progress and its GRM.

Documentation of grievances and reporting. The grievance will be processed in 15 days at each tier, and written communication will be sent to the complainant at each tier. A complaint log will be maintained at the PMC and PCU, with details of the complaint lodged, the date of the personal hearing, actions taken, and the date of communication sent to the complainant. The PMC is responsible for reporting the complaint log to PCU every month. The PCU is responsible for gathering the grievance statistics at two tiers and in the national complaint handling system, compiling the data in the Quarterly Project Progress Reports and Semi-annual Environmental and Social Monitoring Reports, and reporting to AIIB.

However, if the complainant is not satisfied with the decision made by the Project GRC, the grievance than will be considered by Uzsuvtaminot JSC through its complaint management system. Uzsuvtaminot JSC provides the following contacts for filing grievance:

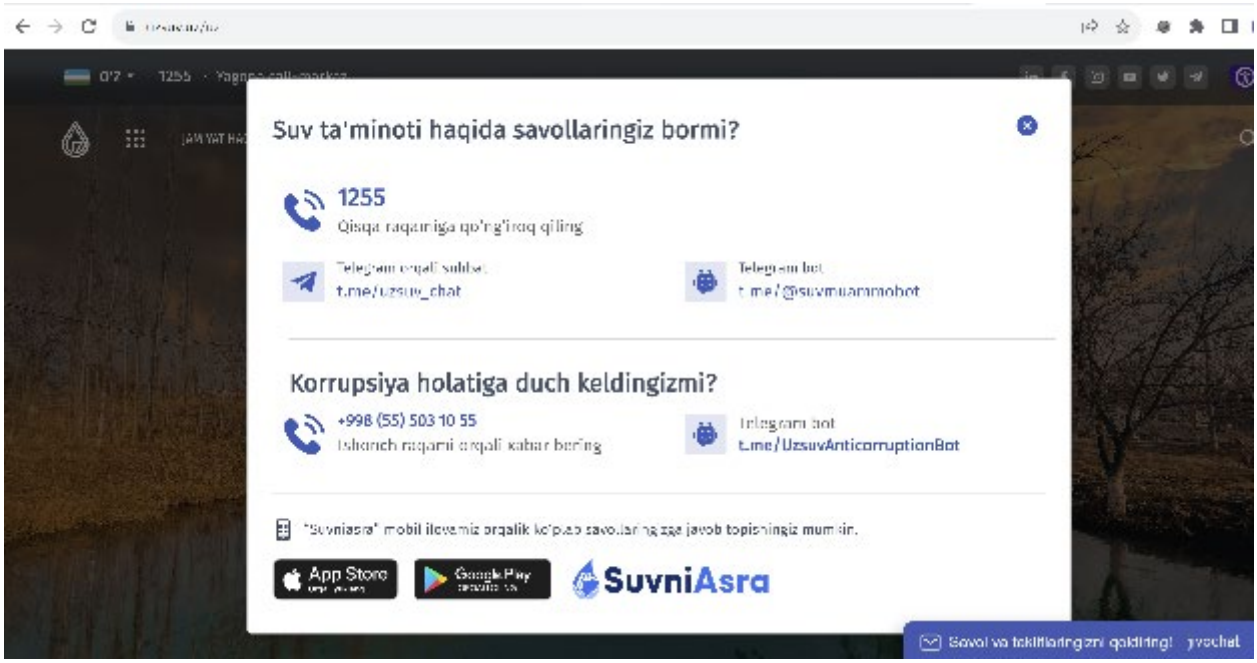


Figure 28: Screenshot from Uzsuvtaminot JSC website

6.7.2. GRM for Workers

PCU and PMC will establish an independent complaint handling centre with a locked "post box" and grievance forms in the construction sites to handle construction workers' grievances related to the contractor (wage, overtime pay, timely payment, accommodation, catering, drinking water, personal protection equipment (PPE), sanitation condition, medical services, etc.) The grievance box will be checked regularly by PMC and PCU. However, the workers can raise their complaints during the presence of PMC and PCU on the site or send their grievance over the telephone. If the complainant prefers a verbal grievance, the PMC and PCU personnel record and register it following the formal process.

The grievance form will be available to construction workers and project personnel in Uzbek, Russian, and other languages. Where the complainant is illiterate, the complaint can be made verbally to PCU and PMC personnel so that they will complete the grievance form on behalf of the grievant. The grievance form will include the complainant's contact details. However, the complainant can also raise a grievance anonymously.

PMC and PCU will take corresponding actions to resolve the grievance and provide the complainant with a proper corrective actions report. PMC and PCU will continue to monitor the situation until it is finally resolved. All complaints and corresponding grievance settlement reports will be kept in the PCU office in Tashkent and made available for review to the AIIB mission.

6.7.3. GRM on Gender Based Violence Grievances

Gender-based Violence (GBV) grievances such as sexual exploitation, abuse and harassment (SEAH) will be handled under a special protocol governed by the following principles:

- SEAH is not acceptable under any circumstance.
- Action will be taken on every allegation.
- Action will be fair, timely, and have due regard for procedural fairness.
- Above all else, SEAH survivors' needs, rights, and safety will be prioritised.

The complainant will be informed that the grievance will be treated confidentially and without reprisals. PCU and PMC will establish a locked "post box" and grievance forms in the construction sites and near the community centres to make available to raise compliant confidentially, anonymous, or non-anonymous complaints in writing, at their choice. The complaint can also be submitted by telephone (through the toll-free phone number provided by PCU and PMC) and electronically through email.

PMC and PCU will also dedicate a specific time to speak to the workers at the construction sites and residents of the project settlements on possible SEAH risks. Moreover, the PMC and PCU contact toll-free phone numbers will be made available at the community centres (makhalla committees) and construction sites, so any affected person can call to file an anonymous or non-anonymous complaint (at their discretion). The complainant will have the option to denounce a situation to any of the project representatives.

PCU and PMC will act as ethics agents in examining and screening complaints, and if needed, forwarding them to legal means to provide an appropriate response according to the complaint types and, finally, notifying the complainant about the actions taken on their complaint. Upon receiving such a sensitive complaint, PMC and PCU will immediately act to clarify the facts confidentially and safely. PMC and PCU will approach the judicial authorities for investigation and criminal proceedings if needed.

If acts of SEAH involve any project personnel, PCU and PMC will take action on a case-by-case basis. If it is proven that the acts were committed, PCU and PMC will be empowered to take the following measures:

- Immediate termination of the contractual relationship (for those under an agreement that does not grant them the status of staff member or another collaborative agreement) or suspend employment, depending on the severity of the grievance.
- Inclusion of a specific reference in AIIB and Uzsuvtaminot records to prevent persons subject to a sensitive complaint from applying for future offers and having other contractual relations with AIIB and Uzsuvtaminot when it is proven that they have participated in SEAH acts or have encouraged or tolerated such actions.
- PCU and PMC will provide information on medical and social services for dealing with sexual violence and, in the case of a non-anonymous complaint, encourage the victim to visit medical and social facilities to prevent any consequences of SEAH.
- Provision of report on preliminary investigation to the complainant confidentially, safely, without discrimination.
- Provision of report on criminal proceedings to the complainant confidentially, safely, without discrimination and avoid causing harm.
- Delivery of training on code of conduct in the populated area and workplace and training on GBV risks.
- PCU and PMC will continue to monitor the situation until it is finally resolved.

All complaints and corresponding grievance settlement reports will be kept in the PCU office in Tashkent and made available for review to the AIIB mission.

6.7.4. Court of Law

At any stage of the two-tire GRM process, if an issue is not resolved or the complainer is not satisfied with the decision, an aggrieved person may submit its grievance to a Court at his cost, where decisions will be made following applicable national legislation. Below is a screenshot of the government Single Web-based Complaint Management System of Uzbekistan.

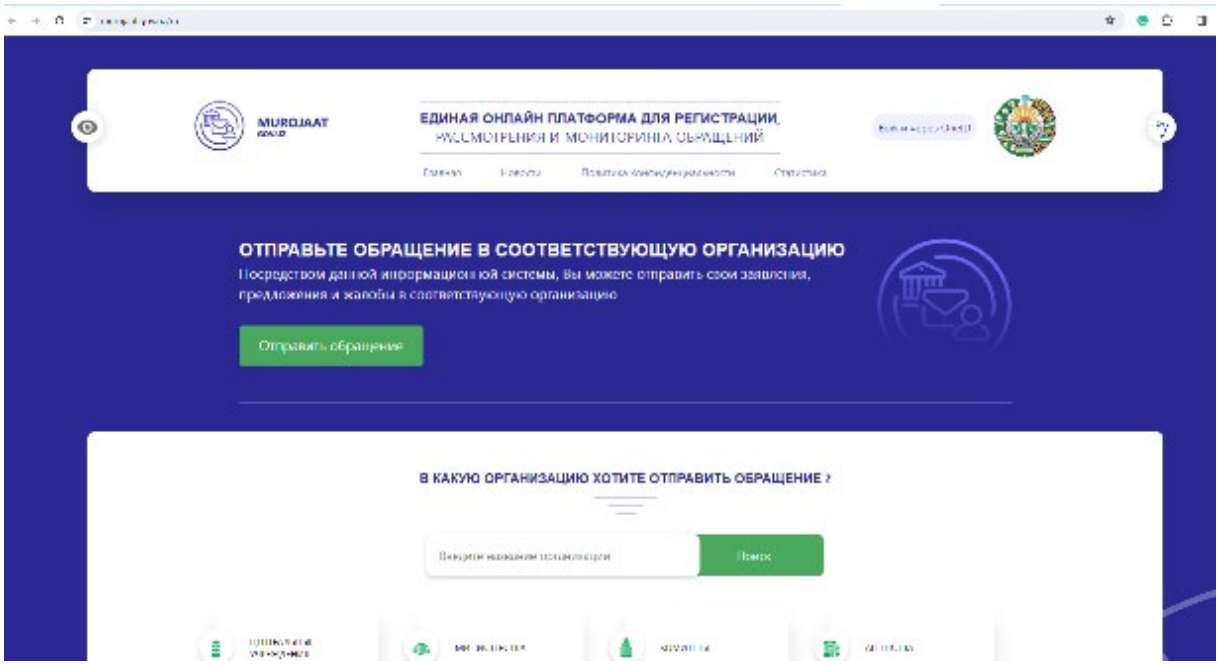


Figure 29: Web-based complaint form

(Source: Single web-based complaint management system of Uzbekistan[105])

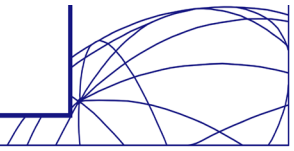
To file a complaint, the complainant should follow the following steps:

(1) Log in to this system using your digital signature
(2) Select category Headquarters
(3) Select General Prosecutor's Office
(4) Select Subordinate organisations
(5) Select Prosecutor's Office of Khorezm Province
(6) Enter the text of the complaint or appeal in the window
(7) Submit the compliant or request.

6.7.5. AIIB's Project-affected People's Mechanism

AIIB has established a Project-affected People's Mechanism (PPM) to provide an opportunity for an independent and impartial review of submissions from Project-affected people who believe they have been or are likely to be adversely affected by AIIB's failure to implement the ESP when the complaints cannot be addressed satisfactorily through Project-level GRM or AIIB Management's processes. AIIB Policy on the Project-affected People's Mechanism and Rules of Procedure of the PPM guide the PPM. The Complaints Resolution, Evaluation and Integrity Unit (CEIU) is responsible for the functioning of the PPM.

[105] https://murojaat.gov.uz/ru



The PPM's submission-handling functions include:

- Project Processing Queries

  A Project Processing Query (PPQ) is designed to enable a PAP to rapidly resolve their concerns about simple matters that arise during AIIB's environmental and social due diligence of a Project and do not require dispute resolution. The due diligence includes screening, categorisation, and assessment of the environmental or social impacts of the Project. PPQ can include inquiries about the consultation process related to a Project or requests to address environmental nuisances such as dust, noise, or mobility restrictions experienced during Project preparation.

- Requests for Dispute Resolution

  Requests for Dispute Resolution (RDR) allow the PPM to seek to facilitate and coordinate the resolution of a dispute that has arisen over measures required to mitigate known and quantifiable potential or actual material adverse environment and social impacts that occur during AIIB's due diligence of a Project or Project implementation. The parties to the dispute typically include the Client and the Requestors. Still, they may also involve Management and contractors, or other parties involved in the Project processing or implementation. This process aims to reach a time-bound and monitorable dispute resolution agreement between the parties concerned on actions to mitigate these impacts. Under this process, the PPM explores the PAP's mutually acceptable dispute resolution methods. This process may include consultative dialogue, information sharing, joint fact-finding, and creating a mediation mechanism or other methods.

- Requests for Compliance Review

The process under a Request for Compliance Review (RCR) involves an investigation by the PPM of allegations by the PAPs that AIIB has failed to comply with its obligations under the ESP in its environmental and social due diligence of a Project during Project preparation or its oversight of the Project during implementation, thereby causing or being likely to cause material adverse ecological or social impacts on the Project-affected people. If the allegations are substantiated, the process includes reviewing any action plan proposed by Management to address these impacts.

7. Consultation and Disclosure

7.1. Objectives of Consultations

Stakeholder engagement is critical to the overall Project goals as the role of key Project stakeholders is important to the successful project design and implementation and remains essential over the entire life of the Project. Initiating the engagement process in the early phases of the planned activities helps ensure timely public access to all relevant information and provides the stakeholders with an opportunity to input into the project design and the assessment of impacts.

The objectives of the stakeholder engagement process are:

- To identify the roles and responsibilities of all stakeholders and ensure their participation in the complete project cycle.
- To establish a systematic approach to stakeholder engagement that will help the Project identify stakeholders and build and maintain a constructive relationship with them in particular project-affected areas.
- To assess the level of stakeholder interest and support for the Project and to enable stakeholders' views to be considered in project design and implementation.
- To promote and provide means for effective and inclusive engagement with Project-Affected Persons throughout the project life on issues that could potentially affect them.
- To ensure that appropriate project information on E&S risks and impacts is disclosed to stakeholders in a timely, understandable, accessible, and fair manner and format with special consideration for the disadvantaged or vulnerable groups.
- To provide project-affected persons with accessible and inclusive means to raise issues and grievances and allow the project to manage such grievances.
- To devise a plan of action that clearly identifies the means and frequency of engagement of each stakeholder.
- To allocate budgetary and other resources in the project design, implementation, monitoring, and evaluation for stakeholder engagement and participation.

A structured stakeholder engagement process provides an opportunity for all-inclusive approach in project design, planning, implementation, and monitoring and ensures a meaningful and broad stakeholder engagement guided by the AIIB Environmental and Social Framework.

7.2. Stakeholder Identification

Stakeholders are persons or groups who are directly or indirectly affected by a project (the Project Affected Persons, PAPs), as well as those who may have interests in a project and/or the ability to influence its outcome, either positively or negatively (the interested parties). More precisely, the affected communities are communities of the local population within the project's area of influence who are likely to be adversely affected by the project.

Vulnerable groups are those individuals or groups who may be directly and differentially or disproportionately affected by the Project's negative impacts and/or less able to participate in and benefit from the Project's positive impacts because of their disadvantaged or vulnerable status. This status may stem from ethnicity, property, level of income, economic situation, gender, language, religion, national or social origin, age, culture, literacy, physical or mental disability, and dependence on unique natural resources.

The table below outlines the stakeholder groups and potential key stakeholders, as well as their specific relevance to or interest in the Project that have been identified throughout the feasibility stage and the ESIA stage.

Table 65: Summary of Key Stakeholders

Stakeholder Group	Stakeholders	Specific Interests and Relation to the Project
Project-affected Parties (PAPs)	▪ Individual landlords and legal entities owning the land to be acquired by the Project ▪ Local residents whose properties/land are located in the vicinity of the Project sites ▪ Local businesses located on the land to be acquired by the Project	▪ Potential impacts associated with land acquisition ▪ Potential perceived impacts of the Project (dust, noise, light, visual, load on communal infrastructure) ▪ Potential opportunities (employment, community development)
Local Communities	▪ Residents of Gurlen, Khanka, Shavat, and Urgench districts under the water supply component ▪ Residents of Urgench, Shavat, Khazarasp, Yangiarik, and Yangibazar districts under the wastewater component	▪ Potential perceived impacts of the Project (dust, noise, light, visual, load on communal infrastructure) ▪ Potential opportunities (employment, community development)
Vulnerable Groups	▪ Children and young persons ▪ Single retired persons ▪ Elderly persons (over 65 years old) ▪ Families who have lost their primary income earner (mostly male) ▪ Single parent families ▪ Low-income families ▪ Families receiving financial assistance for children under two years old	▪ Potential impacts associated with land acquisition ▪ Potential perceived impacts of the Project (dust, noise, light, visual, load on communal infrastructure) ▪ Potential opportunities (employment, community development)

Stakeholder Group	Stakeholders	Specific Interests and Relation to the Project
	▪ Families receiving financial assistance for children under 14 years old ▪ Families with many children (four or more children under 18 years old) ▪ People with disabilities ▪ Women classified by rural women's committees as those being "in difficult circumstances" ▪ Mentally ill	
Institutional-based Stakeholders (national level)	▪ Agency for Strategic Reforms	▪ Strategic economic development oversight ▪ Advice regarding specific methods for stakeholder engagement and information disclosure
Institutional-based Stakeholders (regional level)	▪ Khorezm Province Administration: head of administration and its deputies, head of construction department, head of investment department, etc. ▪ Khorezm Province Public Health and Wellbeing Service ▪ Khorezm Province Department of the Ministry of Ecology, Environmental Protection, and Climate Change ▪ Khorezm Province Labour Department ▪ Khorezm Province Department of the Ministry of Economy and Finance ▪ Khorezm Province Department of the Cultural Heritage Agency	▪ Governance of the project Area ▪ Issuance of permits and licences ▪ Coordination of project activities ▪ E&S monitoring ▪ Management of cumulative impacts ▪ Emergency preparedness and coordination ▪ Sanitation and hygiene surveillance
Institutional-based Stakeholders (local level)	▪ Local authorities at the district level ▪ Public organisations providing educational and health care services (schools, kindergartens, hospitals, outpatients, etc.)	▪ Coordination of the project activities ▪ Ensuring that the stakeholders have access to the information on the project ▪ Emergency preparedness ▪ Permitting, management of environmental, social, occupational, and community health and safety risks and impacts in the project area ▪ Management of environmental and social impacts ▪ Cooperation to maximise the project benefits and planning for creating of jobs and business opportunities for the local population
Community representatives	▪ Chairmen of local communities ▪ Heads of community-based women committee ▪ Community youth leaders ▪ District Governor's (khokim) assistants in community councils	▪ Beneficiaries of investments ▪ Community governance ▪ Community health and safety management ▪ Social support ▪ Assistance with employment ▪ Domestic conflict resolution ▪ Social mobilisation for small community improvement projects

Stakeholder Group	Stakeholders	Specific Interests and Relation to the Project
Project Owner	▪ Khorezm Suvtaminot LLC and Uzsuvtaminot JSC, including Project Coordination Unit (PCU) ▪ Project Management Consultant (PMC) ▪ AIIB as a lender	▪ Water and wastewater management ▪ Project coordination and management ▪ Project monitoring and evaluation ▪ Project grievance redress
Project personnel	▪ Contracted employees, including those hired locally	▪ Project execution
Local businesses, other related industrial projects, contractors, and suppliers	▪ Various local companies and projects as well as potential contractors and suppliers of goods and services	▪ Beneficiaries of investments ▪ Supply of local goods and services related to the project ▪ Coordination of infrastructure services ▪ Management of cumulative impacts ▪ Supplies of goods and services to the project
Local Non-Governmental Organisations	▪ Uzbek Ecological Party, Khorezm Province Office ▪ Khorezm Province Water Users Association ▪ Khorezm Province Women Committee ▪ Other NGOs	▪ Potential interest in the Project regarding issues such as biodiversity or effects on vulnerable groups
Media	▪ Mass media including digital social media	▪ Project information sharing with stakeholders

7.3. Consultation during Project Preparation

Intensive engagement with local authorities and communities using multiple approaches and methods has been ongoing since early stages of the Project. Those consultations included meetings and semi-structured interviews with local authorities (district *khokimiyats*) and relevant institutional stakeholders, key informant interviews, focus group discussions and individual interviews with residents.

7.3.1. Consultation with Institutional Stakeholders

Consultations with local authorities and relevant organizations were held in May, November, and December 2023 with the support of PCU and a written notification sent to the district khokimiyats prior to the meetings. The consultation process aimed to inform stakeholders about the planned activities and identify associated issues, concerns, and expectations. Using semi-structured interview, the study team collected and updated information on the social and economic conditions of the communities and districts. The project stakeholders also shared their views and concerns on the planned activities. The public consultations are also intended to provide better transparency and accountability in decision-making and creating a sense of ownership with the stakeholders. The following consultations were carried out by the study team:

- Consultation meetings at the district- and community levels were participated by the representatives of district khokimiyats, departments of health, gas supply, and primary and secondary education, and district departments of Khorezm Suvtaminot, women's committee, youth committee, and others. Consultations were intended to update information on the socio-economic conditions of the area and the key concerns and perceptions of local authorities about the proposed project activities.
- Consultations on the local sanitary and hygienic situation were held with the representatives of the sanitary and hygienic department of Khorezm Province Public Health and Wellbeing Service.
- Consultations on the ecological situation in the province and requirements set to the preparation national environmental assessment were held with the representatives of Khorezm Province Environmental Committee.
- Consultations on the project design with water utility personnel were intended to determine specific technical details impacting the project, including the following:
  - Existing conditions of the water and wastewater infrastructure.
  - Quality of the raw water in the drinking water sources (sampling and laboratory tests).
  - Quality of the treated water at the connected households.
  - Population growth and forecasted water consumption and volume of wastewater to be treated.
  - Land availability and footprint required for the construction of new WWTPs.
  - Design criteria for construction of WDUs, pumping stations, water mains, and networks.
  - Design criteria for construction of WWTPs, pumping stations, sewers, and networks.
  - Other conditions.

The table below provides overview of the conducted consultation meetings and their participants.

Table 66: Participants of Institutional Stakeholder Consultations

Date	Location	Representatives	Participants
14.11.2023 19.12.2023	Khorezm Province Department of Environmental Committee	▪ Director of Khorezm Province State Environmental Expertise Division ▪ Officer of State Environmental Expertise Division	2
16.11.2023 19.12.2023	Khorezm Province Public Health Service	▪ Deputy Chief Medical Officer of Sanitary and Hygienic Surveillance Department ▪ Head of Commercial Department for Laboratory ▪ Medical Laboratory Scientist/ Public Health Doctor ▪ Medical Laboratory Scientist/ Public Health Doctor	4

Date	Location	Representatives	Participants
16.05.2023 – 23.05.2023, 15.11.2023 - 17.11.2023, 19.12.2023 – 22.12.2023	Community leaders and Women's Committees' representatives	▪ Pakhlavon Makhmud Community ▪ Kirtepa Community ▪ Istiklol Community ▪ Munis Khorazmyi Community ▪ Oybek Community ▪ Yangi Turmush Community ▪ Fidoilar Community ▪ Nurobod Community ▪ Pakhtakor Community ▪ Gulbog Community ▪ Sardorlar Community ▪ Buston Community ▪ Katli Community ▪ Namuna Community ▪ Uzumzor Community ▪ Oltin Kum Community ▪ Margubat Community ▪ Marifat Community ▪ Eshimjiron Community ▪ Khairabod Community ▪ Kenagas Community ▪ Yovgir Community ▪ Royat Community ▪ Yangiarik Community	35
19.12.2023 – 22.12.2023	Medical Facilities	▪ Deputy Chief Doctor, Yangibazar District Central Hospital ▪ Head Nurse, Khanka District Multidiscipline Outpatient ▪ Head Nurse, Urgench District Hospital	3
19.12.2023 – 22.12.2023	Educational Organizations	▪ Deputy Director, Yangibazar District Secondary School No. 33 ▪ Director, Shavat District Pre-school Organization No.1 ▪ Director, Khazarasp District Secondary School No. 23 ▪ Gurlen District Secondary School No. 21 ▪ Education Coordinator, Urgench District Pre-school Organization No.4 ▪ Education Coordinator, Khanka District Pre-school Organization No.35	6
16.05.2023 – 23.05.2023, 15.11.2023 - 17.11.2023	District Department of Khorezm Suvtaminot	▪ Chief Engineer of Khorezm Suvtaminot ▪ Head of the Urgench District Department of Khorezm Suvtaminot ▪ Deputy Head of the Urgench District Department of Khorezm Suvtaminot ▪ Head of the Shavat District Department of Khorezm Suvtaminot ▪ Head of the Gurlen District Department of Khorezm Suvtaminot ▪ Water Supply Engineer and Metrology Engineer, Khanka District Department of Khorezm Suvtaminot	7

The consultation meetings were carried out with 56 representatives of government institutions including 25 women and 31 men. Comments and key concerns emerging from institutional stakeholder consultations are summarized in the table below.

Table 67: Consultations with institutional stakeholders

No.	Stakeholder	Stakeholders Comments	Response of the Project Team
1.	Khorezm Province Department of Environmental Committee	Stakeholders asked why the sewerage component does not cover the same area as the water supply component.	According to the water utility, programs for developing water supply and sewerage systems are being implemented at the expense of the GoU and some international financial institutions, including the EBRD, ADB, and AIIB. The project scope is still being agreed upon with Uzsuvtaminot JSC and Khorezm Suvtaminot LLC.
2.		Stakeholders asked about water sources for the water supply component interventions and whether the project is planned to construct another water treatment plant.	Urgench WTP and Pitnak WTP will be the water sources for the project. These WTPs are being modernized under the EBRD project.
3.		Stakeholders commented that according to Regulation 541, national environmental assessment reports for proposed activities must be prepared for each site. Considering that the project components' exact location has not yet been clarified, the ecological assessment reports should be prepared and submitted separately for drinking water and wastewater components and each project district where project activities are planned.	Noted for the preparation of national environmental impact assessment reports within this ESIA.
4.		Stakeholders also noted that during the detailed design, the environmental assessment reports should be prepared and submitted separately for each project facility (e.g., WDU or WWTP).	Noted for detailed design phase.
5.		Stakeholders informed about several water supply and sewerage projects implemented by IFIs in Khorezm Province. The proposed project's design and other technical parameters shall be coordinated so that the scope of work is not repeated or overlapped.	Noted for impact assessment and proposed measures.
6.		Stakeholders asked about the expected start of the physical implementation of the project and the issuance of the corresponding GoU's resolution on the project.	The project implementation will start upon the stakeholders' approval of the priority and long-term investment programs.
7.	Khorezm Province Public Health Service	Stakeholders are interested in what tests and measurements will be carried out for the project.	As part of the ESIA, noise level measurements and ambient air quality tests will also be carried out in the project districts to identify baseline conditions.
8.		Stakeholders were concerned about what organization would conduct the	These tests could be done with the help of public health specialists and a

No.	Stakeholder	Stakeholders Comments	Response of the Project Team
		surveys and noted that it should be a licensed laboratory following applicable legislation.	laboratory having the required accreditation.
9.		Stakeholders asked where the surveys were conducted and whether the specific locations of the project components were known.	Since the project is at the feasibility study stage, the specific locations of the project components have not yet been completely clarified, but their approximate location is available. Baseline air quality and acoustic environment measurements are best taken at sensitive receptor sites, such as schools and healthcare facilities.
10.	Local authorities	Stakeholders showed their high appreciation for the project consultation.	Noted for future actions.
11.		Stakeholders noted that the local authorities should be keep informed about any project design updates including the start of actual project physical works.	
12.		Stakeholders asked to foresee measures to ensure community health and safety due to labor influx.	Noted for impact assessment and proposed measures.
13.		Stakeholders also asked whether the project would create jobs for the residents. They also requested to prioritize the local recruitment for the project activities.	The stakeholders were informed about potential jobs to be created by the project during the project construction and operation phases. Local recruitment will be prioritized during impact assessment and proposed measures.
14.		Stakeholders mentioned that women will not work among the men during construction, so the project shall take into account the cultural and social roots of the local population. However, the project may support creating livelihood for women with "women's jobs" and provision of vocational training.	Noted for future development projects.
15.		Stakeholders asked what organization would be responsible for the construction and supervision of the project components. And what organization will operate new facilities, specifically WWTPs?	▪ The project owner will be Khorezm Suvtaminot LLC and Uzsuvtaminot JSC. ▪ The project will be managed by the PCU and supervised by PMC. ▪ The contractor will be selected through competitive bidding. ▪ The new facilities will be owned and operated by Khorezm Suvtaminot LLC.
16.		Stakeholders were concerned whether the project will destroy the recently paved rural roads.	The stakeholders were informed that the project foresees restoration of any project destroyed by the project to its original or better condition.

No.	Stakeholder	Stakeholders Comments	Response of the Project Team
17.	Women's committee at the district and community level	Stakeholders showed their high appreciation for the project consultation and suggested creating livelihood for women in the project area.	The stakeholders were informed about potential jobs to be created by the project during the project construction and operation phases.
18.		At the same time, they also noted that women in the region work only in "women's jobs" and asked if the project could create jobs for women.	Noted for impact assessment and proposed measures.

(Source: ESIA)

7.3.2. Consultation with Community Stakeholders

Community consultations were carried out in December 2023 by a study team in Khorezm Province by applying different engagement methods including FGDs, key informant interviews, and workshops. Consultations were conducted in seven project districts and 14 project communities. The consultations prioritized female residents' participation. Female participation in the consultations made up 72% (89), and male participants comprised 28% (35). However, the consultations also ensured the involvement of people of various social segments with their possible concerns associated with the project.

Table 68: Participants of Community Consultations

No.	District	Community	Meeting place	Date	Participants	
					male	female
1.	Urgench	Yoshlik	District hospital, residents	19.12.2023, 20.12.2023	2	7
2.		Oltinkul	Pre-schools organization no.4		2	9
3.	Khanka	Yangilanish	District outpatient, residents	19.12.2023, 20.12.2023	1	9
4.		Vantanparvar	Pre-school organization no. 35		1	9
5.	Yangiarik	Urgench	Community committee, residents	19.12.2023, 20.12.2023	6	3
6.	Yangibazar	Navbahor	Central district hospital, residents	20.12.2023, 21.12.2023	5	9
7.		Dustlik	Secondary school no. 33			64
9.	Gurlen	Yangiasr	Musical school	20.12.2023, 21.12.2023	3	6
10.		Sovunchi	Secondary school no. 21		2	5
11.	Shavat	Royat	Community committee, residents	21.12.2023, 22.12.2023	1	5
12.		Turkiston	Pre-school organization no. 31		1	9
13.	Khazarasp	Pakhlavon	Community committee, residents	21.12.2023, 22.12.2023	3	6
14.		Ziyolilar	Secondary school no. 23		2	8

No.	District	Community	Meeting place	Date	Participants	
					male	female
		Total:	---	---	35	89
					28%	72%

During consultations, the participants were informed about the project scope and associated activities. The presentations were followed by discussions with meetings and interviews' participants. Summary of the comments and key concerns emerging from community consultations are provided in table below.

Table 69: Comments and Suggestions of community stakeholders

No.	Stakeholders Comments	Response of the Project Team
1.	Residents asked about the start of the physical implementation of the project.	The project implementation will start upon the stakeholders' approval of the proposed priority and long-term investment programs.
2.	Residents asked if they understood correctly that they would have safe tap water due to this project.	The project water supply component will provide safe drinking water to the project communities.
3.	Residents were concerned about the water quality to be supplied by the project components, and whether the water would be filtered before being delivered to the distribution network, and if the project foresees the installation of desalination plants as private traders do.	The project water supply component will provide safe drinking water to the project communities. The raw water will be treated on the Pitnak and Urgench WTPs modernized within the EBRD project.
4.	Stakeholders were concerned whether all villages were included in the water supply component.	List of the project communities and villages was elaborated by the Khorezm Suvtaminot LLC.
5.	Residents requested the wastewater component be implemented across the district and not only in the district center.	Wastewater system construction is considered by several financing including GoU funds, AIIB project, and other IFIs. This project is planned to cover the district centers and construction of four WWTPs.
6.	Residents asked whether the water tariff would be increased upon project implementation and whether it would differ from other Khorezm province areas.	The water tariff will be the same throughout the Khorezm region despite the project's implementation, the remoteness of the villages, and other parameters or reasons.
7.	Residents asked whether tap water would be as clean as bottled water.	The project water supply component will provide safe and clean drinking water to the project communities. The raw water will be treated on the Pitnak and Urgench WTPs modernized within the EBRD project and distribution network's pipes will be replaced with new ones within this project.
8.	Residents noted that the tap water is not clean and requires sedimentation before consumption; they were concerned about whether the project considered technology to remove these solids before supply into the distribution network to ensure delivery of clean water.	The raw water will be treated on the Pitnak and Urgench WTPs modernized within the EBRD project and distribution network's pipes will be replaced with new ones within this project.

No.	Stakeholders Comments	Response of the Project Team
9.	Residents noted that new water pipes were laid last year, but there were no connections; will these pipes be changed when residents connect to the water supply.	No, new pipes will not be destroyed.
10.	Residents asked whether the project has a component for rural roads construction.	The project has no such component.
11.	Residents noted that they are connected to the water supply, but the tap water is unclean, and they asked whether the water main and network pipes will be changed to ensure clean tap water.	The project components include the replacement of pipes in water mains and networks to ensure the delivery of safe and clean drinking water to customers.
12.	Residents asked what the water quality would be and whether it would be the same as Tashkent water, i.e., not salty.	The project water supply component will provide safe drinking water to the project communities. The water will be treated on the Pitnak and Urgench WTPs modernized within the EBRD project. The project design foresees the installation of chlorination facilities for drinking water disinfection.
13.	Residents asked why tap water in Tashkent is available 24 hours a day and whether the project considered the same water availability for the Khorezm Province residents.	The project includes the replacement of the existing old pipes, the construction of new WDUs, and modernizing pumping stations for supplying water 24 hours a day in the project areas.
14.	Residents asked whether the project design included a desalination plant to reduce saltiness in the drinking water.	No desalination plants are foreseen in the project design. However, the water will be treated on the Pitnak and Urgench WTPs modernized within the EBRD project. These new facilities will ensure the provision of unsalted water.
15.	Residents asked how the wastewater will be treated.	For wastewater treatment, the project will build WWTPs with (i) primary treatment for eliminating large debris, (ii) biological treatment for removing soluble organic matter solids that escaped primary treatment and smaller suspended solids, and (iii) disinfection to ensure no pathogens in the effluent.

Some photographs of the consultation meetings and focus group discussions are provided in Appendix 5.

Since people with different levels of education and skills participate in the consultations and considering that not all people understand the technicalities of the project design, the study team prepared a brochure with brief information on the proposed project components. The residents appreciated the leaflet with a brief description of the project components.

The findings of the meetings, interviews, discussions, and observations, including the stakeholders' comments and concerns were considered and incorporated into the environmental and social management plan and GRM, where appropriate.

A detailed account of all stakeholder engagement meetings and consultations undertaken at the preparatory stage of the Project during the preparation of the Feasibility Study and the ESIA is provided in the Stakeholder Engagement Plan (SEP) for the Project.

7.4. Stakeholder Consultation during Project Implementation

The stakeholder consultation will continue throughout the project implementation. The consultation process will be carried out regularly with the stakeholders, including but not limited to the concerned government departments, local administration, and community representatives from the project area, specifically focusing on women's empowerment. The three main steps to be adopted for stakeholder engagement are:

- Identification of stakeholders. For each subproject, the affected people will be identified along with the relevant authorities and line department having interests in a project and/or the ability to influence its outcome, either positively or negatively.
- Identification of methodology for effective stakeholder engagement. For each subproject, the Detailed Design Consultant will come up with a subproject specific Stakeholder Engagement Plan based on the generic SEP in this ESMPF.
- SEP implementation in a timely manner. Stakeholders will be informed about the subproject and its activities. During the initial engagements, an awareness component will be carried out as part of the stakeholder consultation process. The various stakeholders' views, comments, and concerns will be entertained and addressed. This process will also establish the project links with relevant authorities.

Stakeholders will be informed about the subproject and the activities that will take place as part of the subproject. An awareness component will be carried out during the initial engagements including mass media campaign.

The consultations and community engagement will be to support and facilitate the project and preparation and implementation of ESIA, ESMP, and LARP/RP/LRP, maintain friendly relationships with the communities, reduce conflicts and project opposition, and effectively address grievances or E&S issues and incorporate relevant considerations into the subproject design. The proceedings and outcomes of such stakeholder engagements will be recorded and considered during the implementation of ESIAs and ESMPs.

Meaningful consultations will form an important part of the stakeholder engagement process. The relevant project consultants and project owners will discuss draft ESIA, ESMP, and LARP/RP/LRP with project-affected people, community leaders, and

representative of institutional stakeholders. The project consultants will engage subproject affected people in subproject planning, implementation, and monitoring. All subprojects will maintain a grievance and redress mechanism to uptake any complaints and issues during their implementation. Meaningful consultation will:

- be started early in the preparation stage of the subproject and is carried out on an ongoing basis throughout lifecycle
- ensure that all parties have a voice in consultation, including province and district-levels authorities, the private sector, nongovernmental organizations and affected people
- provide additional support as needed to ensure participation of women, senior adults, young, people with disability, and other vulnerable groups
- provide timely disclosure of relevant and adequate information that is understandable and readily accessible to the people affected
- be undertaken in an atmosphere free of intimidation or coercion.

The consultation and participation framework during the project implementation is provided in the table below.

Table 70: Consultation and Participation Framework during Project Implementation

Engagement Stage	Target Stakeholders	Engagement Activities	Engagement Methods	Location	Timing	Responsibility
Stakeholder consultation during preparation of subproject ESIA, ESMP, and LARP/RP/LRP	▪ Subproject communities ▪ Institutional stakeholders at the province and district levels ▪ Water utility ▪ PCU	Sharing and discussing the following information: ▪ Subproject scope and rationale ▪ ESIA, ESMP, and LARP/RP/LRP ▪ GRM types, process, and GRC composition Gathering socio-economic data on the subproject area, including land use, infrastructure and public services, health care and education, livelihoods and employment, cultural heritage sites, physical and biological environment, public health state in the subproject area, etc.	▪ Public meetings ▪ Separate meetings for women and representatives of vulnerable groups ▪ Mass/social media communication ▪ Focus group discussion ▪ Key informant interview ▪ Grievance mechanism ▪ Routine interactions	▪ Institutions of the province and subproject district levels ▪ Subproject communities ▪ Places convenient for stakeholders	During preparation of the subproject ESIA, ESMP, and LARP/RP/LRP	PCU, Detailed Design Consultant
Public awareness and scoping sessions to share the ESMP and LARP/RP/LRP	▪ General public ▪ PAPs ▪ Residents of subproject communities ▪ Institutional stakeholders at the province and district levels ▪ Water utility ▪ PCU	Sharing and discussing the following information: ▪ ESMP ▪ LARP/RP/LRP ▪ Land acquisition process, eligibility, and entitlement ▪ Resettlement and livelihood restoration options ▪ GRM	▪ Consultation meetings ▪ Mass/social media communication ▪ Brochures, posters, flyers, Information boards at the subproject area ▪ GRM	▪ Institutions of the province and subproject district levels ▪ Subproject communities ▪ Places convenient for stakeholders	During preparation and finalization of the subproject ESMP and LARP/RP/LRP	PCU, Detailed Design Consultant
Establishment of GRM and GRCs	▪ District authorities ▪ Subproject communities	▪ Sharing information on GRM and GRCs	▪ Mass/social media communication	▪ "Makhalla committee" of	Before commencement of	PMC, PCU

Engagement Stage	Target Stakeholders	Engagement Activities	Engagement Methods	Location	Timing	Responsibility
	▪ Water utility ▪ PCU	▪ Placing information on GRCs and GRM on the information board of the "makhalla committee" and project site(s)	▪ Brochures, posters, flyers, Information boards at the subproject area ▪ GRM	the project communities ▪ Mass/social media communication ▪ Notification of district authorities	the subproject activities	
Consultations during implementation of subproject ESMP and LARP/RP/LRP	▪ District authorities and relevant line departments (e.g., building, environment, public health departments, etc.) ▪ Subproject communities ▪ Water utility ▪ PCU ▪ AIIB	▪ Sharing information on the subproject activities ▪ GRM and grievance redressal ▪ Discussing outstanding E&S concerns and ways to address them ▪ Reporting to water utility, PCU, and AIIB	▪ Consultation meetings ▪ Placing key information on the project in the "makhalla committees" and information boards ▪ Reporting	▪ Subproject communities ▪ Places convenient for stakeholders ▪ Reporting ▪ Websites of water utility, Uzsuvtaminot JSC, and AIIB	During implementation of subproject: ▪ Quarterly engagement with the project communities ▪ Grievance redressal as complaint arrived ▪ Reporting to AIIB on semi-annual basis ▪ Reporting to line departments or district authorities, as required	PMC, PCU
Consultations during monitoring	▪ Subproject communities ▪ Water utility ▪ PCU ▪ AIIB	Sharing information on: ▪ E&S monitoring, audit, and site inspection findings ▪ Compliance monitoring findings ▪ Reporting to water utility, PCU, and AIIB	▪ Consultation meetings with project communities ▪ Reporting to water utility, PCU, AIIB	▪ Places convenient for community stakeholders ▪ Websites of water utility, Uzsuvtaminot JSC, and AIIB	▪ Quarterly engagement with the project communities ▪ Reporting	PMC, PCU

Engagement Stage	Target Stakeholders	Engagement Activities	Engagement Methods	Location	Timing	Responsibility
Monthly meetings at subproject sites	▪ Subproject communities ▪ Water utility ▪ PCU ▪ Contractor	Sharing information on: ▪ Subproject progress ▪ Supervision findings ▪ Grievance redressal ▪ E&S issues and mitigation measures ▪ Job opportunities for residents in the contractor team	▪ Consultation meetings with project communities ▪ Reporting to water utility, PCU, AIIB	▪ Subproject communities ▪ Subproject sites	Monthly, during implementation of subproject	PMC, PCU, contractor
Consultations upon completion of the subproject main activities	▪ District authorities and relevant line departments (e.g., building, environment, public health departments, etc.) ▪ Subproject communities ▪ Water utility ▪ PCU	Sharing information on: ▪ Scope of work on reinstatement of damaged infrastructure due to the subproject ▪ Grievance redressal ▪ E&S issues and mitigation measures ▪ Job opportunities at the constructed facilities	Consultation meetings with project communities, water utility, and local authorities	▪ Places convenient for stakeholders ▪ Sites of damaged public infrastructure	Before commissioning the project components to water utility	PMC, PCU, contractor, water utility

7.5. Information Disclosure

The AIIB EPS requires the borrowers to provide relevant E&S assessment information in a timely manner, in an accessible place and in a form and language(s) understandable to the PAPs and other key stakeholders. As part of information disclosure, the Project ESIA report in a language accessible to the local communities will be published on the AIIB website.

The ESMPF in English will be published on the AIIB website. The summary of ESMPF will be translated into Uzbek, and the ESMPF itself will be translated into Russian and shared on both the Uzsuvtaminot JSC and AIIB websites. Additionally, the plan will be provided to the communities affected by the project.

The AIIB-approved subproject-specific ESIAs, ESMPs, and LARP/RP/LRPs will be translated into local languages and disclosed similarly.

8. Resettlement Planning

8.1. RPF Objective

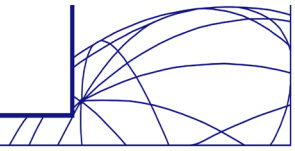
The purpose of RPF is to provide a set of principles, procedures and guidelines for PCU, to be applied to the subprojects requiring land acquisition and resettlement. It is a framework to guide the preparation of an RP in compliance with the requirements specified in the AIIB SS2 and applicable legislation of Uzbekistan. The key objective of the RPF is to establish resettlement principles, organisational arrangements, funding mechanisms, eligible criteria, entitlements matrix, feedback, and a GRM, and monitoring and evaluation process for the PAPs who may be identified during the project implementation.

The RPF also establishes a framework for assessing concerns of the PAPs who may be subject to loss of livelihoods, assets, and well-being because of the Project. The AIIB's ESP (ESS2) is triggered when the Project would result in people losing land, other assets, or access to productive resources, which may disrupt or cause loss of livelihood (i.e., property and assets), well-being, and other entitlements.

The RPF details the instruments to be prepared and the measures to be taken during specific stages of project detailed design and implementation. The framework sets the guidelines for determining compensation eligibility and describes what that compensation might entail.

The specific RPF scope will:

- Determine the eligibility and entitlements of the possible PAPs through an entitlement matrix. This includes the process of screening and categorising the land acquisition and resettlement impacts, identifying the requirements for assessment and planning, ensuring meaningful consultation with PAPs and other stakeholders, and disclosing relevant information.
- Establish the principles and objectives that will govern the preparation and implementation of resettlement plans following AIIB policy requirements. This involves comparing applicable national laws and AIIB regulations and identifying measures to address any gaps.
- Provide guidelines for preparing social due diligence, social impact assessment, and resettlement plans for the PAPs to improve or at least retain their living standards in the post-acquisition and resettlement period.
- Specify the compensation and assistance entitlements for PAPs for establishing their livelihoods.



- Set out a communication mechanism to establish harmonious relationship between the project owners and the PAPs.
- Specify implementation procedures, including the budget, institutional arrangements, and capacity development requirements.
- Specify monitoring and reporting requirements.

8.2. AIIB and Uzbekistan's Policies Comparison and Reconciliation

AIIB ESF and applicable Uzbek regulatory framework's comparison and reconciliation are provided in the table below.

Table 71: Policies comparison and reconciliation

Provision	AIIB	Uzbek regulation	Harmonised Framework
Screening and Categorisation	The Bank requires screening and categorising each proposed project to determine the nature and level of the necessary social review, type of information disclosure, and stakeholder engagement. The Bank categorises each project for social impacts (see Section 4.1.3)	The Uzbekistan legislation foresees no screening and categorisation for social impacts and risks.	The Project will apply the Bank's requirement for screening and categorising each sub-project.
Resettlement Plan (RP), Abbreviated Resettlement Plan (ARP), or Livelihood Restoration Plan (LRP), Resettlement Planning Framework (RPF)	The Bank requires preparation of the RP, ARP, LRP, or RPF under each project, considering its impact: (a) If the project impacts less than 200 people, the client prepares ARP or LRP. (b) if the project is likely to involve resettlement but consists of activities for which details are not identified, the client prepares RPF. (c) In all other cases, the client prepares RP.	The Uzbekistan legislation foresees no RP, ARP, LRP, RPF, or similar plan preparation. However, the law provides for (Section 4.2.6) establishing a commission under the municipality (khokimiyat) to oversee the land acquisition, the provision of compensation, and related issues. Resolution No. PP-3857, specifies that authorized state agencies are responsible for compensation due to the seizure of land, demolition of houses, buildings, structures, or damage of plantings as part of the project implementation if provided for in the	The Project will apply the Bank's requirement to prepare the RP, ARP, LRP, or RPF, as needed, for the Project components, as specified in ESS2 and in coordination with the Bank.

Provision	AIIB	Uzbek regulation	Harmonised Framework
		agreement with International Financial Institutions and Foreign Government Financial Organizations.	
Consultations	The Bank requires conducting meaningful consultation with stakeholders during the Project's preparation and implementation. Consultation is needed for the projects of categories A and B.	Applicable Uzbekistan's regulations require consultations with project-affected people if there is any land acquisition and resettlement.	Reconciliation is not required.
Grievance Redress Mechanism (GRM)	The Bank requires: (i) establishing a GRM to receive and facilitate the resolution of the concerns of people who believe they have been adversely affected by the Project's social impacts. (ii) inform PAPs of GRM availability.	No direct law in Uzbekistan's legislation would require establishing a GRM for a specific project. However, a Law on the Appeal of Individuals and Legal Entities (see Section 4.2.10) provides that an affected person or organisation can file any complaint online or by regular mail or write a complaint in place.	The Project will apply the Bank's requirement to establish the Project GRM along with the national complaint management system available to the public.
Social Support	The Bank requires to support the social and cultural institutions of the project-affected people through capacity building and consultations.	The Uzbekistan legislation foresees no support the social and cultural institutions of the project-affected people.	The Project will apply the Bank's requirement to support the social and cultural institutions of the project-affected people through capacity building and consultations.
Livelihood restoration	The Bank requires improvement or restoration the livelihoods of PAPs with lefal title, including: (i) cash compensation at replacement value for land, including transitional costs, when the loss of land does not undermine livelihoods. (ii) prompt replacement of assets with assets	Several regulations (Section 4.2) (i) provide for compensation to affected persons with legal title for loss of land and other assets in the form of land replacement or cash compensation at market prices, (ii) specify options for compensating the affected people for their buildings, plants, land, and transportation costs, (ii) foresee the provision of temporary housing when the	Reconciliation is not required for PAPs with legal title. With regard to affected persons without title or legal rights, the project will apply the Bank's requirement on provision of resettlement assistance and compensation for loss of nonland assets.

Provision	AIIB	Uzbek regulation	Harmonised Framework
	of equal or higher value. (iii) prompt compensation at full replacement cost for assets that cannot be restored. The Bank requires provision of resettlement assistance and compensation for loss of assets not related to land to persons without title or legal rights.	affected person has agreed to transfer the asset in the public interest but still has not chosen a compensation method or is in the process. Following Law No. LRU-781, non-titled owners who pay property taxes and can provide supporting documents are subject to compensation for immovable assets.	
	(iv) capacity building programs to support improved use of livelihood resources and enhance access to alternative sources of livelihood	The Uzbekistan legislation foresees no capacity building programs to support improved use of livelihood resources and enhance access to alternative sources of livelihood.	The Project will apply the Bank's requirement to provide capacity-building programs to support improved use of livelihood resources and enhance access to alternative sources of livelihood
Resettlement Assistance	The Bank requires provision of relocation assistance to affected people in the form of proper housing at resettlement sites, access to employment and production opportunities, integration of resettled persons economically and socially into their host communities, transitional support, etc.	The applicable Uzbekistan legislation envisages provision of permanent and temporary housing and associated relocation cost to the affected people with legal title and to those who paid land and property taxes. No integration and transitional support are foreseen in the Uzbek law.	The Project will: (i) apply Uzbek legislation for the provision of proper compensation to PAPs with legal title and PAPs without legal title but paying land and property taxes for affected assets. (ii) apply the Bank's requirement to provide capacity building to PAPs and communities where resettled PAPs arrived.
Standards of Living	The Bank requires improving the standards of living of the poor and other vulnerable groups	Uzbek legislation has several laws[106] related to the social support of vulnerable and low-	Reconciliation is not required.

[106] President regulation No. UP-6277 "On measures to provide a social allowance to low-income families and further expand the scale of the fight with poverty", 11.08.2021, https://lex.uz/uz/docs/5572521; Law on Social Services for the Elderly, Persons with Disabilities, and Other Socially Vulnerable Categories of the Population (No. ZRU-415 of December 26, 2016); Decree of the Cabinet of Ministers on Approval of the Procedure for Assigning and Paying Social Benefits and Material Assistance to Low-income Families, No. 44 of February 15, 2013; Amendment to Law on Social Protection of Disabled Persons in Uzbekistan, No. ZRU-162, July 11, 2008; Law on Child Rights, No. ZRU-139, 07.01.2008; Law on Social Partnership, September 25, 2014, etc.

Provision	AIIB	Uzbek regulation	Harmonised Framework
	displaced by the Project, including women, children, and persons with disabilities, to at least national minimum standards, including access to social protection systems.	income households, which are monitored by local authorities and are supported by social allowances from the government.	
Persons without Title or Legal Rights	The Bank requires providing resettlement assistance and compensation for loss of non-land assets to persons displaced by the Project without title to land or any recognisable legal rights to land.	The national legislation foresees that: (i) PAPs who do not have legal rights to the land and assets they occupy but pay land and property taxes are subject to compensation. (ii) PAPs without title or recognised land rights are not compensated for land and non-land assets unless they pay land and property taxes[107]	The Project will apply Uzbek legislation for the provision of compensation to PAPs who paid land and property taxes. For those PAPs who did not pay land and property taxes, the Project will apply the Bank's requirement to provide resettlement assistance and compensation for loss of non-land assets.
Negotiated Settlement	The Bank requires developing transparent, consistent, and equitable procedures to ensure that those people who enter into negotiated settlements maintain the same or better income and livelihood status.	The Law No. LRU-781[108] dated 29.06.2022 foresees procedure for negotiated settlement during land acquisition in the public interest.	Reconciliation is not required.
Information Disclosure	The Bank requires the client to disclose relevant information about social risks and impacts due to the project in a timely and accessible manner.	The Uzbekistan legislation foresees no information disclosure on land acquisition and resettlement.	The Project will apply the Bank's requirement for information disclosure on land acquisition and resettlement.
Implementation	The Bank requires implementation of RP, while the RP enlightening significant impacts should be implemented as a stand-alone project.	The Uzbekistan legislation foresees no RP, ARP, LRP, RPF, or similar plan preparation and implementation. However, the law provides for (Section 4.2.6) establishing a commission	The Project will apply the Bank's requirement for RP implementation.

[107] Law on Procedure for Lands Withdrawal in the Public Interest with Compensation, https://lex.uz/uz/docs/6087438
[108] https://lex.uz/docs/6355530

Provision	AIIB	Uzbek regulation	Harmonised Framework
		under the municipality (khokimiyat) to oversee the land acquisition, the provision of compensation, and related issues.	
Compensation and Entitlements	The Bank requires paying compensation and other resettlement entitlements before any displacement under the project.	The Uzbekistan applicable legislation also requires provision of full compensation for loss of land and non-land assets before the construction.	Reconciliation is not required.
Right to salvage materials	Right to salvage materials in favor of PAPs and depreciation (compensation calculation without deduction for depreciation or retention of salvaged materials)	The applicable legislation in Uzbekistan specifies that PAPs do not have the right to salvage materials upon signing an agreement on land withdrawal if they are not included in the agreement.	The Project will apply the Bank's requirement for RP implementation.
Supervision	The Bank requires close supervision of the RP implementation throughout the project.	The Uzbekistan legislation foresees no RP, ARP, LRP, RPF, or similar plan preparation and implementation. However, the law provides for setting up of a commission under the municipality (khokimiyat) to oversee the land acquisition, compensation, and related issues.	Reconciliation is not required.
Monitoring	The Bank requires monitoring and assessment of resettlement outcomes under the project, their impacts on the standards of living of PAPs and whether the RP objectives have been achieved.	The Uzbekistan law foresees no resettlement monitoring and assessment except for the setting up of a commission under the municipality to oversee the land acquisition, compensation, and related issues.	The Project will apply the Bank's requirement for monitoring and assessing resettlement outcomes, their impacts on the PAPs living standards, and whether the RP objectives have been achieved.

PAP = project affected people; RP = resettlement plan; Arp = abbreviated resettlement plan; RPF = resettlement planning framework; GRM = grievance redress mechanism

8.3. RPF Principles to be Applied to the Project

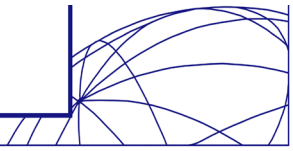
Apart from the objectives mentioned above, the following non-negotiable resettlement principles will be followed for all the sub-projects implemented under this Project:

- All sub-projects (detailed designs) will be screened for social impacts (involuntary resettlement impacts and risks) with the following preparation of LARP/LRP/RP as appropriate.
- A socio-economic survey should be undertaken for each subproject to identify the PAPs having lands and immovable properties and those who lose livelihood dependent on the lands being acquired; this will also include gender analysis related explicitly to resettlement impacts and risks under specific subproject.
- If resettlement is unavoidable, resettlement activities should be conceived and executed as an integral part of the Project, providing sufficient resources to enable the persons displaced to enjoy the Project benefits.
- Entitlements and resettlement options will be communicated through transparent meaningful consultation with PAP.
- Compensation and rehabilitation and resettlement assistance will be paid before displacement and any project civil work.
- All compensation will be at replacement cost.
- No civil works will be initiated unless compensation for land and assets and rehabilitation and resettlement assistance is provided in full to all eligible PAP.
- Livelihood assistance will be provided in the form of income generation measures. The Project will inform the PAP on alternative income generation activities suitable for the area and assist them in making choices.
- The Project will monitor the provision and performance of the RP/LRP through appointed Consultants.
- Progress related to the payment of land acquisition compensation and resettlement entitlements will be thoroughly documented with the following reporting sent to the AIIB.

8.4. Eligibility and Entitlements

8.4.1. Eligibility

Affected persons irrespective of their status or whether they have land titles, and legal rights or not, are eligible for compensation and/or some other assistance if they occupied the land before the entitlement cut-off date. To avoid unnecessary and sometimes fraudulent claims for compensation, the eligibility should be preceded by property



inventories, socioeconomic survey, and verification of title deeds, leases, or other legal documents admissible and recognised under the applicable law as valid documents indicating ownership or user rights.

Land acquisition for the Project may adversely impact different categories of PAP. As the Project is at the feasibility study stage, it is likely difficult to estimate the number of people to be affected by the planned activities. The Project Affected Persons (PAP) may be classified in one of the three following groups:

(1) Those who have formal legal rights to the land they occupy;

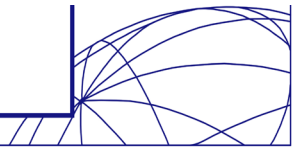
(2) Those who do not have formal legal rights to land, but have a claim to land that is recognized or recognizable under the national laws including those measures put in place by the draft land policy; or

(3) Those who have no recognizable legal right or claim to the land they occupy.

8.4.2. Cut-off-date

The entitlement cut-off date refers to the completion time of measuring affected assets, identifying affected people, and the socioeconomic survey in the Project area, i.e., the last date for defining those eligible for compensation. After that date, the Project considers no new cases of PAPs. Moreover,

- People who encroach on the area after the census and valuation are not eligible for compensation or resettlement assistance.
- Any investment in fixed assets (such as structures, crops, fruit, trees, etc.) commencing after the cut-off date will not be eligible for compensation.
- The cut-off date will be communicated to affected people and broader communities during the census to ensure all PAPs are registered. This could be implemented through:
  - posting information in local media, including digital social media
  - billboards at the local community centres (makhalla committees)
  - presence of information at the district municipalities (khokimiyats)
  - placing announcements in frequently visited locations throughout the affected areas (shops, local markets, outpatients, rural medical stations, etc.)
  - community meetings in the Project area.
- The cut-off date will be an integral part of the LRP/RP.
- Local authorities will monitor any cut-off date violations and provide proper grievance redressal.



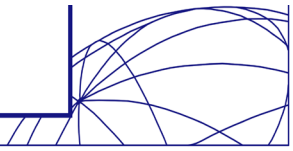
Establishing a cut-off date is necessary to prevent opportunistic invasion and claims into the sites selected for the Project solely in anticipation of benefits.

8.4.3. Entitlement Matrix

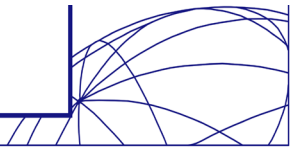
An entitlement matrix envisages all affected households, individuals, and entities losing assets and livelihood. It defines the entitlement of compensation and resettlement assistance depending on the nature of ownership rights on lost assets and the extent of the impacts, including the socio-economic vulnerability of the displaced people. The entitlement matrix, summarising all possible types of losses and the corresponding nature and scope of entitlements, following the principles of this RPF, is presented in the table below.

Table 72: Entitlement Matrix

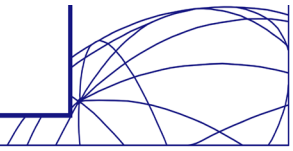
No.	Impact Category	Entitlements		Implementation Guidelines
Section I. Title Holders of Asset				
1.	Loss of Land (agricultural, residential, commercial or otherwise including resident and nonresident landlords)	Land for land compensation with a plot of equal value.		▪ The landowner will receive either a replacement of land for land with equal value (and equal soil quality for agricultural lands) or cash compensation at replacement value. ▪ Stamp duty, registration fees, legal, tax, and other charges related to the land replacement will be provided against receipts.
		1.1. Agricultural land		
		a	Replacement of land for land with equal value (and equal soil quality for agricultural lands) or cash compensation at replacement value	▪ The crop owner will have a right to collect fruits and other crops within the stipulated period. ▪ Cash compensation for standing crops that could not be harvested before land repossession will be provided on the market value and in consultation with district agriculture department. ▪ Cash compensation for fruit-bearing trees, vineyards, and other plants will be provided on the market value considering the average annual yield for the last three years and age of the crop, vineyard, or tree after planting and in consultation with district agriculture department.
		b	one-time financial assistance equivalent to three months' minimum wage in Uzbekistan	▪ Each displaced family will receive one-time financial assistance equivalent to three months' minimum wage in Uzbekistan at the time of the census.
2.	Loss of Residential Structure	2.1. Residential structures		
		a	Replacement of the building with a structure of equal	▪ Compensation is calculated by the competent certified appraiser based on the local market prices in adjacent territories for the actual



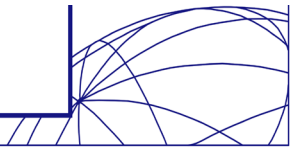
			value or cash compensation on market value.	moment of compensation payment, considering inflation and market fluctuation in prices in the real estate sphere. ▪ Stamp duty, registration fees, legal, tax, and other costs related to the replacement of the housing will be provided against receipts. ▪ Notification of PAP should be six months before relocation; no forced eviction is allowed.
		b	Right to salvage affected materials	▪ Right to salvage materials in favor of the affected building or structure owner if the incumbent demolishes the affected part of the building or structure by himself within the stipulated period. ▪ The compensation calculation will have no deduction for depreciation or retention of salvaged materials.
		c	One-time financial assistance equivalent to three months' minimum wage in Uzbekistan	▪ Each displaced family will receive one-time financial assistance equivalent to three months' minimum wage in Uzbekistan at the time of the census.
		d	One-time allowance of moving costs for those relocated	▪ The owner of the affected housing will receive one-time financial assistance to cover transportation costs for shifting the family and moving the furniture, building materials, belongings, and cattle, if any, to the new location. The amount of relocation assistance will be calculated during the census survey based on the market value in the respective area.
		e	Rental allowance for at least three months for those who selected cash compensation for affected house or one moth for those who selected alternative house	▪ Temporary housing of those selected cash compensation will be provided for at least three months whereas a further period will be discussed between PAPs and local authorities. ▪ Monthly allowance will be calculated during the census of PAPs based on average market rental value in respective project areas.
		2.2. Losses of structures adjacent to the residential houses such as fences, shed, tents, etc.		
		a	Compensation at full replacement cost for affected structure/fixed assets free of depreciation and transaction cost	▪ Compensation calculation is based on the local market prices ▪ PAPs will have the right to salvage naterials if the incumbent demolishes the affected structure by himself within the stipulated period.
3.	Loss of Commercial Structures	a	Replacement of the building and other immovable property and assets	▪ Compensation will be calculated by the competent certified appraiser based on the market prices in the adjacent area



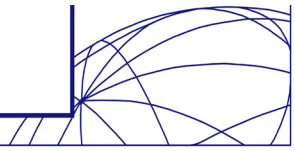
			attached to the land will be with a structure of equal value or cash compensation on market value	▪ Stamp duty, registration fees, legal, tax, and other costs related to the replacement of the building will be provided against receipts. ▪ Notification of PAP should be six months before relocation; no forced eviction is allowed.
		b	Right to salvage affected materials	▪ No deductions for depreciation or for retention of salvaged materials in the calculation of compensation.
		c	One-time allowance of moving costs for those relocated	▪ The owner of the affected housing will receive one-time financial assistance to cover transportation costs for shifting the family and moving the furniture, building materials, belongings, and cattle, if any, to the new location. The amount of relocation assistance will be calculated during the census survey based on the market value in the respective area.
		d	Rental allowance for at least three months for those who selected cash compensation for affected building	▪ Monthly allowance will be calculated based on average market rental value in respective project areas.
4.	Impact to Tenants (residential, commercial, agricultural)	4.1 Residential		
		a	Rental allowance for one month	▪ One-month notice to vacate the rental premises ▪ Monthly allowance will be calculated during the census of PAPs consisting of average market rental value in respective project areas
		b	One-time allowance of moving costs for those relocated	▪ One-time allowance will be calculated during the census survey based on the actual market value in respective project areas.
		4.2 Commercial		
		a	Rental allowance for one month	▪ One-month notice to vacate the rental premises ▪ Monthly allowance will be calculated during the census of PAPs consisting of average market rental value in respective project areas
		b	One-time allowance of moving costs for those relocated	▪ One-time allowance will be calculated during the census survey based on the actual market value in respective project areas.
		4.3 Agricultural tenants		
		a	Cash compensation for fruit-bearing trees, vineyards, and other crops planted by Agricultural Tenants, Sharecroppers, and	▪ Landowners will reimburse tenants, sharecroppers, and leaseholders with respective land rental fees for unexpired tenancy or lease, if any. ▪ Cash compensation for fruit-bearing trees, vineyards, and other crops planted by Agricultural Tenants, Sharecroppers, and



			Leaseholders of Land	Leaseholders of Land will be provided on the market value considering the average annual yield for the last three years and age of the crop, vineyard, or tree after the planting in consultation with the district agriculture department.
5.	Loss of Trees and Standing Crops	a	Six months in advance to shift and harvest the crops or cash compensation will at market value for standing crops	▪ The crop owner will have a right to collect fruits, vegetables, flowers, and other crops within the stipulated period. ▪ Cash compensation will be provided at market value for standing crops that could not be harvested before land repossession and in consultation with the district agriculture department.
		b	Cash compensation for fruit-bearing trees and vineyards based on the market prices	▪ Compensations to Agricultural Tenants, Sharecroppers, and Leaseholders will be calculated considering the average annual yield for the last three years and age of vineyard or tree and in consultation with the district agriculture department.
		c	Cash compensation for timber trees based on the market prices	▪ Compensations to Agricultural Tenants, Sharecroppers, and Leaseholders will be calculated considering the tree's age and wood type and in consultation with the district agriculture department.
Section II. Additional Assistance for women-headed households (title and non-title holders)				
6.	Loss of Land, House, Shop		▪ A one-time allowance of the equivalent of one minimum wage for women-headed households who are relocated due to the project	
Section III. Non-Title Holders - Impact to squatters / encroachers				
7.	Impact to Squatters	7.1 Loss of house		
		a	Cash compensation in replacement cost for the affected structure	▪ Notification of PAP should be six months before relocation.
		b	Right to salvage materials in favor of the affected building	▪ The PAP demolishes the affected structure by himself within the stipulated period
		c	One-time allowance of moving costs	▪ Resettlement assistance is calculated by local authorities
		7.2 Loss of shop		
		a	Cash compensation in replacement cost for the affected structure	▪ Notification of PAP should be six months before relocation.
		b	Right to salvage materials in favor of	▪ The PAP demolishes the affected structure by himself within the stipulated period



			the affected building	
		c	One-time allowance of moving costs	▪ Resettlement assistance is calculated by local authorities
		7.3 Loss of standing crops		
		a	Six-month advance notification for harvesting crops or cash compensation equal to the market value of the yield of the standing crops	▪ Notification of PAP should be six months in advance to shift and harvest the crops, fruits, flowers, etc. ▪ The crop owner will have a right to collect fruits, vegetables, flowers, and other crops within the stipulated period. ▪ Compensation will be provided for standing crops based on market value and in consultation with the district agriculture department.
8.	Impact to Encroachers	8.1 Loss of Standing Crops		
			Six-month advance notification for harvesting crops or cash compensation equal to the market value of the yield of the standing crops	▪ Notification of PAP should be six months in advance to shift and harvest the crops, fruits, flowers, etc. ▪ The crop owner will have a right to collect fruits, vegetables, flowers, and other crops within the stipulated period. ▪ Compensation will be provided for standing crops based on market value and in consultation with the district agriculture department.
		8.2 Structure		
		a	One-month notice to demolish the encroached structure	
		b	Compensation at market value for structures without depreciation for the affected portion of the structure	
Section IV. Loss of Livelihood				
9.	Loss of employment in non-agricultural activities or agricultural wages or other wage workers	a	A one-time allowance of the equivalent of one minimum wage	▪ Only agricultural laborers who are full-time employees of the affected landowner, or those affected full-time employees of the business, will be eligible for this assistance. Seasonal agricultural laborers will not be entitled to this assistance.
		b	For PAPs relying on agriculture as a source of income, the Project will provide training on sustainable land and water resources management	▪ The cost of training will be included in the Project consultants' contracts. ▪ For PAPs who opt for an alternative livelihood, the Project team will provide training sessions based on the training needs. The cost of training will be included in the Project consultants' contracts.
Section V. Impact on Vulnerable Households				



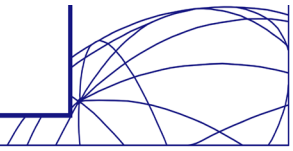
10.	Vulnerable Households (Women headed household, Low-Income household, a household headed by elderly with no support and household headed physically challenged people)	a	Inclusion in existing safety net programs to ensure the continuation, or increase, of previous income.	▪ For PAPs relying on agriculture as a source of income, the Project will provide training on sustainable land and water resources management. The cost of training will be included in the Project consultants' contracts. ▪ For PAPs who opt for an alternative livelihood, the Project team will provide training sessions based on the training needs. The cost of training will be included in the Project consultants' contracts.
		b	A one-time allowance of the equivalent of one minimum wage	
		c	Priority for employment in project-generated jobs, training opportunities, self-employment, and wage employment assistance.	
Section VI. Unforeseen Impacts				
Any unanticipated impacts identified during Project implementation will be compensated in full at replacement cost and the entitlement matrix shall be revised if required in case major unanticipated impacts occur during detailed and final design.				

8.5. Preparing Resettlement Plan for Subproject

For any subproject that could result in involuntary resettlement impacts, a Resettlement Plan or Abbreviated Resettlement Plan should be created. The level of detail and comprehensiveness required for the plan will depend on the potential risks and impacts of the resettlement.

The LARP/RP/LRP preparation will start with the detailed design study, followed by the reconnaissance survey and secondary Information collection. A census and socio-economic survey will be conducted based on the collected information. Consultations will be conducted with PAPs and other stakeholders throughout the project's lifecycle. The purpose of consultations during resettlement planning will be to inform PAPs about the nature and scale of project impacts and decision-making in all resettlement aspects, especially eligibility, entitlements, unit rates of compensation, and resettlement and rehabilitation assistance. A consultation process will be documented by design consultants and enclosed to LARP/RP/LRP. The RP agreed upon with PAPs and local authorities will be provided to AIIB for review and clearance.

The LARP/LRP/RP will be prepared for each subproject involving resettlement impacts. The key steps in resettlement planning are: (i) social screening; (ii) social impact assessment; (iii) inventory and valuation; (iv) determining eligibility and entitlements; (v) consultation and disclosure of findings; (vi) preparation of LARP/LRP/RP ; (vii) consultation and finalization of RP; (viii) disclosure of the final LARP/LRP/RP (which analyses and

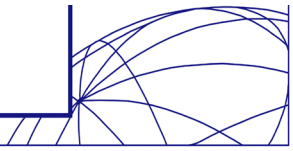


describes the impacts, entitlements, detail of parties involve in project implementation, RP implementation schedule, inventory of eligible PAPs, grievance redress mechanism (GRM), initiation of land acquisition and resettlement process; disbursement of compensation and entitlements, relocation (planning and actual relocation), redressed of grievances, site clearance and handover to contractor for civil works; post resettlement support measures.

Summary of process for screening, preparing, and approving RPs is provided in the table below.

Table 73: Summary of Process for Screening, Preparing, and Approving RPs

Step	Action	Responsibility	Phase
1.	Screening of each subproject for resettlement impacts	PCU	As soon as a subproject is identified and a draft of the subproject design is ready
2.	Determining the appropriate safeguard instrument to be prepared (LARP/LRP/RP)	PCU	Upon completion of screening
3.	Preparation of ToRs for conducting SIA and appointment of consultants	PCU	Mobilization of consultants upon finalization of subproject design and completion of screening
4.	Social Impact Assessment ▪ consultations with potential PAPs and other stakeholders ▪ census and inventory ▪ socio-economic survey ▪ identification of vulnerable and severally affected households ▪ assessment of impacts on livelihoods ▪ valuation of land and other assets at replacement cost ▪ determination of compensation for each category of PAPs	RP consultants	With the commencement of the RP consultants' contract
5.	Establish GRM and notify GRC at each site of respective subproject	PCU	At the SIA preliminary stage
6.	Preparation of LARP/LRP/RP	RP consultants	Duration depends on nature and scale of resettlement impacts
7.	Review of draft LARP/LRP/RP	PCU	5 to 7 working days after receiving the draft LARP/LRP/RP



Step	Action	Responsibility	Phase
8.	Finalization of LARP/LRP/RP	RP consultants	5 to 7 working days after receiving PCU comments
9.	Approval of LARP/LRP/RP by PCU and its submission for the AIIB's compliance review and clearance	PCU	5 to 7 working days after receiving the LARP/LRP/RP
10.	Disclosure of LARP/LRP/RP	PCU/AIIB	Once approved by PCU and AIIB
11.	LARP/LRP/RP implementation ▪ confirmation of PAPs and the associated project resettlement impacts, if any ▪ finalization of compensation amount ▪ development of standard operating procedures for making compensation and assistance ▪ complete documents for payments ▪ payment of compensation and assistance ▪ grievance redressal ▪ continuous coordination and communication with PAPs and key stakeholders ▪ documentation and reporting	PCU with PMC	Before start of civil works
12.	Consultation with PAPs and other and stakeholders	PCU and consultants	Throughout the project duration
13.	Internal monitoring of LARP/LRP/RP implementation and reporting	PCU	During LARP/LRP/RP implementation
14.	Grievance redressal (on-going)	PCU	At all stages of resettlement planning and implementation
15.	Arrangement for external monitoring	PCU	Before completion of LARP/LRP/RP
16.	Implementation of external monitoring of LARP/LRP/RP implementation	Consultants	Once LARP/LRP/RP implementation is completed and then on semi-annual basis
17.	Taking possession of site	PCU	After completion of payments as per entitlements

Step	Action	Responsibility	Phase
18.	Post LARP/LRP/RP implementation and evaluation	Consultants	In three months upon completion of each LARP/LRP/RP implementation
19.	LARP/LRP/RP Completion Report	PCU	Within two months after completion LARP/LRP/RP implementation.

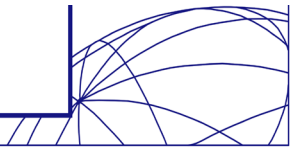
8.5.1. Screening for Inventory Resettlement

The purpose of the screening is to evaluate the likelihood of involuntary resettlement for each subproject. The PCU will carry out an initial social screening exercise for each subproject to determine the types and nature of involuntary resettlement risks and impacts that may occur due to proposed activities. The PCU and Detailed Design Consultant will work together to identify environmental and social risks and impacts of the designed water and wastewater infrastructure, and categorize projects based on the nature of activities, the scale of operations, technology, locations, significance, and severity of environmental and social risks and impacts.

AIIB SS2 requires avoiding and/or minimizing land acquisition and involuntary resettlement. At this stage, efforts will be made to avoid or minimize the resettlement impacts by exploring alternative design options. PCU and Detailed Design Consultant will consider how land acquisition and involuntary resettlement can be avoided and minimized. The screening results will be documented and reported in a screening checklist. If screening reveals that the project will cause significant social impacts, the PCU and Detailed Design Consultant will review another feasible design alternative of the main and associated infrastructure and construction methodology to avoid and/or minimize the involuntary resettlement impacts. PCU and Detailed Design Consultant will coordinate closely to identify opportunities to avoid or minimize resettlement impacts when screening each subproject.

8.5.2. Social Impact Assessment

The detailed Social Impact Assessment (SIA) will be carried out based on a census of affected parties and their assets and the socio-economic profile of PAPs through sample surveys. The SIA will be carried out for each subproject to determine the magnitude of displacement and potential losses and identify any vulnerable groups and social issues in the Project area. The RP will be prepared based on the SIA findings and RPF guidelines. The RP will ascertain the magnitude of the impact, integrate the results of public



consultations, provide details of the cost of resettlement and institutional arrangements, and formulate a plan to implement resettlement activities.

Reconnaissance Survey. An initial survey will be conducted to determine the existing and proposed alignments for each subproject. This will also include some random consultations with residents to identify potential impacts and risks. Alternate design options will be explored and discussed with the local population and communities' leaders. The Project owners will consider suitable modifications to the design to minimise any adverse social impacts.

Secondary Information Collection. The secondary information on the affected area will be collected from statistics, health, and cadaster departments and other agencies as needed. This information could also be gathered during consultations with local authorities on district and community levels.

Census survey. Based on the final detailed design of the subproject, a census and socio-economic survey will be conducted. The census should cover all potentially affected properties in the Project impact area and cover immovable property owned by displaced parties and common property resources. The survey will be carried out in support of local authorities and community leaders.

The census will provide for the following information:

- Affected people including titleholders, tenants, leaseholders, sharecroppers, and non-titleholders and their household members, if they are potentially displaced.
- Displaced people who are dependent on the acquired land for their livelihood.
- Vulnerable displaced people and their vulnerable status.
- Minorities, if any.
- Verified legal boundaries of the Project area, ownership documents for land, structures, and other physical assets within the area of influence.
- Encroachments, public and private assets in the Project area to be documented.

The baseline census survey aims to gather information on the different types of losses and adverse impacts that may occur because of the Project. The survey will identify potentially affected populations, with special attention to vulnerable groups, and assess the value of various assets involved.

Each of the affected property will be surveyed and numbered, documented, photographed along with the topographical survey data.

8.5.3. Preparing Resettlement Plans

LARP, LRP/RP will be prepared based on the SIA findings and will incorporate results of public consultation with PAPs concerning the cut-off date for eligibility, the scale of impacts to income and livelihoods, methods of valuation, compensation payments, resettlement assistance, and time frame for LARP, LRP/RP implementation. LARP, LRP/RP will be provided to AIIB for review and clearance.

8.5.4. Inventory and Valuation of Losses

Specific Commission established under the khokimiyat according to the *Law No. LRU-781 on Procedure for Lands Withdrawal in the Public Interest with Compensation* of the respective district is the authority to finalise the valuation of the land and immovable assets including the standing crops and trees for land acquisition. However, the valuation is preceded by inventory of affected assets and census with socio-economic survey of PAPs.

Asset Inventory. An inventory of affected assets will follow the procedure stipulated in the *Standard No.833 of the Ministry of Finance of Uzbekistan*[109] *– Uzbekistan National Accounting Standard No.19 "Establishment and Carrying Out of Inventory."*

The inventory will summarise the:

(i) Size of the affected lands, their location (geographic coordinates), soil quality, value, etc. and information on their ownership disaggregated by gender.
(ii) Number of structures that will be impacted with key specifications (such main dimensions, materials used, description of foundation, insulation, walls, staircases, floor, roofing, ceilings, doors, windows frame, etc.) and information on their ownership disaggregated by gender.
(iii) Other immovable assets like electricity and gas connections and sources of drinking water, etc.
(iv) Number and type of crops, trees, flowers, etc. with information of annual yield.

Socio-economic Survey of PAPs. The socio-economic surveys of PAPs will cover, but not be limited to:

(a) Profiles of household heads by age, gender, and education.
(b) Household members, labor force, and employment, disaggregated by gender.
(c) Family incomes and its sources as compared with poverty thresholds in the district.
(d) Asset ownership such as land, crops, and trees.

[109] https://lex.uz/docs/476407

(e) Access to social services like schools, clinics, public markets, and places of worship.
(f) Access to electricity connections and public roads.
(g) Access to common resources in the area.

The survey will also help distinguish between vulnerable and non-vulnerable households. The compensation and income restoration measures for the PAPs will be based on the survey findings, which will be supplemented with relevant secondary socio-economic data available at the district level in the Project area.

Valuation of Losses. Valuation of affected assets will follow the Law on Valuation, Law on Land Caster, and other regulations, and be carried out by the certified independent appraiser who will be assigned by the local authorities. The objective of this exercise is to establish the extent of loss and estimation of replacement cost.

Livelihood Restoration. Each displaced person whose income or livelihood is affected by the Project will be assisted in improving or at least restoring this livelihood to the pre-project level. The entitlement matrix has provisioned the livelihood restoration allowance for the displaced persons.

8.5.5. Consultations and Information Disclosure

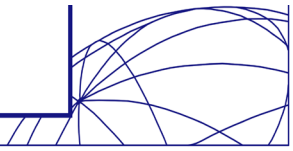
Consultantions

The project aims to encourage active participation from the public and stakeholders. This will involve exchanging information and making decisions during the preparation and implementation of resettlement or livelihood restoration plans. Both resettlement instruments will be disclosed before conducting relevant public consultations and with sufficient time for PAPs and other stakeholders to prepare comments and concerns.

The objectives of meaningful consultation will be to provide specific stakeholder groups with relevant information and opportunities to voice their views during project design (engineering design, procurement of contractors and suppliers), construction, and operation and maintenance.

Social inclusion will include systematic engagement with PAPs, community residents, and specifically vulnerable groups through the following settings:

- Arrangement of consultation meetings in suitable venues commonly known to the community residents and other stakeholders and convenient for people with disability; these could be community centres (office of makhalla committees or office of the district governor).



- Posting proper announcements on upcoming engagements in the project area
- Pre-informing the local authorities and jointly development of schedule and plan for public consultation activities.
- Scheduling the consultation meetings at a time suitable for all types of residents from the project area.
- Provision of special care to ascertain the attendance of women of the project area and organization of focus group discussion with vulnerable people and females as feasible.
- Conducting the meetings in a form and language understandable to the community residents and project stakeholders.
- Application of dialogue approach for consultations and conducting them more than once time depending on the need and agreement reached.
- Making a resettlement agreement in writing.

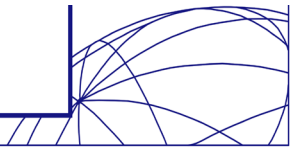
At the planning stage, the public consultations will discuss the following provisions with PAPs, residents, and institutional stakeholders:

- Project scope and rationale
- RP or LRP
- PAPs categories entitled compensation
- Entitlement matrix
- Cutt-of date
- Compensation types and procedures
- Livelihood restoration options
- GRM.

At the project preparation stage, the public consultations will involve PAPs and relevant institutional stakeholders and discuss the project location mapping of the sites selected for the project components and written agreement with PAP. An agreement is essential to mitigate potential disputes or to prevent the need for conflicts to rise to the provincial and above levels. The public consultations at this stage should occur as early as possible and on time. The affected community should receive notification during conceptual design to ensure the project avoids significant social risks.

Public consultations during the implementation stage will relate to:

- Continuation of stakeholder engagement activities during screening
- Notification of PAPs
- Documentation of assets
- Agreement on compensation
- Contract preparation



- Compensation payments
- Provision of resettlement assistance
- Delivery of livelihood restoration training activities.

Compensation options will be clearly explained to all affected parties and while drawing a contract and listing all property and land being surrendered, the PAP could fairly select and receive the compensation types. The detail and extent of these stages will depend on the nature and extent of potential impacts and compensation required.

Disclosure of Project Safeguard Documents

Information will be disseminated to displaced persons at various stages of the project through project planning, preparation, and implementation. For the benefit of the local community living in the project area in general, and affected parties, in particular, a summary of RPF and respective RP or LRP of the subprojects will be made available in local languages. The RPF and RP or LRP will also be available at the PCU office, water utility, local authority of the project district, and community centres (makhalla committees).

Documentation and Record Keeping

The project will create a compensation inventory for each PAP and their household members. The inventory will contain necessary personal information, total landholdings, an inventory of affected assets, and information to monitor future situations. Photographic evidence will support the collected data, which will be confirmed and witnessed by representatives of the local authorities and community leaders. The files will be kept current and include documentation of lands. During negotiations, all PAPs will receive a copy of the file for transparency and fairness. This documentation will ensure a fair land acquisition process for each PAP and monitor it over time. The project will document claims and assets in writing to ensure accuracy..

RP Approval, Clearance, and Disclosure

After incorporating feedback from the disclosure, the PCU will review and approve the draft RP to ensure that the RP complies with the RPF guidelines. Once approved, the RP will be submitted to the AIIB for review, ensuring that it follows the AIIB policies and procedures before getting clearance. PCU will post the approved RP on the UzWJSC website, along with a translated version in the local language. The AIIB will also disclose the RP on its website. Any changes to the RP would have to follow the same clearance or approval procedures and disclosure.

8.6. Vulnerable Groups

The initial social assessment described the following vulnerable groups in the project area:

- Low-income households;
- Low-income landholders that have limited productive land (this will be determined by the minimum amount of farmland needed to be a viable farmer in the project area);
- Mentally and physically handicapped people or people in poor physical health; infants, children, and women without assistance, elderly people;
- Low-income women-headed households or women-headed households with no other support;
- Other affected people identified by the project management unit and who may not be protected through national land compensation or land titling; or
- Any additional groups identified by the socio-economic surveys and by meaningful consultation.

Vulnerable households, including women-headed households, low-income households, households headed by senior adults with no support, and households headed by physically challenged people, will be provided with a one-time additional allowance equivalent to three months' minimum wage income by proof provided by makhalla. In addition, members of vulnerable households will also be prioritized in project-related employment. The communities (makhallas) and district governments have a record of all community households and will be tapped to identify and certify vulnerable households. The needs of vulnerable groups will be identified, analyzed, and relevant managemet measures be described in LARP/LRP/RP. With following implementation and monitoring.

8.7. Methods of Compensation

Compensation will be provided in cash, kind, or assistance, with the type being an individual choice. The table describes the forms of compensation.

Table 74: Forms of Compensation

Cash Payments	Compensation will be calculated in Uzbek sums. Rates will be adjusted for inflation.
In-kind Compensation	Compensation may include items such as land, houses, other buildings, building materials, seedlings, agricultural inputs, and financial credits for equipment.

Assistance	Assistance includes onetime payment, moving allowance, transportation and labor, training.

Making compensation payments raises inflation, security, and timing issues that must be considered. One purpose of providing in-kind compensation is to reduce inflationary pressures on the costs of goods and services. Local inflation may still occur; thus, market prices will be monitored within the period that compensation is being made to allow for adjustments in compensation values. The local administration must address the question of security, especially for people who will be receiving cash compensation payments. Local banks and microfinance institutions should work closely with the local administration at this level to encourage the use of their facilities, which will positively impact the growth of the local economies. The time and place for in-kind compensation payments will be decided upon by each recipient in consultation with the LARP/LRP/RP.

8.8. Gender Consideration in Resettlement

In line with AIIB' policy requirements, measures will be taken to ensure that women and vulnerable people are able to participate in the consultation meetings and other LARP/LRP/RP planning activities.

As part of the LARP/LRP/RP preparation process, the vulnerable and severely affected people will be identified through the census and socioeconomic survey and the PCU will ensure that they are informed of the consultations' dates and venues. The meetings with vulnerable groups will be carried out that ensure they are aware of their rights, entitlements, and details on the existing GRM and grievances redress procedures. The vulnerable groups will be also consulted about their preferred options for livelihood stabilization and rehabilitation assistance as appropriate.

National gender policy aligns with AIIB policy, recognizing gender equality as crucial for sustainable economic development and emphasizing inclusiveness and gender responsiveness in projects.

8.9. Grievance Redress Mechanism

A Grievance Redress Mechanism for affected people is an arrangement for receiving, evaluating, and facilitating the resolution of concerns, complaints, and grievances from people who believe they have been adversely affected by environmental or social impacts of the proposed project, and to inform project-affected people of its availability.

Various queries, concerns, complaints, and problems that are likely to be generated among the affected persons and that might require mitigation, may include the following:

- Affected households not listed as affected;
- Losses not identified correctly;
- Compensation/assistance considered inadequate or not as provided for in the entitlement matrix;
- Dispute about ownership of assets;
- Delay in disbursement of compensation payments/assistance.

8.9.1. National Complaint Management System

Law on Appeals of Individuals and Legal Entities No. ZRU-445 (Section 2.1.4) regulates appeals, recommendations, and complaints of individuals and legal entities to government authorities and organizations. The law specifies that:

- the complainant may submit its complaint/appeal orally, in writing, or electronically
- the complainants shall specify their full name and address and may include e-mail and other contacts of the complainant
- the complaint/appeal shall be redressed within 15 days and, if needed additional investigations, the complaint/appeal shall be redressed for up to one month, while the consideration of complaints/appeals requiring in-depth analysis may be extended for up to another month
- all government organizations shall establish complain management system.

Thus, the affected persons can submit their grievances in writing or electronically to the contractor, Khorezm Suvtaminot LLC, or UzWJSC. The affected person may also submit its grievance to a Court at his cost, where decisions will be made following applicable national legislation. Below is a screenshot of the government Single Web-based Complaint Management System of Uzbekistan.

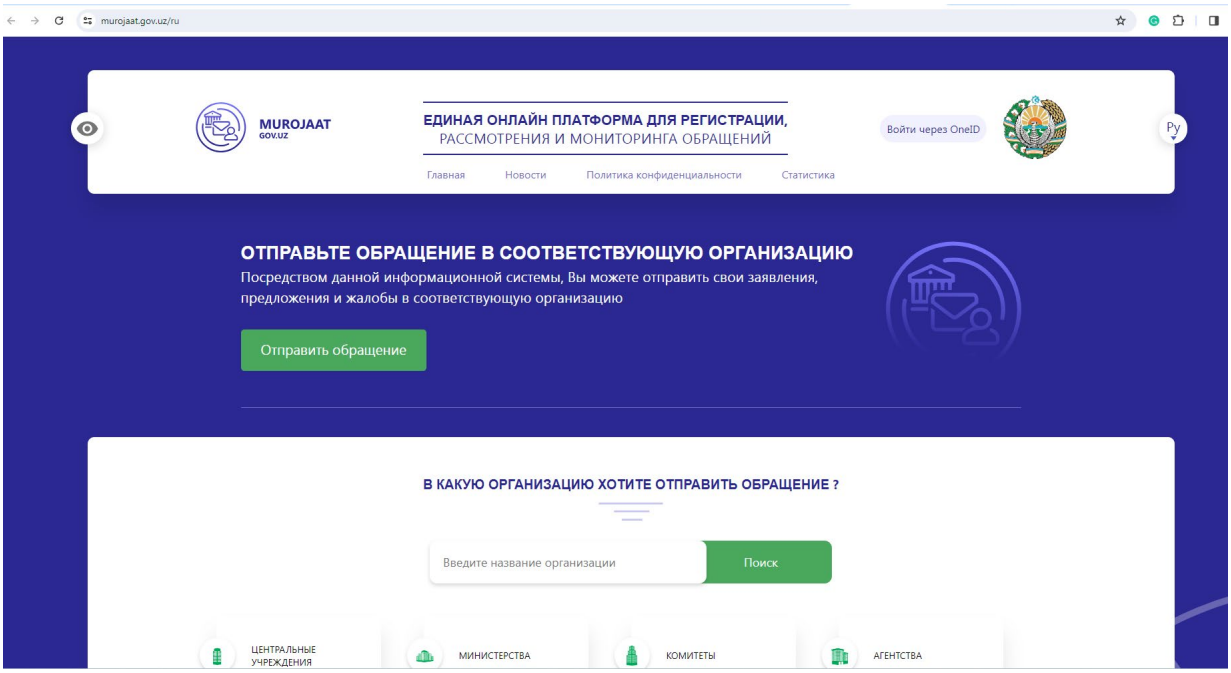


Figure 30: Web-based complaint form
(Source: Single web-based complaint management system of Uzbekistan[110])

To file a complaint, the complainant should follow the following steps:

(1) Log in to this system using your digital signature
(2) Select the category "Headquarters"
(3) Select "General Prosecutor's Office"
(4) Select "Subordinate Organizations"
(5) Select "Prosecutor's Office of Khorezm Province"
(6) Enter the text of the complaint or appeal in the window
(7) Submit the complaint or request.

8.9.2. Project-level Grievance Redressal Mechanism for Affected People

A two-tier GRM will be established by the PCU for project-affected people, where the first tier GRM will be at the district level, managed by a local Grievance Redress Committee (GRC). The second tier GRC will be at the Khorezm province level, managed by PCU.

Each tier will have different actors for objective and transparent decision-making. This approach would allow for trust to be built among the stakeholders and prevent the

[110] https://murojaat.gov.uz/ru

culmination of small issues into major community concerns. The GRM will be accessible and understandable for all stakeholders and be available for the entire project life.

Grievance Redress Committees

GRC of the first tier GRM will compose representatives of contractor, PCU Coordinator, PMC, district department of Khorezm Suvtaminot LLC, head of makhalla, and representative of district authorities (khokimiyat). Aggrieved persons can contact either of them and they will be responsible for receiving, hearing, and resolving the grievances.

GRC of the second tier GRM will compose of PCU head, authorized representatives of Khorezm Suvtaminot LLC and Khorezm province authorities (khokimiyat).

The exact GRC members for each subproject will be specified in the ESIA/ESMP/RAP.

Functions of GRM

Grievances may be channelled through letters, emails, text messages, verbal narration, grievance boxes, and registers.

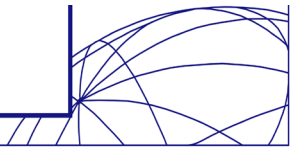
Tier-1 GRM: PCU Coordinator will be responsible for registering all project-related complaints. This will also include details of date of receipt of the grievance, date of hearing, if any, along with nature of complaint/concern, actions taken, and date of communication sent to the complainant. Communication, in writing will be sent to the aggrieved person with the date, time and venue of the hearing and make it known that she/he is entitled for a personal hearing.

The GRC will collect information about the complaints, assess the information provided, and verify the data supplied with field investigation (if needed). After a report with the decision made is prepared by the GRC of first tire, the report and its recommendation are sent to the complainant.

The final decision on grievance will be sent to the aggrieved person in writing in 15 days. If the complainant is not satisfied with the decision at the first tier, she/he can choose to escalate the grievance to second tier.

Tier-2 GRM: The GRC member (PCU) will log the complaint in a register called the Grievance Log. Then the GRC member will issue to the aggrieved party with a case number and recorded date in the Grievance Log within two days.

The GRC will arrange the meeting within next seven calendar days of the logging of the complaint to:



- Deliberate on the nature and circumstances of the complaint;
- Investigate the complaint based on evidence provided by the complainant;
- Meet with the complainant and other persons;
- Make a decision.

If the GRC needs extra time to investigate or deliberate on the complaint, the affected person will be informed of the time when a decision is expected. In any case, all complaints shall be resolved within one month.

The GRC will prepare all the information and documents relevant to the complaint prior to the meeting and provide copies to all members.

If the solutions are not accepted by grievant, GRC will conduct more consultations with the grievance to obtain further detailed clarification on the issues and to try and agree upon a mutual solution. Minutes of such consultation sessions should be kept in the Grievance Log. If mutual solution cannot be obtained through consultations, the grievant may submit its complaint to the court of law.

Once the complaint is resolved, the PMC will document the decision and prepare full documentation on the process, including minutes of meeting, photographs of visits, documents reviewed, and reasons for the decision and will share this documentation and the complaint management report with all GRC members, the complainant, and the PCU. The GRC will ensure that the complainant is fully informed of the decision and is also informed about the right to appeal to the Project GRC and to the court of law. In case follow-up actions are required, the PMC will ensure that the actions are taken and documented and will share this information with the head of the community committee, other GRC members, and the PCU.

PCU will have the overall responsibility for timely grievance redress on environmental and social safeguards issues. The Project Coordinator in Khorezm Province will be the focal person for facilitating the grievance redress at the local level.

Documentation of grievances and reporting

The grievance will be processed in 15 days at each tier, and written communication will be sent to the complainant at each tier. A complaint log will be maintained at the PMC and PCU, with details of the complaint lodged, the date of the personal hearing, actions taken, and the date of communication sent to the complainant. The PMC is responsible for reporting the complaint log to PCU every month. The PCU is responsible for gathering the grievance statistics at two tiers and in the national complaint handling system,

compiling the data in the Quarterly Project Progress Reports and Semi-annual Environmental and Social Monitoring Reports, and reporting to AIIB.

Disclosure of GRM

During the detailed design of the subprojects, the GRM will be presented in the ESIA/ESMP and LARP/LRP/RP. Through stakeholder consultations, the local population will be informed of the detailed description of the subproject, its impacts, and the GRM system.

Flyers, information billboards in the community centers (makhalla committees), and local mass media will be used to distribute the GRM information, including the members of the GRCs and their contact information. The same information will be presented at the construction sites and community centers. The information on Tier-2 GRC will be announced on the website of UzWJSC, Khorezm Suvtaminot LLC, and district khokimiyat.

8.10. Monitoring and Evaluation

The regular monitoring of the implementation of LARP/RP/LRP will be through:

- Semi-annual reports, which will be submitted to AIIB by the PCU with PMC and will describe the progress of the implementation of resettlement activities.
- External review mission on the project, where the monitoring will take place twice a year to ensure that land acquisition and resettlement activities are carried out in accordance with the approved RP or LRP and RFP.

Both monitoring instruments will detail the status of the implementation, including any pending issues, and follow-up actions taken to address those issues. The main indicators specified in the approved RP or LRP will be the focus of the monitoring and evaluation. These indicators will include:

- Consultation process.
- Eligible PAPs.
- Agreed compensation level and forms.
- Payment of compensation and delivery of resettlement assistance.
- Implementation of livelihood restoration program.
- Effectiveness of grievance handling by the project, including number, type, and nature of complaints received and redressed.
- RP or LRP disclosure and transparency during land acquisition.
- Provision of regular monitoring reporting.

Depending on the nature and complexity of the RP or LRP and their implementation stage, the internal monitoring could be undertaken by the PCU with PMC on weekly, monthly, or quarterly basis. It is recommended to conduct monitoring surveys to gather the community's perception regarding the resettlement and project activities. This will help to gain insight into the success of relocation and the community's attitude towards the project and water utility. It is important to conduct a comprehensive socio-economic survey after the completion of resettlement and the project.

Post LARP/LRP/RP implementation evaluation will be carried out in three months upon completion of each LARP/LRP/RP implementation.

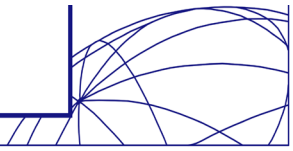
8.11. Reporting

The project will set up a reporting system that will accomplish the following:

- Provide timely information on all resettlement activities due to the project.
- Identify any grievances that have not been resolved and require immediate attention from key project stakeholders.
- Document the timely completion of project resettlement obligations for all permanent and temporary losses.
- Evaluate whether all PAPs have been compensated per the RPF requirements and principles and whether they have better living standards than their situation before being physically and economically displaced.

LARP/LRP/RP Implementation Report will be prepared by PCU and PMC upon completion of all entitlements.

LARP/LRP/RP Completion Report will be prepared by PCU within two months after completion LARP/LRP/RP implementation.



Appendices

Appendix 1 – Data Gathering, Survey Checklists, and Assessment Procedure

Appendix 2 – Terms of References for Preparation of ESIA

Appendix 3 – Terms of References for Preparation of ESMP

Appendix 4 – Terms of References for Preparation of RP

Appendix 5 – Asbestos-containing Material Management Plan

Appendix 6 – Public Consultations

Appendix 7 – TORs for Environmental, Social, and Gender Specialist

Appendix 8 – Resettlement Planning Framework