



PROJECT DOCUMENT
[Kazakhstan]

Project Title: Business Ecosystem Development for Sustainable Irrigation in Kazakhstan

Project Number: 01005200/1521414

Implementing Partner: UNDP

Start Date: 18.11.2025

End Date: 31.12.2029

LPAC Meeting date: 21.05.2026

Brief Description

Climate change exacerbates water scarcity, leading to increased floods, droughts, and other water-related disasters, with a projected 20% reduction in renewable water resources for every 1°C rise in global temperature. Already prone to climate change due to its arid conditions, Central Asia is one of the most vulnerable regions to climate change. The region is heavily reliant on water resources and a majority of its water consumption is for the agriculture sector which has the problem of inefficient irrigation practices. Kazakhstan is also experiencing worsening water-related disasters, highlighted by recent severe flooding, and increased water scarcity, impacted by new infrastructure projects in neighbouring regions, necessitating improved irrigation and water management strategies to mitigate future risks. The Eurasian Development Bank (EDB) in partnership with the United Nations Development Programme (UNDP) expressed interest to support the Government of Kazakhstan to address these issues through the full scaled Project "Business Ecosystem Development for Sustainable Irrigation in Kazakhstan", 2025-2029. The objective of the Project is to enhance water use efficiency and prevent water shortages by supporting the transition from traditional to modern irrigation practices in Kazakhstan. The Project can be replicated in other Central Asia countries with similar water-related issues by transferring experiences gathered and technologies applied during the implementation of the Project. The implementation strategy has the potential to trigger economic growth in the agricultural sector with an increase in food production in the region and can pave the way for demand for a modern irrigation industry. The Project incorporates regulatory, institutional, and infrastructural components, and capacity building to increase water and energy efficiency in agriculture. This will be achieved through the introduction of innovative digital technologies such as modern/smart irrigation systems, improved agricultural practices, massive trainings, cultural changes, and the generation of value chains related to the local potential for production, design, construction, maintenance, and efficient utilization and management of essential irrigation infrastructure components. The implementation of this Project will contribute to reaching several Sustainable Development Goals, not just SDG 6: Clean Water and Sanitation.

The Project has 5 components:

Project Component 1: Digitalization for improved water resources management

Project Component 2: Regional centres of modern irrigation (CMIs): organization of the support network

Project Component 3: Piloting modern resource-saving technologies and creating a business ecosystem for modern irrigation

Project Component 4: Multi-purpose water management and dam development

Project Component 5: Regulatory and institutional development for sustainable irrigation

Contributing Outcome (UNSDCF, CPD, RPD):

(UNSDCF) Outcome 3. By 2030, all people in Kazakhstan, especially the most vulnerable, benefit from enhanced age and gender-sensitive environmental resilience, as well as inclusive, rights-based climate, nature and pollution action and sustainable management of natural resources.

(CPD) Output 3.1: Policies, programmes, capacities, tools, and systems are strengthened to enhance environmental resilience, climate change adaptation and disaster risk management benefitting women and vulnerable groups.

Total resources required:	5,304,600 USD
Total resources allocated:	5,304,600 USD

United Nations Development Programme

Indicative Output(s) with gender marker¹:
Outputs 1.1, 1.2, 2.1, 2.2, 3.2, 3.3, 4.2, 5.2 (GEN1)

Agreed by (signatures)²:

UNDP	
Katarzyna Wawiernia, Resident Representative	<i>K. Wawiernia</i>
	<i>21.05.2026</i>

¹ The Gender Marker measures how much a project invests in gender equality and women's empowerment. Select one for each output: GEN3 (Gender equality as a principle objective); GEN2 (Gender equality as a significant objective); GEN1 (Limited contribution to gender equality); GEN0 (No contribution to gender quality)

² Note: Adjust signatures as needed

I. DEVELOPMENT CHALLENGE

Climate change has a detrimental effect on water resources, causing various water-related disasters such as floods, droughts, wildfires, and more. Water scarcity is already a major global environmental issue, intensified by extreme weather conditions and rising average temperatures. It is projected that each 1°C increase in the global average temperature will result in a 20% reduction in renewable water resources³.

Central Asia is prone to climate change in terms of water scarcity as the region falls within the arid and semi-arid zones, and also faces an accelerated increase in average temperature which intensifies the problem. The changing climate conditions have led to a 30% decrease in glacier surface area in Central Asia over the past 50-60 years, increasing the frequency and severity of floods and landslides caused by the melting of snow caps⁴. An increase in average temperature in the already drought-prone region means Central Asian countries are likely to face droughts more often at a more intensive scale. For example, it is predicted that the annual probability of climate-related droughts in Tajikistan could increase to over 30% by the end of this century, which is ten times more than the current rate⁵. The region's high dependence on water resources and low economic productivity of water use are only intensifying its vulnerability to climate change. In Central Asia countries, the key water-consuming industry is agriculture, where 79% of water usage is allocated for irrigation purposes⁶. Therefore, to address water scarcity and inefficient water usage in the region, it is essential to improve irrigation practices in the region.

Kazakhstan faces imminent climate challenges with a projected temperature increase of 0.8-1.2°C and a 1-3% decrease in precipitation by 2029. Although it does not appear as big shifts at first glance, these changes impact considerably on hydrological regimes through faster snow melting which leads to higher runoff rates and less infiltration. Flow in rivers will increase over a short period of time every year, giving rise to higher flood risk. In addition, the reduction of infiltration will cause less soil moisture and less groundwater recharge, and consequently lead to a reduction of baseflow in the rivers with reduced water availability during the dry season. Water supply for agricultural purposes will be particularly impacted.

This situation will aggravate in the near future and the intensifying situation is already shown in 2024 when the most severe flood in decades occurred in Kazakhstan. As highlighted in recent research publications of the Eurasian Development Bank, Central Asia will face an acute water crisis in the coming years. The newly built Qosh-Tepa Canal in Afghanistan will significantly contribute to an aggravation of water scarcity in Central Asia. Water abstractions of up to 10 BCM per year are expected from the 22 BCM of the Panj River runoff in Afghanistan and the 80 BCM of runoff of the Amu Darya River. The withdrawals do not affect Kazakhstan directly but will have an indirect impact through scarcity of food supplies in the neighbouring country of Uzbekistan, migration to Kazakhstan, and economic decline spreading across borders.

Agriculture accounts for 60% of water consumption in Kazakhstan, with irrigation being the primary consumer. Kazakhstan has 96,000 km of irrigation canals including those that cross country borders. The area of intensive irrigation is projected to increase from the current 300 thousand hectares to 450 thousand hectares by 2025 and further to 750 thousand hectares by 2030. These expansion plans will cause a reduction in streamflow. In the absence of a clear water allocation plan, it will lead to a decline in water availability from upstream to downstream. Evaporation and leakage losses through canals averaged 20% from 2020 to 2022, reaching an estimated 40% when factoring in off-farm, on-farm canals, and weak irrigation practices. In southern regions, where most irrigated agriculture is located, the current use of water-saving technology does not exceed 3% of irrigated land. From January 1, 2024, the weighted average water tariff for farmers will increase by 1 tenge per cubic meter, which is likely to encourage the adoption of water-saving technologies. However, the success of this initiative will depend on addressing the barriers to venture into a new technology. Support is required with regard to capacity building and the provision of monetary incentives through subsidized training courses and demonstration how water metering and smart irrigation can save money and water and at the same time provide improved food production.

II. STRATEGY

A) Project Objective

The Project supports the Ministry of Water Resources and Irrigation (MWRI) of the Republic of Kazakhstan to achieve the objectives of the concept of water resources management system development in the Republic of Kazakhstan for 2024-2030, drafted to address the issues of conservation and efficient use of water resources. The Project will partially contribute towards achieving country-level water resources management goals and objectives through its Outputs, each contributing to different measures envisaged in the Concept. Specifically, the Project's five Outputs will potentially contribute to the following items in the Concept:

³ <https://news.un.org/en/story/2022/05/1118722>

⁴ <https://www.adb.org/news/features/numbers-climate-change-central-asia>

⁵ <https://blogs.worldbank.org/en/climatechange/global-temperatures-rise-central-asia-needs-enhance-disaster-preparedness>

⁶ <https://eabr.org/en/analytics/special-reports/efficient-irrigation-and-water-conservation-in-central-asia/>

United Nations Development Programme

- Saving irrigation water as a result of the introduction of water-saving technologies in irrigated agriculture (in million m3 per year; 1975 by 2029)
- Reduction in the level of water losses in agriculture during the transportation through main and inter-farm canals (from 50% to 25%; 30% by 2029)
- Coverage of the Water Management System with digital technologies (coverage growth up to 40% by 2030)
- Increase in the volume of additionally accumulated water (2.4 km3 increase by 2030; 1.5km3 by 2028)
- Decrease in the level of pressure on water resources – expected decrease from 57.2% to 53.2% in the Aral-Syrdarya river basin and from 56.8% to 52.8% in the Shu-Talas river basin by 2030
- Increase in the number of hydrological posts, including posts on transboundary rivers
- Regulatory and institutional development for sustainable irrigation

A holistic view across irrigation, energy efficiency, agriculture, water storage and the environment will be taken to achieve national goals such as economic efficiency, climate resilience, and the creation of green jobs. The Project builds upon its close partnership with the government of the Republic of Kazakhstan regarding water resource management. The Project is based on the following Theory of Change:

If partnerships with the local and national authorities are established, as digitalization and water metering are not limited to local data management systems, to reach and refine an understanding of how to move forward, design and operationalize coordination mechanisms, and envisage data transfer in order to contribute to a larger water information system where complex analysis like water balances, loss calculations, trade-offs calculations for crop-irrigation-water requirements will be performed, and

If the pilot projects at the local level are completed (and older pilot projects analysed) before upscaling advanced irrigation technologies to a country level in order to minimize the risk by fully understanding and properly managing all issues identified at the pilot stage, and

If the pool of qualified engineers specializing in water, irrigation and digitalization is created through the training of well-qualified engineers with experiences in construction in Kazakhstan to overcome the lack of qualified engineers related to planning, designing, selecting, constructing and using new irrigation technology which is key to the successful establishment of regional irrigation centres as knowledge and training hubs, **assuming** that knowledge for both the construction of water infrastructure and irrigation schemes is an add-on for the general engineering or construction education, and thus engineers with a sound background in the construction of water infrastructure can be trained fast to become specialists in planning and designing new irrigation technologies, although it may take a bit longer to absorb the digitalization part such as water meters, proper data transfer and data management, and

If the knowledge base and demand base are created as soon as possible, **assuming** that the development of training modules and their roll-out enables local SMEs and water management authorities to design, build and maintain water metering systems, water pipelines, drip irrigation systems, etc., and

If a multi-purpose water management combining irrigation and water storage with a reservoir can create synergy, **assuming** that the water-saving potential of the combination can bring development opportunities for larger irrigation schemes and water opportunity for other sectors, and

If institutional arrangements in combination with an adequate regulatory framework are developed in parallel to lay the foundation for dynamic, consumption-based water tariffs and their enforcement, **assuming** that at this point water metering, digitalization and regulations with adopted institutional structures formed an aligned concept bringing technological advancement, institutional development and digitalization together, and

If tariffs considering actual consumption of water are introduced, the key driver for large-scale deployment of modern irrigation systems and a sensitive component to convince and get the commitment of stakeholders, **assuming** that a high level of public interest, acceptance, and support of local authorities and local businesses are acquired through several specific instruments and mechanisms, including a proven increase of land productivity after the modern technologies are applied, in combination with awareness-raising and communication campaigns⁷, and

If massive investments in component manufacturing and relevant markets develop, **assuming** that the success of previous steps and positive examples of pilot projects provide evidence for low risk of investment and show the market potential to the investors,

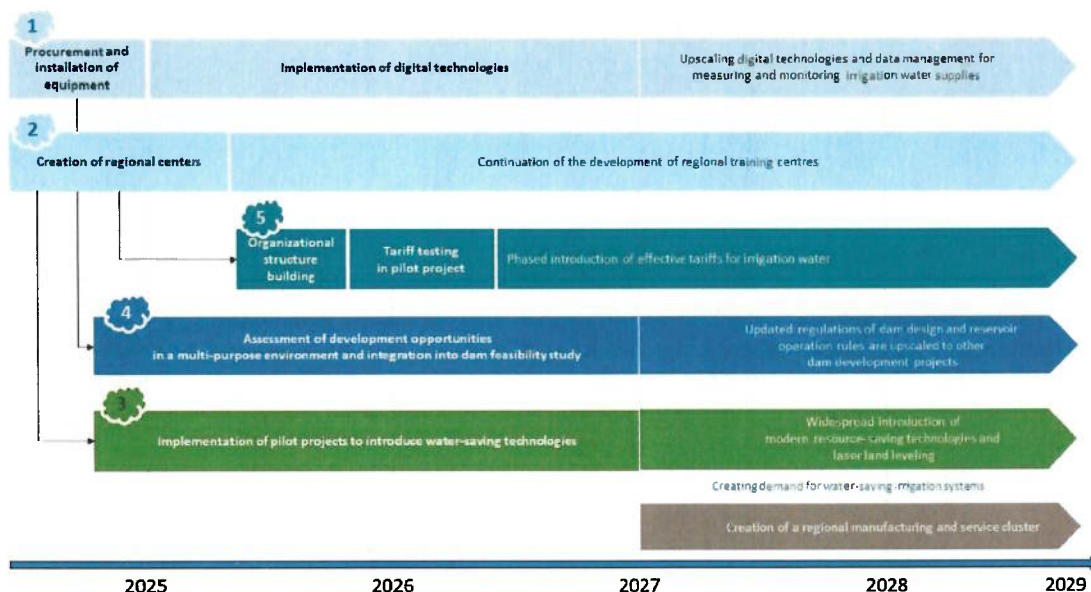
THEN replicable practices of transitioning from traditional to modern irrigation practices can be created to enhance water use efficiency and prevent water shortages in Kazakhstan and other Central Asian countries through a holistic approach incorporating regulatory, institutional and infrastructural components, and

⁷ Such as: increased productivity of land may be a strong motivator to invest in pipelines, drip irrigation, etc. If the same area of land may produce a significantly larger volume of products, the irrigation investments are best justified; irrigation investments must be supported by programs increasing both accessibility and affordability of loans for the end users and for the service ecosystem of small businesses, by a carefully designed and localized combination of loan guarantees and subsidies; on the level of the regional communities and local authorities, the positive impact on SME development in the area of irrigation may be a valuable side-effect.

contribute to the achievement of SDGs, including poverty reduction through economic growth, eliminating hunger, access to clean water and responsible consumption.

In the initial phase, the focus will be on digitalization in the water sector and precision agriculture practices. This important aspect will create conditions and incentives for investments in water saving. Deployment of new technologies will reveal knowledge gaps and adjustments needs of training modules towards the end of the Project through evaluation of the implementation.

Throughout all stages and components of the Project, capacity building and training will be present as a cross-cutting element. The Project will involve the participation of local communities and public organizations, along with the reinforcement of gender equality and the role of women. Additionally, the Project aims to involve youth during all stages of Project implementation to highlight the potential related to income generation, economic benefits, and knowledge sharing. Support through this Project funding will fade out in 2029.



B) Project Components

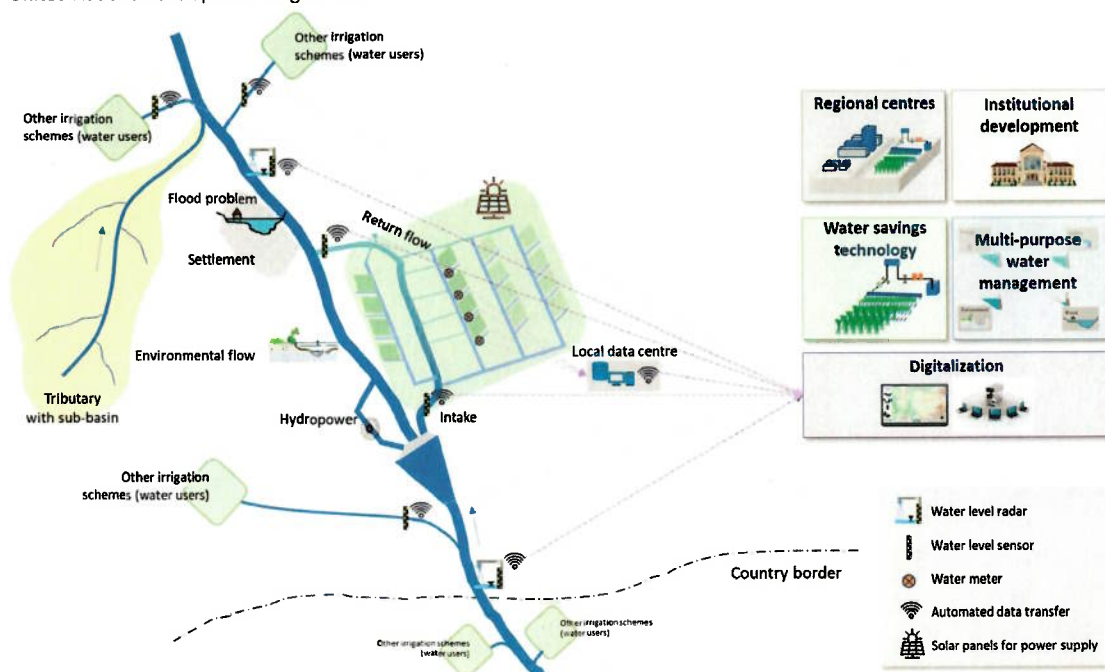
Project overview

The Project is intended as a comprehensive, large-scale and holistic transformational intervention in which various burning water management issues are tackled and linked. The schematic below shows the major components and provides also an illustration of the intended scope of the pilot projects.

There are five components:

1. Digitalization for improved water resources management
2. Development of regional training centres
3. Piloting modern resource-saving technologies and business development
4. Multi-purpose water management and dam development
5. Regulatory and institutional development for sustainable irrigation

Digitalization is the fundament and provides the knowledge base on which scientific analysis, modelling, forecasting, water allocation and decision-making in a multi-purpose environment is built upon. Digitalization will start together with the development of training centres. The development of regional training centres is the prerequisite in order to introduce modern water-saving technology and to help replicate its application. This goes hand in hand with the implementation of pilot projects in which the water-saving technology in combination with digitalization is applied. The pilot projects are the initial stage before upscaling at a national level can be undertaken.



Reservoirs are key elements in water resources management, in particular under climate change when water storage becomes critically important. The Ministry of Water Resources and Irrigation of Kazakhstan (MWRI) has highlighted that the sustainable development of reservoirs is one of their main objectives and therefore has expressed the wish to integrate reservoir development and management into this Project. Reservoirs provide the means to address multi-purpose water management. Hydraulic structures and operation rules must be able to cope with the increasing dynamic of hydrological regimes with an augmentation of extreme conditions. This is currently not the case to the extent needed in Kazakhstan. Finally, the regulatory framework and institutional structures must keep pace with the changing conditions and have to evolve accordingly. The technological advancement of digitalization, the introduction of new water tariffs, the adaptation of regulations related to water-saving technology and the definition of standards related to dam design and reservoir operation are the fields that will be addressed in Component 5. This component is essential to maintaining the long-term impact and effectiveness of the Project's outcomes, ensuring that the benefits extend well beyond its conclusion.

The immediate outcome of the Project should be a large-scale transformation of the irrigation sector in Kazakhstan. This transformation will be achieved through the introduction of innovative digital technologies, such as modern smart irrigation systems, improved agricultural practices, extensive training programs, cultural change, and the development of value chains. These value chains will focus on local capacity to produce, design, construct, maintain, and effectively manage key components of irrigation infrastructure, including water-saving irrigation technologies, water meters, and irrigation plastic pipes. Leveraged market instruments such as tariffs, subsidies, and other mechanisms will allow to effectively regulate and stimulate the development of water resources. The Project's integrated approach is expected to attract private investment in the local production of components for modern irrigation systems, driven by the growth potential of the irrigation sector.

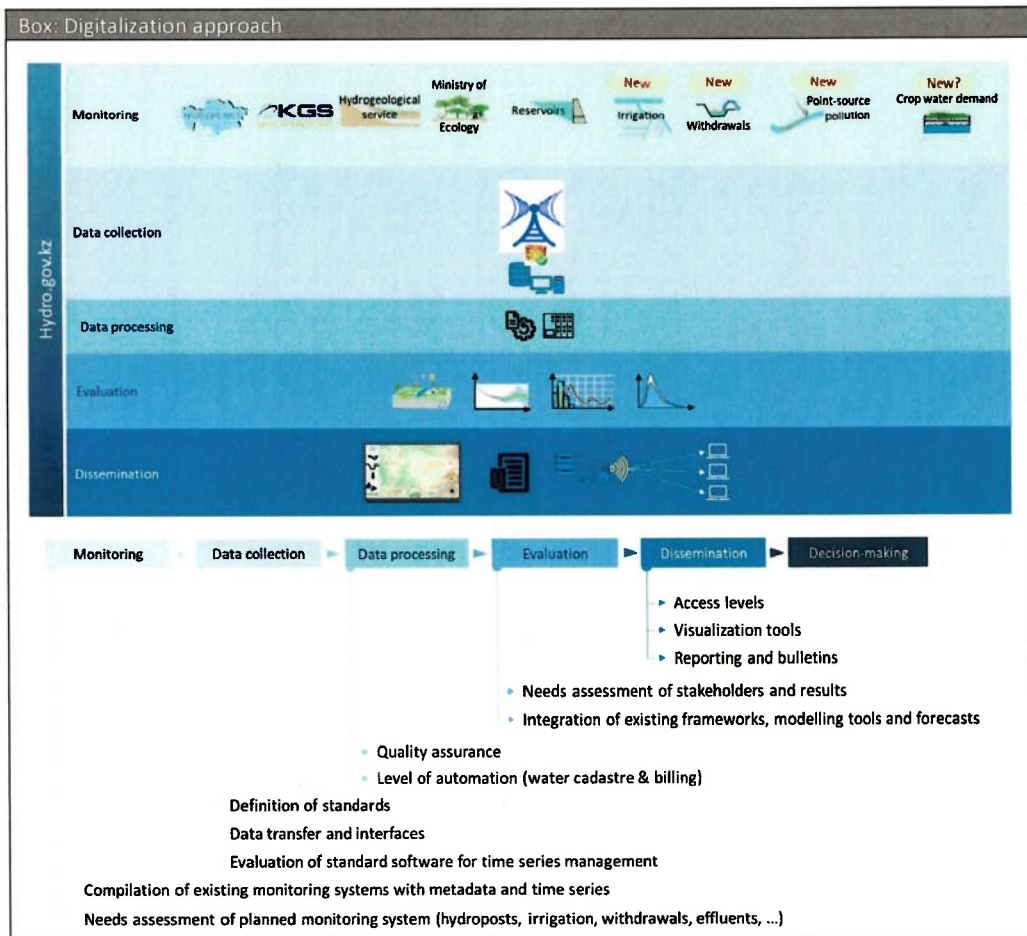
Adaptive management and joint effort by UNDP and EDB

The condition of the irrigation sector in Kazakhstan and Central Asia is generally not advanced. UNDP and EDB will both actively review and manage the implementation of the Project in the format of regular reviews of its performance. UNDP and EDB will undertake their best efforts to harmonize the activities of the Project with the other activities in the water sector, partner with similar initiatives to boost synergies and optimize the use of the Project's budget to maximise the positive outcomes. UNDP and EDB will encourage adaptive management, periodic revisions of the scope and content of activities, tailoring the practices and regular revision of Project risks.

Project Component 1: Digitalization for improved water resources management

As this component focuses on creating a comprehensive digitalization approach to water management, with a possibility of upscaling to a national level, it should be considered a priority. The component covers the whole data flow from monitoring up to dissemination and support for decision-making. The current national water information system developed by Information analytical center of water resources will serve as the entry point. This GIS-based platform uses PostgreSQL and PostGIS databases and is a multi-tier application. Water

infrastructure data is already digitized and incorporated. I/O Interfaces, timeseries functionality and evaluations tools must be added.



Monitoring

1. Needs assessment of monitoring points for irrigation schemes, water abstraction, point-source pollution for water balance calculation, water cadastre and billing processes
2. Desired sensor and data transfer technology are selected based on the location
3. Assessment of required memory, data interfaces and computational effort for selecting adequate hardware
4. Installation of monitoring equipment, including water meters, water quality sensors and water accounting software and system

Item 1 refers to the number of observation points required to enable calculations of water balance and water consumption with sufficient accuracy. Monitoring at border points will have the highest priority in the first place, followed by monitoring of water abstractions. Item 2 refers to the use of different technology depending on the location. It is advisable to employ a high standard for the monitoring of water levels in streams with water level radar in order to make readings robust and unaffected by river bed movements. In contrast, irrigation feeder canals and main irrigation canals with regular cross-sections can be observed with high quality water pressure sensors installed at the bottom of a cross-section. Water meters in combination with smart irrigation technologies such as drip irrigation are the adequate solution at the field level.

Data collection

1. Determination of standards for time series formats and raster data formats
2. Determination of appropriate software interfaces (e.g. FTP, REST services, etc.)
3. Integration of cyber security aspects at all endpoints and interfaces
4. Determination of roles and responsibilities for data collection and data transfer

The technical background must be specified. This is often an underestimated task. Homogeneous standards ease communication, data exchange functionality and provide the means to make an application faster and more robust.

Data processing

Data processing distinguishes between raw data as they are transferred from data loggers and production data. Production data undergo data quality assurance procedures and are used in all following calculations and processes.

1. Automation of quality assurance (detection of outliers, data gaps identification and gap filling)
2. Manual quality assurance procedures
 - a) Responsibilities
 - b) Access levels for controllers

Evaluation

Evaluation addresses basically three aspects:

- A. Calculation of water balance and water availability with forecasting (river / sub-basin level)
- B. Irrigation scheduling and timing
- C. Water accounting at the water user level (irrigation scheme and field level)

All modules will be generic and can be applied to different regions, rivers, sub-basins, irrigation schemes, etc. This is standard in hydrological and river basin modelling. There are software products available which fulfil the requirements and can be used without costs. Therefore, one of the first activities will be the selection of tools followed by configuration, calibration and verification.

Water balance module for water availability:

The knowledge of current and predicted water availability is essential for water allocation, crop and field preparation, and reservoir operation. Decisions have to be made at the beginning of the crop season based on the predicted water availability, where water availability is associated with probabilities due to uncertainties of predictions. The predictions are seasonal and require hydrological modelling software and seasonal forecasts. The tool must be able to calculate the current water balance and to provide an outlook of the future water availability up to 6 months ahead (seasonal forecasts, for instance, 7 months ensemble forecasts from ECMWF). The water balance assessments have to be performed for a river stretch with its tributaries (sub-basins) and must include water abstractions, losses and gains along the river stretch and in the sub-basins. The river stretch is delineated through observation points upstream and downstream. The fact that not all tributaries will be equipped with a hydrological monitoring station calls for the application of a river basin model in order to have a full coverage of all sub-basins and calculate runoff from unobserved tributaries/sub-basins. The second reason why a model is unconditionally required originates from the application of forecasts. The output of this module is water balances and water availability aggregated for predefined time horizons with details about all water balance components. Depending on the outcome of item "Dissemination" the module must be able to add water allocation rules so that benefits and losses for various water users can be generated as reports. The water balance module will run with a daily timestep and should offer the following sub-modules:

- Snow accumulation, snow melting and rainfall-runoff procedures including the calculation of potential and actual evapotranspiration
- Flow routing
- Water allocation rules and reservoir operation
- Conceptual groundwater modelling
- Hydraulic modelling of weirs, diversions, pipes
- Calculation of crop water requirements considering crop coefficients, and cropping patterns (see also irrigation module)
- Possibility to run in an operational mode consuming observations and forecasts

Water accounting module:

Water accounting will be the most fine-grained tool in the ecosystem of modules. It will go down to the water user and field level and keep track of water users' profiles, water consumption, field size, and crops and is considered the tool for applying water tariffs. Whether the tool will embed sensitive data or even payment procedures is to be decided during the Project. A prerequisite is water metering at the field level. Integrated solutions are available combining water metering with data transfer and data evaluation. Requirements that have to be taken into account are automated timeseries export for integrating the data gender in the water information system.

Dissemination

Various stakeholders with different requirements will be linked to the information system. The activities linked to dissemination are:

- Needs assessment of reports required to inform the report capabilities of the modules
- Development of result presentation functions for different levels of sophistication (professional to water user to interested public)
- Definition and coding of access levels with authentication
- Development of templates and forms for water cadastre and billing (linked to the water accounting module)

Training

Training related to the digitalization process incorporated the following:

- Installation and maintenance of monitoring equipment including water meters
- Reading and data management, in particular water meter, water accounting for water cadastre
- Module setup, configuration, calibration and simulation with quality assurance
- Use of the modules and result interpretation

Resolving an issue implies that the issue must be understood, measured and controlled in the first place, starting from the measurement of available water, for instance, monitoring at border points. In the context of efficient irrigation, it means the water consumption and balance must be calculated and predicted, risks – understood and mitigated, and the use of water must be planned and paid for. All these activities must be fast and efficient. To achieve this, a fully integrated digital solution must be in place: water data collection, analysis, forecasting, decision-making, as well as administration of water usage, measuring commercial consumption, billing and collection of payments. This alone will lead to a significant reduction of risks associated with water scarcity because water will become a commodity with a price.

On top of that, digitalization is the first step towards thorough planning and managing irrigated areas and associated economic growth. As with any innovative approach, this must be first piloted to identify and correct any implementation issues and build experience. The Project will pay attention to the training of all participants in the digitalization process: starting from the high level of the operators of a water information system, water systems modelling professionals and users, down to the management of water data collection infrastructure, water meters installers (private businesses), water meter inspectors and local water management authorities.

Water digitalization will have one more implication: the system will be linked, and to a certain will shape the way for regulations related to volume-based tariffs for water use. Digitalization is key to achieving this. Tariffs are vitally important to overcome the issue of “water egoism”, when the consumers upstream have enough water and are not motivated to invest in saving water, while consumers downstream lack sufficient water. This, in turn, implies that the outcomes of the Project cannot be reached without a comprehensive digitalization approach to water consumption.

The outputs and activities can be summarized as the following:

Output 1.1: Operational water information system integrating the entire data flow from monitoring to dissemination is ready for being upscaled.

Activity 1.1. Development of the digitalization/monitoring strategy and stakeholder engagement.

Activity 1.2. Development of modules (water balance, irrigation scheduling, water accounting).

Activity 1.3. Selection, procurement, installation of monitoring equipment. Calibration, establish data transfer connectivity to servers, field testing.

Activity 1.4. Integration of the modules to platform.

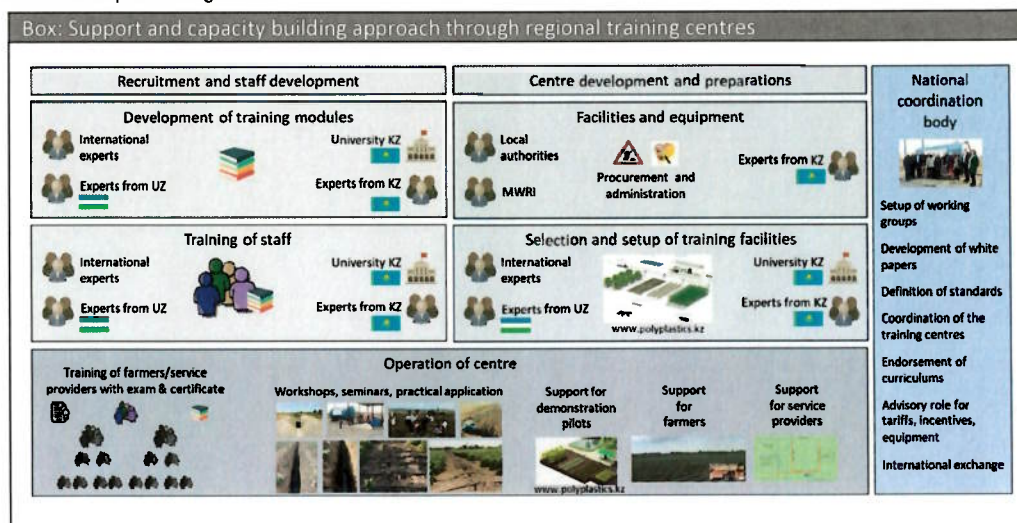
Output 1.2: Result generation is enabled, water availability is calculated, forecasting and planning of water allocation is enabled, risks connected to water shortages are known.

Activity 1.5. Trainings on monitoring equipment.

Activity 1.6. Training on modules. Configuration of developed modules and their application.

Project Component 2: Regional centres of modern irrigation (CMIs): organization of the support network

This component will aim to perform several activities necessary to create enabling conditions for the shift towards modern irrigation systems and to establish regional modern irrigation centres for knowledge accumulation and capacity building. A systematic change in the whole ecosystem of irrigation is required to build a modern irrigation system. This will be achieved by starting with a few pilot locations prior to a nationwide rollout. The ecosystem will grow gradually in pilot locations, adapting itself to be more efficient by taking into account lessons learned while growing.



The regional modern irrigation centres will organize regional-level activities and become knowledge accumulation hubs. The Project starts with two centres. Depending on the available funds, more centres will be created. Already gathered experience and lessons learned will be transferred from centre to centre with dedicated knowledge transfer workshops. In such a way, the centres will make the growth of the ecosystem more efficient.

The capacity-building aspect of the regional centres is important and entails the education of staff for the centre itself at the beginning before the provision of training for farmers and service providers (SMEs) can commence. It is difficult to find local personnel with knowledge about modern irrigation technology who can serve as trainers. The regional centre's capacity building program will start with engaging and training qualified engineers with an appropriate technical background (construction, hydraulic engineering) with the goal of qualifying them as trainers for modern irrigation. The responsibilities of the permanent staff will be:

- providing training for the local irrigation ecosystem participants
- evaluation monitoring and providing a response to feedback
- providing support for the pilot projects
- assisting UNDP with knowledge gap identification
- tailoring requests for international expertise

Enabling conditions are also needed on a national and international scale. The national coordination will be structured by creating a National Coordination Body as a steering committee with an advisory role to the government.

Selection of technical staff

1. Development of job description and ToR
2. Establishment of an evaluation committee and development of evaluation criteria
3. Advertisements
4. Selection process of 2 employees with the engineering background per a centre

Development of training modules

The development of training modules includes the training material and procurement of equipment. It can further be distinguished between the education for the permanent staff at the centre and the training for farmers and SMEs, which will be trained when the centre is in operation. Permanent staff will become trainers after having passed their education with exams. The training content of the permanent staff requires a higher-level perspective on top of the hydrometeorological and technical background.

Training material for farmers and SMEs:

- Hydrometeorological background
 - Climate – land cover - soil interaction
 - Calculation of potential crop evapotranspiration
 - Soil moisture conditions
 - Crop water requirements, crop water stress
 - Irrigation scheduling
 - Use of satellite images, drones, etc.
- Irrigation technology
 - Irrigation methods and suitable crops per technology
 - Selection of irrigation methods
 - Necessary components and equipment
 - Planning and design of a system and individual components
 - Use of machinery
 - Automation
- Land and soil preparation
 - Field levelling
 - Irrigation effort and field size
 - Soil improvement
 - Drainage
- Water accounting
 - Principles of flow measurement and simple measurement techniques
 - Water accounting and function of water meters
 - Soil moisture sensors
 - Water use efficiency
- Economical considerations
 - Water tariffs
 - Selection of equipment, costs and maintenance
 - Cost-benefit analysis
- Construction
 - Installation of pipes, welding of PET pipes
 - Installation, maintenance of drip/sprinkler irrigation systems

Additional material for permanent staff - trainers:

- Design and system development
- Technical, financial, socioeconomic, gender factors; conflict management
- Asset management
- Irrigation financing
- Managing procurement

Training of staff

Training of permanent staff is considered a joint activity by different actors:

- International experts
- National experts from Kazakhstan
- Universities from Kazakhstan

There are theoretical and practical courses. A milestone will be the development of a curriculum with theoretical and practical exams. Provision is made for the invitation of international experts contributing to the development of training material and training programs. Cross-border exchange is a matter of fact and experts from Uzbekistan and other Central Asia countries will be invited to participate as trainees as well as contribute as lecturers. We foresee a contribution from Universities from Kazakhstan as they will be the responsible entities for the education of qualified engineers in the long run. Local expertise in agriculture is required to adjust the training accordingly. A study tour to country/ies with highly developed irrigation systems is considered but will depend on the available budget.

Development of the centre

The development of the centres will largely depend on available funds. The training centres in Uzbekistan can serve as a role model and a trip to a centre will be conducted prior to the commencement of centre development in Kazakhstan. The development process has to consider rules for procurement, purchase of equipment, maintenance, and general services. Since practical aspects will play a role in the training program, modern irrigation technology must be acquired on demand.

An important aspect is the development of an internet presence of the centre. A website is essential and must encompass as a minimum:

- Resources section (download options for brochures, best practice guidelines, legal regulations, information about regulatory authorities, investment programs, government aid and funding)
- Frequently Asked Questions (FAQ)
- Calendar with events
- Documentation of case studies
- Detailed Information about the pilot projects
- Application section for technical and financial support with forms
- Contact and request section
- Links to partner organisations

Selection and setup of training facilities

The selection of training material with theoretical and practical components guides the necessary stock of facilities and equipment. A minimum setup available is envisaged such as:

- Components for surface and subsurface drip irrigation
- Components for sprinkler irrigation
- Computers
- Pipes
- Water meters

Components required on demand depending on the content of practical courses are:

- Filters
- Water tanks
- Pumps
- A set of different water measurement devices with different data transfer technologies

With sufficient budget, practical application could be boosted with the availability of test fields where irrigation systems can be mounted and put into operation. Test fields require the acquisition of one or two small plots.

Operation of the centre

The operation of the centres, once fully established, will consist of the following components:

- Training of farmers, manufacturers, and engineers through permanent staff and invited lectures
 - Regular workshops, seminars, training courses
 - Courses with practical demonstrations of irrigation technology
- Support
 - for farmers
 - for service providers, system designers and equipment manufacturers
- Provision of support for the pilot projects
 - Prefeasibility assessment of pilot sites, including travel costs

The centre itself must undergo regular appraisals and will employ quality assurance mechanisms, which are set and evaluated by the National Coordination Body. The business model of the centre will be developed to ensure the sustainability of this result and the life of the centres beyond the timeframe of the Project.

Prefeasibility assessment of pilot site(s)

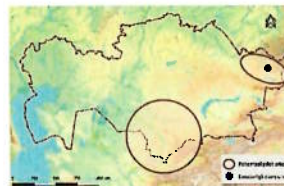
The assessment will entail:

- Criteria development, with criteria such as:
 - Suitable topography and soil conditions
 - Owners'/operators' willingness to co-operate
 - Irrigation scheme is already in place with basic infrastructure
 - Basis infrastructure does already exist (water intake, main canals, drainage system)

United Nations Development Programme

- Suitable location for monitoring stations is upstream and downstream
- Farmers are already organised in a Water User Association (WUA)
- Reservoir does exist or is planned as water source
- Site visits
- Prioritization and evaluation of locations
- Administration
 - Engagement and participation of local stakeholders
 - Land ownership issues
 - Legal aspects

Selection will focus on the two regions, one in South and one in East Kazakhstan.



National Coordination Body

The National Coordination Body will be established at the beginning of the Project in collaboration with MWRI, Ministry of Ecology and Natural Resources, Ministry of Digital Development, Innovation and Aerospace Industry, Ministry of Foreign Affairs, Ministry of Agriculture, etc. The authorities will constitute the body and contribute by nominating representatives as members.

The role of the entity is to oversee, steer and guide the Project implementation, including the development of the regional training centres. Other functions can be framed around the following topics:

- Setup and steering of working groups
- Development of white papers
- Definition of standards
- Coordination of the training centres
- Endorsement of curriculums
- Advisory role for tariffs, incentives, and equipment to the government and ministries

The shift of culture towards new, smart water-saving practices should also provide a solid umbrella to ensure that service providers, manufacturers and investors receive sufficient support from the regional centres.

Such a protective and encouraging approach is vitally important for this Project, as the only way to succeed in introducing modern agriculture and irrigation is to encourage investors to perceive the paradigm shift as a profitable investment opportunity. Only then, the investors, both small and large scale, will start their businesses in irrigation systems component manufacturing, design, construction and maintenance.

This Component has also a transboundary character. The creation of a cross-border knowledge exchange network will be embedded in order to expand this transformation process beyond the borders of Kazakhstan since the water shortage is a common challenge shared by the whole region of Central Asia.

Output 2.1: Regional centres of modern irrigation (CMIs) with sufficient technical capacities are in place to scale-up investment in the sustainable irrigation sector in Kazakhstan and to provide support for investors

The activities to achieve this output will be reviewed in light of new developments and in coordination with other donors and development, financial organizations during the Project's Inception Phase and regularly during the course of the Project's implementation.

Activity 2.1. Development of regional centres. Identification of locations and local partners, staffing and equipping of one regional centre of modern irrigation (CMIs).

Activity 2.2. Establishing a national coordination body. International and national experts - consultations and drafting of agreements / other documents

Activity 2.3. Training the personnel of the regional centres. Including study tours to other countries with highly developed irrigation systems. Study tours will include other stakeholders.

Output 2.2: Regional centres of modern irrigation (CMIs) are fully operational

Activity 2.4. Development of training courses and materials, modules design, trainings conduction.

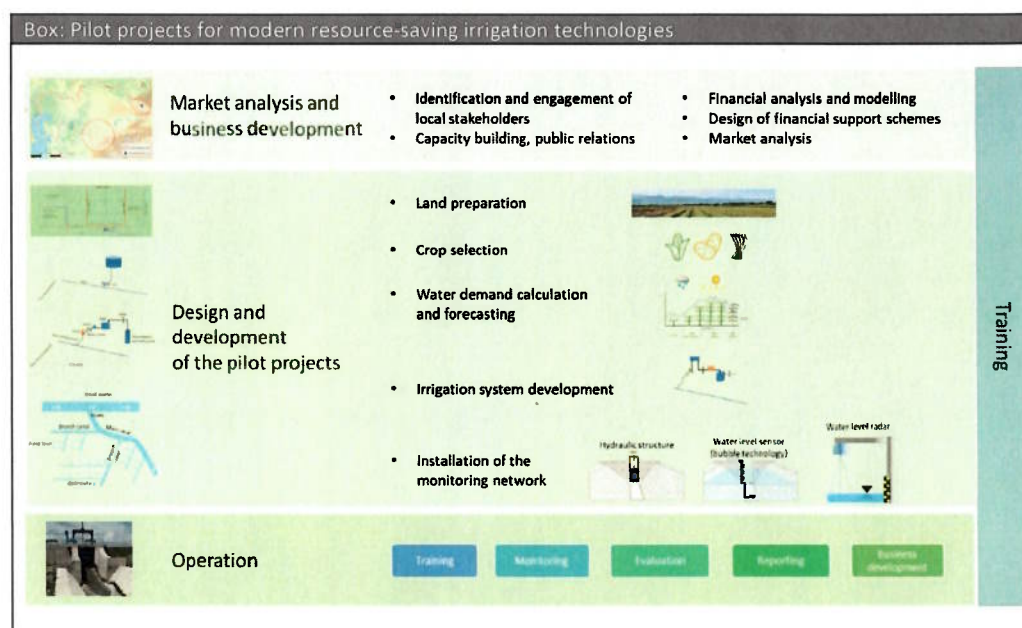
Activity 2.5. Creating a cross-border knowledge exchange network.

Activity 2.6. Planning and support demonstration pilots.

Project Component 3: Piloting modern resource-saving technologies and creating a business ecosystem for modern irrigation

This component will implement activities in the selected pilot regions with the proposed technologies.

The pilot projects are expected to accumulate knowledge, identify and eliminate issues and fill knowledge gaps. The pilot projects are intended to serve as a basis for learning and advocating smart irrigation with the objective of gaining widespread acceptance of modern irrigation practices. Prior experience from earlier implemented pilot projects in Kazakhstan will be tapped to reduce costs and to gather more knowledge. Communication activities will also become an important part of the pilots in order to bring local farmers and small businesses into investment activities, as well as gain public support and acceptance of modern agriculture practices. Last but not least, wide-scale deployment of water metering infrastructure is not only beneficial for water accounting calculations but also a new field for small business development. Such businesses are vital elements of the ecosystem. They must be supported for a fast transformation of digitalization to water management. The economic impact of such small businesses will be modelled and a tailored financial support scheme for their quick start will be designed, to be deployed via the Damu Fund or a similar development support institution. The specific pilot activities of this component are as follows:



Business development within the frame of the pilot project

- Financial analysis and economic modelling
 - MS Excel financial modelling
- Designing a financial support scheme
 - Financial support scheme design in cooperation with Damu Fund
 - Webinars
 - Support Damu in piloting the support scheme for small businesses
 - Expert analysis of applications and post-investment monitoring
- Building capacity of local financial institutions
 - Webinars and seminars for banks in the regions to support lending to the SMEs
 - Due diligence
- Market, economic and business environment analysis with gender-sensitive approaches
 - Market analysis and research to facilitate large-scale investments in manufacturing of modern irrigation components in Kazakhstan
 - Publications and events for potential investors, potentially site visits
- Creating enabling conditions for large scale modern irrigation components manufacturing quick start
- Communication campaign to promote business opportunities in the irrigation sector

Design, development of a site and training

The development of the system entails

- Landscaping
 - Precision land levelling
- Crop selection with calculation of crop water requirements with future demand projection

- Calculation will apply FAO standards, for example, the software CropWat
- Future demand projection entails the use of climate change induced temperature timeseries as they are available from for instance app.climateengine.org
- Hydrological and hydraulic design
 - Dimension of tank, filters, pipes, pumps, etc.
- Selection and installation of irrigation technology (the premise is on drip irrigation)
- Installation of the monitoring network including water meters

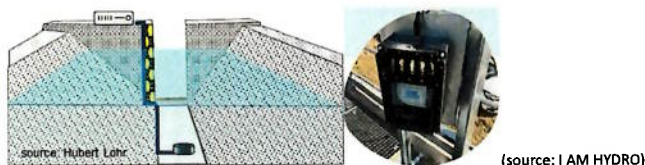
Monitoring equipment (see also Component 1)

It is the intention to apply different technologies

1. Water level radar (river cross-sections)



2. Water level sensor (main canals)



3. Hydraulic structures such as gates, venturi flume (branch canals)



4. Field level (water meter with/without data logger)



The decision to use different technologies is based on the fact that one standard is not suitable for all locations such as rivers, main canals, branch canals and farm levels. In addition, different technologies come with a wide range of costs, for example, bubble water level sensors can be implemented with data transfer at costs of approx. 2,200 Euro, water level radar systems accrue costs of 15,000 Euro, construction of pre-defined venturi flumes or gates are cheaper. Prices can vary from country to country. The number of equipment and locations can be provided once the pilot area is defined, however suggested solution will be within the Project's budget.

Output 3.1: Development for water saving irrigation systems piloted.

Activity 3.1. System development: piloting complex technology approach.

Activity 3.2. Development of recommendations on the best combination of technologies.

Output 3.2: Conditions for scaling up modern technologies created: small business ecosystem in irrigation design, construction/assembly and maintenance established.

Activity 3.3. Organizing massive capacity building. Training of service SMEs / users, awareness building, culture and behavioural changes.

Activity 3.4. Financial analysis of the typical business and design of a financial support scheme

Output 3.3: De-risking investments in localization of modern irrigation components manufacturing.

Activity 3.5. Market, economic and business environment analysis with gender-sensitive approaches and identification of enabling conditions for large scale modern irrigation.

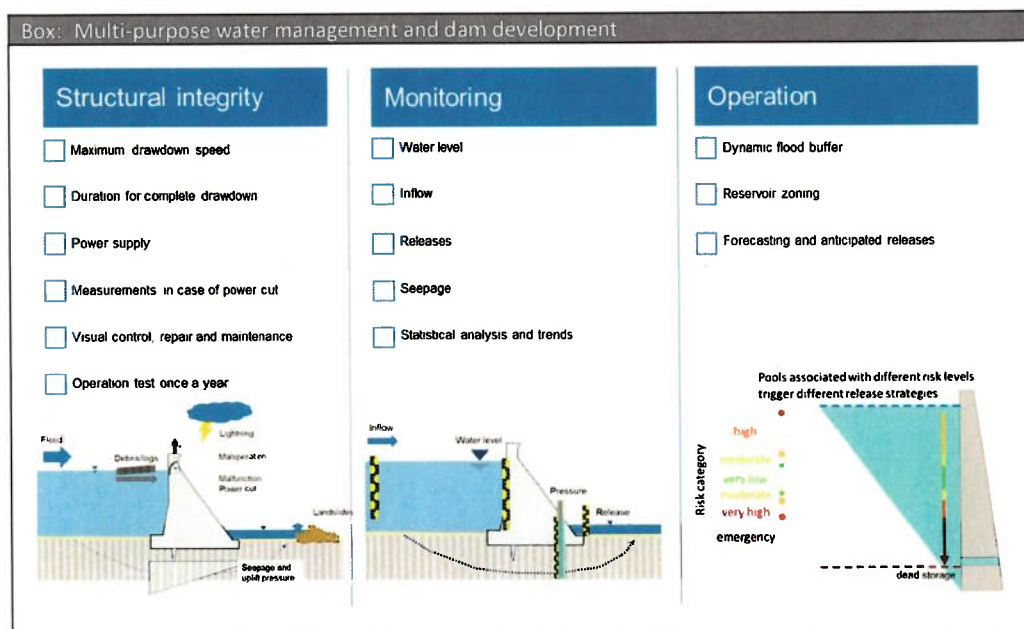
Activity 3.6. Communication campaign to promote business opportunities in the irrigation sector.

Project Component 4: Multi-purpose water management and dam development

In this Component, the Project aims to assess development opportunities by creating synergy through combining irrigation with reservoir management. The agricultural sector, in particular irrigation, is the largest water consumer, and in this sector, the water saving potential is significantly higher than in any other sector. When irrigation is modernized and water saving technologies are applied, the effect is an increase in water use efficiency. The amount of water saved brings about opportunities. These opportunities enhance water availability and could be invested in a) larger irrigation schemes (larger irrigated area) with the same amount of water compared to old technology or b) other sectors can use the water opportunity. Sectors which may potentially benefit are hydropower, environment, navigation, flood management, and recreation.

Opportunities can only be harnessed if water management can proactively be performed through the allocation of water. This is possible in combination with a reservoir: a reservoir has the means to leverage more than one purpose at the same time. Therefore, component 4 aims at assessing the development opportunities when irrigation and water storage with a reservoir are considered in a multipurpose environment. The prerequisites are:

- a) dynamic operation rules using the data from the monitoring network and forecasts
- b) adequate dam design and hydraulic structures which allow for dynamic operation rules without a risk of the structural integrity



A dam at the **Kenderlyk River** (live storage of about 60 million m³) is proposed by the Ministry of Water Resources and Irrigation to be integrated into a pilot project site. The irrigated area controlled by the dam is considered 17.5 thousand ha. The practical aspects to be considered are but not limited to:

- Monitoring of water level, inflow, and releases in near-real time is accessible at the operation centre of the dam
- Inner-annual flexible reservoir zoning plans with dynamic release rules are incorporated, taking current storage volume and anticipated inflow volume into account
- Selection of hydraulic structures to regulate a flexible flood buffer
- Assessment of maximum tolerable water level fluctuations in a given time period
- Review of spillway design floods and check floods and adaptation of spillway construction and dam structure
- Dam construction under consideration of long-lasting extreme water levels in the reservoir (important for an earthen dam, subsurface erosion and base failure)

Monitoring at the reservoir

- Near-real time observation of
 - Inflow
 - Water level in the reservoir
 - Releases

- Water level downstream
- Forecasted inflow hydrographs

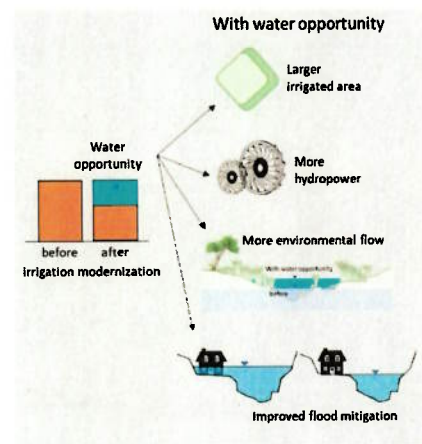
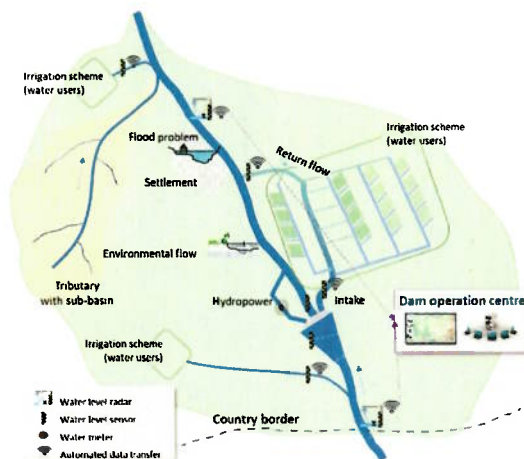
Structural integrity

- Hydrology
 - Maximum water levels
 - Water level fluctuations
- Geotechnical
 - Uplift pressure
 - Seepage
 - Stability of dam body
- Operation and maintenance
 - Hydraulic capacity of releases and spillway
 - Redundancy of power supply
 - Inspections

Assessment of opportunities

Assessment of trade-offs between water-saving potential and:

- Hydropower generation
- Flood mitigation
- Irrigated area
- Environmental flow



Output 4.1: Appropriate policies, programmes and regulations are in place to increase efficiency of water reserves utilization.

Activity 4.1. Comparative analysis of dam construction and reservoir operation. Comparison with international best practices and regulations (safety standards etc.); development of recommendations for dam design and construction, for reservoir operation rules under consideration of structural integrity

Activity 4.2. Assessment of development opportunities and development of recommendations on multipurpose use. Analysis of opportunities related to the amount of water saved for the following sectors (if applicable): hydropower, environmental flow, flood mitigation, navigation. Evaluation of the impact on reservoir operation for the target location. The geographical scope is the dam and its immediate downstream river reach.

Activity 4.3. Extrapolate the opportunities to other dam locations.

Output 4.2: Improved approach to dam design, construction and management piloted.

Activity 4.4. Complete the feasibility design of the dam. Design should be in line with the developed recommendations, taking into account the integrated approach to water management.

Activity 4.7. Evaluate the economic, social and environmental aspects and gender-differentiated impacts. Assessment should be on the influence of the pilot hydrotechnic structure on the local communities, ecosystems and economy.

Project Component 5: Regulatory and institutional development for sustainable irrigation

This component seeks to create a stable and credible business environment for the whole modern irrigation business ecosystem while efficiently combating the water crisis through regulatory and institutional development. Developing efficient water use regulations will create conditions for economic growth, including the growth of land productivity and irrigated land area, and motivate investment in the new modern irrigation industry. The enabling business environment created by efficient regulation will trigger demand for irrigation system components leading to the growth of the irrigation business and the establishment of institutions to serve the new modern irrigation industry.

The regulatory transition will need a careful approach, due to the sensitivity of tariff-related matters. Possible impacts on the grassroots level (farms, enterprises) need evaluation to mitigate the associated risks through the modelling of the effects of the new legislation prior to imposing the changes. This will help the regulatory transition to be well-planned and implemented by including the linkage to support programs and the design of financial support instruments. The transition will go hand-in-hand with the digitalization. Digitalization is required to enable a smooth and acceptable transition from land-based to volume-based tariffs for irrigation water use for involved stakeholders.

To implement the regulations well and efficiently, institutional capacity building must underpin the regulatory changes. The institutional capacity building will include working on developing the operational norms and rules, trainings for public servants, and attracting international expertise and local knowledge derived from the pilot projects. The following activities are planned for this component.

Regulatory gaps and needs identification

- Involvement of legal experts
- Round tables events with policymakers

Provision of support

- Definition of standards, guidelines and regulations for water saving technologies, implementation, planning, design, operation and maintenance
- Scenario building of regulation changes, e.g. tariff, incentives, government aid
- Economic modelling of effects of regulation changes
- Provision of support for adaptation of current regulations to suggested changes
- Modelling and adaptation of volume-based water tariffs
- Assistance in the design of the water tariff billing system with quality assurance mechanisms
- Training activities

Output 5.1: Appropriate policies, programmes and regulations are in place to reduce investors' risks, scale-up investment and enable the localization of modern irrigation components manufacturing.

Activity 5.1. Regulatory gaps and needs identification, modelling and scenario building

Activity 5.2. Design of regulatory changes. Changes should include system development to consumption-based tariffs.

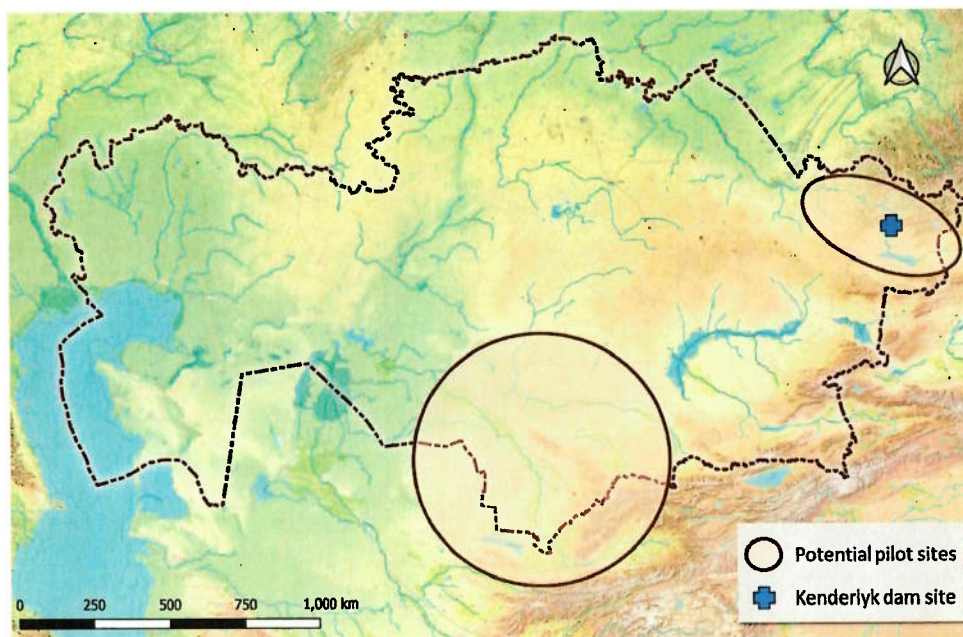
Output 5.2: Transition to a water volume-based tariff system is enabled.

Activity 5.4. Design of water payment infrastructure. It should include budgeting and planning, procurement and quality assurance.

Activity 5.5. Payment enforcement/system design for incentives.

Activity 5.6. Capacity building for the water management authorities.

C) Potential Target Regions



The most promising pilot project regions are Almaty, Jambyl, Qyzylorda, Turkestan, and Zhetysay. Priority regions are Turkestan and Qyzylorda, located in the basin of the Aral Sea. An additional region is East Kazakhstan where dam design will be piloted by recommendation of the Ministry of Water Resources and Irrigation of Kazakhstan. At a later stage, the results of the Project will be rolled out to other Southern regions where the irrigation water scarcity is acute. The selection of three pilot regions does not mean the Project will ignore the other regions of Kazakhstan. Their involvement is envisaged during the upscaling phase at a later stage, if additional funding is available.

Sub-regional level

The selection will depend on the involvement of regional authorities and working relationships with regional Akimats. Partner relationships at the sub-regional levels with the Akimats of the rayons are also important.

Cross-border co-operation

While the Project is focused on the territory of Kazakhstan, an early establishment of a knowledge exchange network using relationships inside UNDP is highly desirable: at least 2 other countries of Central Asia are facing the same threat of water scarcity: Turkmenistan and Uzbekistan, while Kyrgyzstan may be involved as water donor which also is a large water consumer and should be motivated to save water upstream to reduce the shortages downstream. It is highly desirable that all positive experiences developed in one of the countries are replicated as soon as possible in other countries. Besides, funding programs may be more efficiently organized if they are large-scale and diversified across several countries – this would help to scale up the Project results beyond its scope and lifetime.

D) Potential Future Developments

The immediate outcome of the Project should be a massive transformation of the irrigation sector in Kazakhstan, including all aspects, from regulatory and institutional to on-the-ground practices. The manifestation of that should be the investments in the local manufacturing of components for modern irrigation systems by private investors, attracted by the potential growth of the irrigation sector, which is a desired Project outcome.

Regionalization of the irrigation sector transformation should become another consequence of the Project completion: spreading activities of EDB-UNDP to Uzbekistan and potentially other Central Asian countries and starting a similar transformation of the irrigation sector in other countries. It is desirable that such cross-country cooperation started during the Project lifetime, because the water scarcity issue is burning and needs fast action.

Water-saving initiatives in residential and industrial sectors may be one more spin-off of the Project: although these segments are comparatively small water consumers compared to irrigation. However, there are still opportunities to save water and make water supplies more efficient.

Water saving and improved agriculture via nature-based solutions (planting trees to reduce water losses, rehabilitation of pastures, tree belts to reduce draughts, etc.) may be one more natural development, complementary to modern irrigation and an effective tool to rehabilitate pastures, improve the productivity of crops and prevent desertification.

III. RESULTS AND PARTNERSHIPS

Expected Results

- **End-of-Project targets (2029)⁸**
 - 1) Water information system integrating irrigation water consumption, accounting and monitoring is in place. Automated observation stations are installed and transfer data to the water information system. Data is processed and made available for evaluation (water balance, water accounting). This system is designed to be upscaled up to the national level in Kazakhstan
 - 2) 70% of payments (in terms of monetary value) for water are generated by actual volume of consumption for the Project target regions.
 - 3) Up to 5 BCM reduction of irrigation water consumption by 2029 if upscaled at the national level.
 - 4) 2,5% annual water loss reduction starting in 2027.
 - 5) Up to 30% water loss reduction long-term goal.
 - 6) Business ecosystem for modern irrigation is created: at least one large scale irrigation components manufacturer established in Kazakhstan.
 - 7) Start of cooperation between 3 countries of Central Asia related to advanced water management targeting modern irrigation and digitalization standards, exchange of experience and evaluation processes.

Resources Required to Achieve the Expected Results

- The Project will be managed by the UNDP Project Manager located in the UNDP Office in Astana, Kazakhstan.
- In order to achieve the above-mentioned results, the Project stipulates the involvement of highly qualified international experts. The consultants should have meaningful experience in the field of water resource management, SDGs and knowledge of the relevant context in Kazakhstan.
- The Project will also involve a national consultant to support the international experts. These consultants will be required to have a good understanding of the regulatory, legal, and other relevant systems of Kazakhstan.

Partnerships

- **National Project Partners**
 - Ministry of Water Resources and Irrigation, Ministry of Agriculture, Ministry of Energy, RSE Kazvodkhoz, Oblast Akimats, River Basin Inspections along with other partners including the Kazakh Scientific-Research Institute of Water Economy (KazSRIWE) in the provision of technical advisory services to farmers and suppliers, the Kazakh Agrotechnical University (KazATU) in the implementation of a capacity building program on water-savings, local NGOs through delivering first-hand information about how communities can capitalize on precision irrigation water-saving technologies.
- **Roles of EDB and UNDP:** The two leading partners in the Project will combine their best capabilities and core competences to support the Government of Kazakhstan and to make the Project successful.
 - **Eurasian Development Bank** is a financial institution with financial resources and a powerful competence in organizing complex cross-country transformational investment projects. EDB has a deep understanding of challenges in the irrigation sector in Central Asia and is fully aware of the need to resolve these challenges urgently. EDB has extensive experience in funding investments of similar kind. Assuming the Project outcome will clearly indicate the conditions needed to successfully apply modern irrigation infrastructure and develop value chains, EDB will be able to tailor future investments and to better coordinate and harmonize multi-country investment activities across the Central Asian countries.
 - **The United Nations Development Programme** is one of the leading global agencies in organizing and management complex and innovative projects. As a development agency, UNDP is dealing with the challenges and uncertainties of cutting-edge breakthrough initiatives that overcome existing stereotypes and open new horizons. UNDP in Kazakhstan demonstrated that character by introducing a new system of site-specific auctions for renewable energy, building energy service ecosystems from scratch, piloting first of a kind issuance of green bonds and a few other similar initiatives. UNDP would create the foundation for the Project successful completion, based on its efficient system of finding the required technical expertise worldwide, efficient procurement system, political weight, capabilities in the areas of capacity building, communication and on-the ground hands-on management of the actual implementation of activities.

⁸ To be discussed at full proposal development stage

Risks and Assumptions

- Following are a few possible risks identified for specific activities:
 - Trainings are not understood or valued by the participants and as a result, they either miss or do not get the right competences;
 - Local professionals adequate for the proposed training activities may not be found;
 - Incomplete data;
 - Change in the government priorities;
 - Social tension or other considerations preventing the government from taking action, particularly in legislative or regulatory transition or change;
 - The cost or delivery timing of the Project may be too high;
 - Some activities may be too costly for the available funds.
- The Project output and activities will be designed to adequately address the possible risks, and the Project team will closely engage with the beneficiaries and other stakeholders to ensure efficient and effective implementation of the Project activities. Overall, risk monitoring and management will be carried out according to the monitoring plan and the Project team will address the identified risks to reduce or remove the threat they pose upon the achievement of intended results.

Stakeholder Engagement

- Ministry of Water Resources and Irrigation (MWRI) is the key stakeholder and, at the same time, the main beneficiary of the Project. The Project mainly support the Ministry in achieving its objectives of the Concept of the water resource management system development in the Republic of Kazakhstan for 2024-2030. UNDP is closely coordinating with MWRI to adequately identify the needs and incorporate them into the Project to provide efficient and focused support.
- National Coordination Body involving relevant Ministries (MWRI, MinEcology, MinDigitalization, MFA, MinAgri, etc.) to engage relevant stakeholders in the Project and oversee, steer and guide the Project implementation.
- Local authorities are important stakeholders in the implementation of the Project, specifically with the establishment of regional centres of modern irrigation (CMIs). To maximize the smooth establishment and operation of regional MICs, the Project will adequately cooperate with stakeholders at local and regional levels.

Gender

- Gender mainstreaming and inclusive approaches contribute not only to stability and reducing social tension but also to increasing transparency. Water resources management is not an exception. The Dublin Statement on Water and Sustainable Development (1992) was one of the first policy statements to recognize and emphasize the critical role of women in water resource management and protection. Since then, the importance of engaging women in water resources management has been stressed repeatedly. However, the water sector has a persistent gender gap, and women are not represented enough or given the equal opportunity to engage in water resources management.
- Acknowledging such a gender gap in the water sector, this Project aims to involve women in its activities to enhance their capacity in water resources management. In this regard, in the training and capacity-building activities, the targets are set to have at least 30% of participants/trainees be women, to enhance gender equality and reinforce the role of women in the irrigation ecosystem.
- Furthermore, the Project also intend to enhance women's representation in the water resources management sector through ensuring their involvement in working groups, national coordination body, etc.

South-South and Triangular Cooperation (SSC/TrC)⁹

- Kazakhstan is not the only country facing water scarcity issues and inefficient irrigation problems in the region. Additionally, water-related problems have transboundary characteristics in the region as many river basins in Central Asia are shared by several countries. In this regard, cooperation at the regional level through South-South and/or triangular cooperation approaches is ideal for Central Asian countries, including Kazakhstan, to move forward in effectively and efficiently solving water resources management problems they are facing.
- In this sense, the Project seeks to leverage regional cooperation in its activities and also aspire to develop further regional development after the project phases out. Activity 2.5 specifically intends to build a cross-border

⁹ Please see [Considerations for South-South and Triangular Cooperation Design, Implementation, and Documentation](#).

knowledge exchange network among countries on modern irrigation by leveraging existing networks among UNDP Country Offices.

- Within the scope of Component 2, the Project seeks to engage experts from Uzbekistan and other Central Asian countries in the training as both trainees and lecturers based on the understanding of the importance of cross-border exchange in the region.
- The Project perceives the possibility of replicating and spreading activities of the Project in Uzbekistan and potentially to other Central Asian countries after its completion, and ignite a similar transformation of the irrigation sector.

Digital Solutions¹⁰

- Creating a comprehensive digitalization approach to water management is at the core of this Project. Digitalization is essential for acquiring the knowledge base on which scientific analysis, modelling, forecasting, water allocation, and decision-making in a multi-purpose environment is built. This Project intends to build an operational water information system through digitalization, which integrates the entire data flow from monitoring to dissemination that is ready to be upscaled at the national level. The digitalization of water management will also provide a basis for regulations related to volume-based tariffs for water use.

Knowledge

- One of the main objectives of this Project is to create enabling conditions for the shift towards modern irrigation systems by establishing regional centres of modern irrigation (CMIs) that will act as knowledge accumulation hubs and provide capacity-building opportunities to local engineers. In the process of establishing regional CMIs, training and study tours will enhance the capacity and knowledge of the personnel of the regional centres. Once the regional CMIs are fully operational, training modules for irrigation ecosystem members will be developed and tested.
- The Project includes a transboundary character to this Component, which is the creation of a cross-border knowledge exchange network to expand this transformation process to neighbouring countries facing similar challenges related to water resources.

Sustainability and Scaling Up

- The Project recognizes the importance of sustainability and is designed to ensure sustainability of outcomes. The business model of regional modern irrigation centres will be developed to ensure the centre operates sustainably beyond the timeframe of the Project. The Project will develop efficient water use regulations and de-risk investments to create conditions for economic growth and motivate investment so that the whole modern irrigation business ecosystem can sustainably continue to develop further. The capacity-building aspect is embedded in various activities of the Project to enhance the capacity of various stakeholders in the irrigation ecosystem, including farmers, owners of small businesses, local engineers and water management authorities, to ensure the sustainability of impacts and activities.
- The Project anticipates the potential of replicating this transformation process in other Central Asian countries in the region which are facing similar water-related challenges. The Project has a transboundary character in its activities, including the creation of a cross-border knowledge exchange network. This aspect of the Project will create an enabling environment to scale up the results for regionalization of the irrigation sector transformation and possibly starting cross-country cooperation during the project's lifetime.
- The beneficiaries will be continuously and directly involved throughout the process of the Project implementation to ensure national ownership. This includes establishing the National Coordination Body at the beginning of the Project in collaboration with the main beneficiary, MWRI, and other relevant ministries (Ecology, Digitalization, Agriculture, etc.).

IV. PROJECT MANAGEMENT (1/2 PAGES - 2 PAGES RECOMMENDED)

Cost Efficiency and Effectiveness

- The cost-effectiveness and expected results of this Project are based on best practices and lessons learnt from previous UNDP projects. The Project will be economically viable by adhering to standard UNDP rules and procedures. Project management will include structured and consistent planning of project activities, as well as

¹⁰ Please see the [Guideline "Embedding Digital in Project Design"](#).

financial planning. During the implementation, new methods, mechanisms, and financial instruments will be widely used to ensure economic efficiency and effectiveness.

Project Management

- The Project will be managed and implemented by the UNDP Country Office (CO) in Kazakhstan, which will involve a professional Project team comprised of a Project Manager, national expert and administrative and financial assistant and supported by international experts possessing the required expertise, management, and analytical skills.
- It is expected that the Project office will be in Astana and project staff will travel as needed. Consultants and national partners will also help to maintain the Project's presence outside of Astana.
- The UNDP programme staff will closely supervise all stages of the Project's implementation. The Project team will be supported by the in-house operation capacity, the UNDP CO Operation services during Project implementation.

V. RESULTS FRAMEWORK¹¹

Intended Outcome as stated in the UNSDCF/Country [or Regional] Programme Results and Resource Framework:

Outcome 3. By 2030, all people in Kazakhstan, especially the most vulnerable, benefit from enhanced age and gender-sensitive environmental resilience, as well as inclusive, rights-based climate, nature and pollution action and sustainable management of natural resources

Outcome indicators as stated in the Country Programme [or Regional] Results and Resources Framework, including baseline and targets:

Output 3.1: Policies, programmes, capacities, tools, and systems are strengthened to enhance environmental resilience, climate change adaptation and disaster risk management benefitting women and vulnerable groups.

Indicator 3.1.2: Number of digital tools for climate and natural resource governance, monitoring, evidence-based decision-making, and reporting Baseline: 0 (2024)

Target: 3 (2030)

Data source, frequency: relevant institutions, ministries; annually

Indicator 3.2.3: Number of people from local communities engaged in gender-sensitive sustainable natural resource management through decision making platforms and/or trained through innovative environmental education programmes, disaggregated by men/women.

Baseline (2024): 0

Target (2030): 200 (30% women)

Data source, frequency: UNDP, annually

Applicable Output(s) from the UNDP Strategic Plan:

41. Working at local level is a practical entry point for reducing the accumulation of systemic risk and building resilience in line with the human security approach... to strengthen community resilience to climate change and water scarcity by supporting water conservation infrastructure and education at local level, coupled with national policies on disaster risk reduction. When risks cross borders, transnational or issue-based approaches will be needed.

45. UNDP will support partners in addressing the root causes and drivers of change. Working with specialist partners, UNDP aims to catalyse a shift away from business-as-usual towards practices that restore long-term productivity, bolster livelihoods, safeguard biodiversity and ecosystem services and provide climate solutions.

63. The UNDP development mandate, experience, presence and ability to work with multiple levels of government equip the organization to support a holistic approach to digital transformation. UNDP will connect countries to specialist expertise and help define a strategic vision to guide UNCTs. Building on its long-standing work, from digital infrastructure to government capacity-building, UNDP has developed a guide to inclusive digital transformation and a digital readiness assessment. Using these tools, UNDP country offices will identify strategic entry points and drive digitally informed programming across all thematic areas.

Directions of change: Structural transformation, including green, inclusive and digital transitions; Leaving no one behind; Building resilience,

Signature Solution: Resilience

Enablers: Digitalization

Project title and Quantum Project Number: Business Ecosystem Development for Sustainable Irrigation in Kazakhstan

EXPECTED OUTPUTS	OUTPUT INDICATORS ¹²	DATA SOURCE	BASELINE		TARGETS (by frequency of data collection)					DATA COLLECTION METHODS & RISKS
			Value	Year	Yr 1 2026	Yr 2 2027	Yr 3 2028	Yr 4 2029	FINAL	
Output 1.1 Operational water information system integrating the entire data flow from monitoring to dissemination is ready for being upscaled	Indicator 1.1.1 Number of modules of operational water information system in place	Works commissioning acts Stakeholders feedback	0	2025	0	2 module			2 modules	Observation Documents review Interviews with the stakeholders The risk is unexpected changes in the environment and the attitudes of the stakeholders may delay the delivery or make it more expensive than originally planned.
	Indicator 1.1.2 Number of water monitoring devices installed	Devices commissioning acts. Monitoring reports.	0	2025	15	15			30, including water level radars and water meters	Documents review. Field visits. The risk is the budget is not sufficient and/or the skilled workforce to install devices correctly is not available.
Output 1.2 Result generation is enabled, water availability is calculated,	Indicator 1.2.1 Number of people trained with capacity to calculate water availability, forecast and plan water allocation.	Training reports (including photos) and feedback	0	2025		min. 30 people trained, min. 30% women			min. 30 people trained, min. 30% women	Documents review Interviews with the stakeholders The risk is the trainings are not understood or valued,

¹¹ UNDP publishes its project information (indicators, baselines, targets and results) to meet the International Aid Transparency Initiative (IATI) standards. Make sure that indicators are S.M.A.R.T. (Specific, Measurable, Attainable, Relevant and Time-bound), provide accurate baselines and targets underpinned by reliable evidence and data, and avoid acronyms so that external audience clearly understand the results of the project.

¹² It is recommended that projects use output indicators from the Strategic Plan IRRF, as relevant, in addition to project-specific results indicators. Indicators should be disaggregated by sex or for other targeted groups where relevant.

EXPECTED OUTPUTS	OUTPUT INDICATORS ¹²	DATA SOURCE	BASELINE		TARGETS (by frequency of data collection)					DATA COLLECTION METHODS & RISKS
			Value	Year	Yr 1 2026	Yr 2 2027	Yr 3 2028	Yr 4 2029	FINAL	
forecasting and planning of water allocation is enabled, risks connected to water shortages are known		<i>from the attendees</i>								<i>and as a result the attendees either miss them, or do not get the right competences.</i>
Output 2.1 Regional centres of modern irrigation (CMIs) with sufficient technical capacities are in place to scale-up investment in the sustainable irrigation sector in Kazakhstan and to provide support for investors	Indicator 2.1.1 Number of regional centres of modern irrigation (CMIs) with sufficient technical capacities in place	<i>Monitoring reports</i>	0	2025	1		1		2 CMIs	Documents review Site visits Interviews with the stakeholders <i>The risk is the local professionals may not be found and/or the local authorities are not willing to co-operate.</i>
Output 2.2 Regional centres of modern irrigation (CMIs) are fully operational	Indicators 2.2.1 Number of people trained in training programs organized for the local irrigation ecosystem participants	<i>Training reports (including photos) and feedback from the attendees</i>	0	2025			min. 50 people trained, min. 30% women	min. 50 people trained, min. 30% women	min. 100 people trained, min. 30% women	Documents review Interviews with the stakeholders <i>The risk is the trainings are not understood or not valued, and as a result the attendees either miss them, or do not get the right competences.</i>

EXPECTED OUTPUTS	OUTPUT INDICATORS ¹²	DATA SOURCE	BASELINE		TARGETS (by frequency of data collection)					DATA COLLECTION METHODS & RISKS
			Value	Year	Yr 1 2026	Yr 2 2027	Yr 3 2028	Yr 4 2029	FINAL	
Output 3.1 Development for water saving irrigation systems piloted	Indicators 3.1.1 Number of demonstration sites in place to pilot complex technology approach with laser land levelling, in-farm plastic pipeline systems building and maintenance, drip irrigation, etc.	Monitoring reports, photos	0	2025		2			2	Documents review Interviews with the stakeholders Site visits The risk is the costs or delivery timing is too high.
Output 3.2 Conditions for scaling up modern technologies created: small business ecosystem in irrigation design, construction/assembly and maintenance established	Indicator 3.2.1 Number of people trained in a massive training organized for service SMEs/users, awareness building, culture and behavioral changes.	Training reports (including photos) and feedback from the attendees	0	2025			min. 50 people trained, min. 30% women	min. 50 people trained, min. 30% women	min. 100 people trained, min. 30% women	Documents review Interviews with the stakeholders The risk is the trainings are not understood or valued, and as a result the attendees either miss them, or do not get the right competences.
Output 3.3 De-risking investments in localization of modern irrigation components manufacturing	Indicator 3.3.1 Number of appropriate financial instruments created for pilot investments in small- and large-scale modern irrigation components manufacturing quick start	Documents and publication covering launch of the public financial support schemes, tailored to modern irrigation	0	2025			1	1	2	Documents review Interviews with the stakeholders The risk is that the Government and its business support agencies are not co-operative and do not help to promote the investments in modern irrigation for small

EXPECTED OUTPUTS	OUTPUT INDICATORS ¹²	DATA SOURCE	BASELINE		TARGETS (by frequency of data collection)					DATA COLLECTION METHODS & RISKS
			Value	Year	Yr 1 2026	Yr 2 2027	Yr 3 2028	Yr 4 2029	FINAL	
		sector ecosystem								businesses, and so the support is not available.
Output 4.1 Appropriate policies, programmes and regulations are in place to increase efficiency of water reserves utilization	Indicator 4.1.1 Sets of reports with recommendations provided for establishing appropriate policies, programmes and regulations to increase efficiency of water reserves utilization	Reports. Feedback from stakeholders.	0	2025			1 Report: comparative analysis of dam construction and reservoir operation in Kazakhstan / international best practices	1 Report covering: water volume saved by improved water use efficiency. Hydrological and economic analysis of water opportunities for hydropower, flood mitigation, irrigation, environment.	2	Documents review. The risk is data is incomplete and/or the priorities of the government change.
Output 4.2 Improved approach to dam design, construction and management piloted	Indicator 4.2.1 Completion of the feasibility design of the dam in line with the developed recommendations, taking into account the smart and integrated approach to water management	Design documents Monitoring reports	0	2025		1 Design works completed.			1	Documents review Interviews with the stakeholders The risk is the project lacks funds for this costly activity.
Output 5.1 Appropriate policies,	Indicator 5.1.1 The design of regulatory changes, including system development to	Reports. Feedback from	0	2025				1 Design of water	1	Documents review Interviews with the stakeholders

EXPECTED OUTPUTS	OUTPUT INDICATORS ¹²	DATA SOURCE	BASELINE		TARGETS (by frequency of data collection)					DATA COLLECTION METHODS & RISKS
			Value	Year	Yr 1 2026	Yr 2 2027	Yr 3 2028	Yr 4 2029	FINAL	
programmes and regulations are in place to reduce investors' risks, scale-up investment and enable the localization of modern irrigation components manufacturing	<i>consumption-based tariffs is completed</i>	<i>stakeholders.</i>						<i>payment infrastructure and enforcement systems</i>		<i>The risk is social tensions or other considerations prevent the government from taking necessary steps.</i>
Output 5.2 Transition to a water volume-based tariff system is enabled	Indicator 5.2.1 Number of people trained in preparation for the transition to a water-volume based tariff system	Training reports (including photos) and feedback from the attendees	0	2025			min. 20 people trained, min. 30% women	min. 30 people trained, min. 30% women	min. 50 people trained, min. 30% women	Documents review Interviews with the stakeholders <i>The risk is the trainings are not understood or valued, and as a result the attendees either miss them, or do not get the right competences.</i>

VI. MONITORING AND EVALUATION

In accordance with UNDP's programming policies and procedures, the project will be monitored through the following monitoring and evaluation plans:

The Project is operating in a complex multi-dimensional context and success of its outcomes depends on the involvement, effort, good will and ownership of many actors, which are under influence of many factors of different scale and character. These actors vary from the national governments in the Central Asia region and banking systems to the smallholder farmers and owners of the local small businesses in the area, and the factors vary from the exchange and interest rates and geo-political tensions to the quality of the roads, weather conditions during the project implementation and demand for particular crops. In this fragile situation achieving the desired outcomes may turn out more challenging than initially expected, it may require more time and / or more resources and more political will than available during the Project life. The Project will apply its best efforts to make the declared outcomes realistic and achievable. While this achievement cannot be guaranteed, UNDP-Kazakhstan team is optimistic to start the Project and believes that refraining from starting it presents a larger issue, with the looming water scarcity in view, associated with the hunger, social instability, and humanitarian consequences of potential disruptions in irrigation systems and agriculture at a scale.

Monitoring Plan

Monitoring Activity	Purpose	Frequency	Expected Action	Partners (if joint)	Cost (if any)
Track results progress	Progress data against the results indicators in the RRF will be collected and analysed to assess the progress of the Project in achieving the agreed outputs.	Quarterly, or in the frequency required for each indicator.	Slower than expected progress will be addressed by Project management.		
Monitor and Manage Risk	Identify specific risks that may threaten the achievement of intended results. Identify and monitor risk management actions using a risk log. This includes monitoring measures and plans that may have been required as per UNDP's Social and Environmental Standards. Audits will be conducted in accordance with UNDP's audit policy to manage financial risk.	Quarterly	Risks are identified by project management, and actions are taken to manage risk. The risk log is actively maintained to keep track of identified risks and actions taken.		
Learn	Knowledge, good practices and lessons will be captured regularly, as well as actively sourced from other projects and partners and integrated back into the Project.	Annually	Relevant lessons are captured by the project team and used to inform management decisions.		
Annual Project Quality Assurance	The quality of the project will be assessed against UNDP's quality standards to identify project strengths and weaknesses and to inform management decision making to improve the Project.	Annually	Areas of strength and weakness will be reviewed by project management and used to inform decisions to improve project performance.		
Review and Make Course Corrections	Internal review of data and evidence from all monitoring actions to inform decision making.	Annually	Performance data, risks, lessons, and quality will be discussed by the project board and used to make course corrections.		

United Nations Development Programme

Monitoring Activity	Purpose	Frequency	Expected Action	Partners (if joint)	Cost (if any)
Project Report	A progress report will be presented to the Project Board and key stakeholders, consisting of progress data showing the results achieved against pre-defined annual targets at the output level, the annual project quality rating summary, an updated risk long with mitigation measures, and any evaluation or review reports prepared over the period.	Annually, and at the end of the Project (final report)			
Project Review (Project Board)	The Project's governance mechanism (i.e., project board) will hold regular project reviews to assess the performance of the project and review the Multi-Year Work Plan to ensure realistic budgeting over the life of the Project. In the Project's final year, the Project Board shall hold an end-of project review to capture lessons learned and discuss opportunities for scaling up and to socialize project results and lessons learned with relevant audiences.	Annually	Any quality concerns or slower than expected progress should be discussed by the project board, and management actions agreed to address the issues identified.		

Evaluation Plan

Evaluation Title	Partners (if joint)	Related Strategic Plan Output	UNSDCF/CPD Outcome	Planned Completion Date	Key Evaluation Stakeholders	Cost and Source of Funding
Final Evaluation		Outcome 3: Resilience built to respond to systemic uncertainty and risk.	#3: By 2030, all people in Kazakhstan, especially the most vulnerable, benefit from enhanced age and gender-sensitive environmental resilience, as well as inclusive, rights-based climate, nature and pollution action and sustainable	4 q 2029	MWRI	29000

United Nations Development Programme

			management of natural resources			
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VII. MULTI-YEAR WORK PLAN ¹³¹⁴

All anticipated programmatic and operational costs to support the project, including development effectiveness and implementation support arrangements, need to be identified, estimated and fully costed in the project budget under the relevant output(s). This includes activities that directly support the project, such as communication, human resources, procurement, finance, audit, policy advisory, quality assurance, reporting, management, etc. All services which are directly related to the project need to be disclosed transparently in the project document.

* Note: Budget description is subjected to change after the inception phase and finalized budget description will be reflected in the Quantum system.

EXPECTED OUTPUTS	PLANNED ACTIVITIES	Planned Budget by Year				RESPONSIBLE PARTY	PLANNED BUDGET		
		2026	2027	2028	2029		Funding Source	Budget Description	Amount
Output 1.1 Operational water information system integrating the entire data flow from monitoring to dissemination is ready for being upscaled Gender marker: GEM1	Activity 1.1. Development of the digitalization/monitoring strategy and stakeholder engagement	10000	0	0	0	UNDP	EDB	71200 -International Consultants	10000
		9000	0	0	0	UNDP	EDB	71300- Local Consultants	9000
		9000	0	0	0	UNDP	EDB	72100 -Contractual Services- Companies	9000
		6000	0	0	0	UNDP	EDB	71600-Travel	6000
		10800	0	0	0	UNDP	EDB	75700 -Training, Workshops, Confer	10800
		3584	0	0	0	UNDP	EDB	75100-Facilities & Administration (GMS)	3584
	Activity 1.2. Development of modules (water balance,	114240	99760	0	0	UNDP	EDB	72100 Contractual Services- Companies	214000

¹³ Cost definitions and classifications for programme and development effectiveness costs to be charged to the project are defined in the Executive Board decision DP/2010/32

¹⁴ Changes to a project budget affecting the scope (outputs), completion date, or total estimated project costs require a formal budget revision that must be signed by the project board. In other cases, the UNDP programme manager alone may sign the revision provided the other signatories have no objection. This procedure may be applied for example when the purpose of the revision is only to re-phase activities among years.

United Nations Development Programme

Output 1.2 Result generation is enabled, water availability is calculated, forecasting	Activity 1.3. Selection, procurement, installation of monitoring equipment	irrigation scheduling, water accounting).	4000	4000	0	0	UNDP	EDB	71200 -International Consultants	8000
			4000	4000	0	0	UNDP	EDB	71300- Local Consultants	8000
			9779.2	8620.8	0	0	UNDP	EDB	75100-Facilities & Administration (GMS)	18400
			500000	262000	0	0	UNDP	EDB	72200 Equipment & Furniture	762000
			14000	14000	0	0	UNDP	EDB	71200 -International Consultants	28000
			88858	41142	0	0	UNDP	EDB	72100 Contractual Services- Companies	130000
			10000	10000	0	0	UNDP	EDB	71300- Local Consultants	20000
			10000	10000	0		UNDP	EDB	71600-Travel	20000
			49828.64	26971.36	0	0	UNDP	EDB	75100-Facilities & Administration (GMS)	76800
			26102	45898	0	0	UNDP	EDB	72100 Contractual Services- Companies	72000
	Activity 1.4. Integration of the modules to platform		4000	4000	0	0	UNDP	EDB	71200 -International Consultants	8000
			4000	4000	0	0	UNDP	EDB	71300- Local Consultants	8000
			18850	19300	0	0	UNDP	EDB	71400-Contractual services-Indiv (NPSA)	38150
			4236.16	5855.84	0	0	UNDP	EDB	75100-Facilities & Administration (GMS)	10092
		Sub-Total for Output 1.1	910278	559548	0	0				1469826
	Activity 1.5. Trainings on monitoring equipment		6000	8000	0	0	UNDP	EDB	75700 -Training, Workshops, Confer	14000

United Nations Development Programme

and planning of water allocation is enabled, risks connected to water shortages are known Gender marker: GEM1

Activity 1.6. Training on modules (min. 30% women)

Sub-Total for Output 1.2

Total for Output 1

Output 2.1 Regional centres of modern irrigation (CMI) with sufficient technical capacities are in place to scale-up investment in the sustainable irrigation sector in Kazakhstan and to provide support for investors

Activity 2.1. Development of regional centres

1500	1100	0	0	UNDP	EDB	71200-International Consultants	2600
1400	900	0	0	UNDP	EDB	71300- Local Consultants	2300
712	800	0	0	UNDP	EDB	75100-Facilities & Administration (GMS)	1512
2500	3000	0	0	UNDP	EDB	75700 -Training, Workshops, Confer	5500
1000	1100	0	0	UNDP	EDB	71200 -International Consultants	2100
500	1000	0	0	UNDP	EDB	71300- Local Consultants	1500
1000	1000	0	0	UNDP	EDB	74200 Audio Visual&Print Prod Costs	2000
3000	3000	0	0	UNDP	EDB	71600-Travel	6000
15100	16700	0	0	UNDP	EDB	71400-Contractual services-Indiv (NPSA)	31800
1848	2064	0	0	UNDP	EDB	75100-Facilities & Administration (GMS)	3912
34560	38664	0	0				73224
944838	598212	0	0				1543050
20000	20000	50000	40000	UNDP	EDB	72100 Contractual Services-Companies	130000
4100	4000	11500	11000	UNDP	EDB	71200 -International Consultants	30600
10000	7000	7000	7000	UNDP	EDB	71600-Travel	31000
70000	60000	193000	193000	UNDP	EDB	72200 Equipment	516000
2000	1600	10000	10000	UNDP	EDB	71300- Local Consultants	23600
8488	7408	21720	20880	UNDP	EDB	75100-Facilities & Administration (GMS)	58496

Gender marker: GEM1	Activity 2.2. Establishing a national coordination body (min. 30% women)	6000	3400	6000	4200	UNDP	EDB	75700 -Training, Workshops, Confer	19600	
		6000	3000	6000	3000	UNDP	EDB	72100 Contractual Services-Companies	18000	
		6000	4000	6000	4000	UNDP	EDB	74200 Audio Visual&Print Prod Costs	20000	
		1000	1000	1000	1000	UNDP	EDB	71200 -International Consultants	4000	
		1000	1000	1000	1000	UNDP	EDB	71300- Local Consultants	4000	
		1600	992	1600	1056	UNDP	EDB	75100-Facilities & Administration (GMS)	5248	
	Activity 2.3. Training the personnel of the regional centres (min. 30% women)	0	0	7000	7000	UNDP	EDB	75700 -Training, Workshops, Confer	14000	
		0	0	6100	6000	UNDP	EDB	71600-Travel	12100	
		0	0	0	0	UNDP	EDB	71400-Contractual services-Indiv (NP&SA)	0	
		0	0	1048	1040	UNDP	EDB	75100-Facilities & Administration (GMS)	2088	
	Sub-Total for Output 2.1		136188	113400	328968	310176			888732	
	Output 2.2 regional centres of modern irrigation (cmis) are fully operational Gender marker: GEM1	Activity 2.4. Development of training courses and materials/ Modules design / redesign/.	0	0	30000	30000	UNDP	EDB	75700 -Training, Workshops, Confer	60000
			0	0	12000	12000	UNDP	EDB	71600-Travel	24000
			0	0	10000	10000	UNDP	EDB	71300- Local Consultants	20000
0			0	59500	50000	UNDP	EDB	72100 Contractual Services-Companies	109500	
0			0	10000	10000	UNDP	EDB	71200 -International Consultants	20000	
0			0	9720	8960	UNDP	EDB	75100-Facilities & Administration (GMS)	18680	

United Nations Development Programme

Output 3.1 Development for water saving irrigation systems piloted Gender marker: GEMO	Activity 2.5. Creating a cross-border knowledge exchange network	0	0	12000	10000	UNDP	EDB	71600-Travel	22000
		0	0	5000	5000	UNDP	EDB	72100 Contractual Services-Companies	10000
		0	0	4000	4000	UNDP	EDB	75700 -Training, Workshops, Confer	8000
		0	0	1680	1520	UNDP	EDB	75100-Facilities & Administration (GMS)	3200
	Activity 2.6. Planning and support demonstration pilots	0	0	6000	5500	UNDP	EDB	71600-Travel	11500
		0	0	5000	6000	UNDP	EDB	74200 -Audio Visual&Print Prod Costs	11000
		0	0	6000	6000	UNDP	EDB	72200-Equipment and Furniture	12000
		0	0	1000	1000	UNDP	EDB	71200 -International Consultants	2000
		0	0	2000	2000	UNDP	EDB	71300- Local Consultants	4000
		0	0	5000	5000	UNDP	EDB	72100 Contractual Services-Companies	10000
		0	0	30000	30000	UNDP	EDB	71400-Contractual services-Indiv (NPSA)	60000
		0	0	4400	4440	UNDP	EDB	75100-Facilities & Administration (GMS)	8840
		Sub-Total for Output 2.2		0	0	213300	201420		414720
		Total for Output 2		136188	113400	542268	511596		1303452
	Activity 3.1. System development: Piloting complex technology approach	30000	30000	22000	22000	UNDP	EDB	72100 -Contractual Services-Companies	104000
		8000	6400	8000	6000	UNDP	EDB	71200 -International Consultants	28400
		2000	2000	2000	2000	UNDP	EDB	71300- Local Consultants	8000

United Nations Development Programme

Output 3.2 Conditions for scaling up modern technologies created: small business ecosystem in irrigation design, construction/assembly and maintenance established Gender marker: GEM1	Activity 3.2. Development of recommendations on the best combination of technologies	110000	110000	90000	90000	UNDP	EDB	72200 -Equipment and Furniture	400000
		3000	3500	4000	3500	UNDP	EDB	71600-Travel	14000
		12240	12152	10080	9880	UNDP	EDB	75100-Facilities & Administration (GMS)	44352
		4000	2400	2000	2000	UNDP	EDB	71200 -International Consultants	10400
		1500	1500	1500	1000	UNDP	EDB	71300- Local Consultants	5500
		10000	11000	11000	11000	UNDP	EDB	71400-Contractual services-Indiv (NPSA)	43000
		1240	1192	1160	1120	UNDP	EDB	75100-Facilities & Administration (GMS)	4712
		Sub-Total for Output 3.1	181980	180144	151740	148500			662364
	Activity 3.3. Organizing massive capacity building (min. 30% women)	0	0	32500	32500	UNDP	EDB	75700 -Training, Workshops, Confer	65000
		0	0	20000	19000	UNDP	EDB	72100 Contractual Services-Companies	39000
		0	0	8900	7000	UNDP	EDB	71200 -International Consultants	15900
		0	0	16000	16000	UNDP	EDB	71600-Travel	32000
		0	0	12500	12500	UNDP	EDB	71300- Local Consultants	25000
		0	0	10800	10800	UNDP	EDB	71400-Contractual services-Indiv (NPSA)	21600
		0	0	8056	7824	UNDP	EDB	75100-Facilities & Administration (GMS)	15880
		0	0	2000	2000	UNDP	EDB	72100 Contractual Services-Companies	4000
	Activity 3.4. Financial analysis of the typical business and design of	0	0	2500	2500	UNDP	EDB	71200 -International Consultants	5000

United Nations Development Programme

Output 3.3 De-risking investments in localization of modern irrigation components manufacturing Gender marker: GEN1	financial support scheme	0	0	360	360	UNDP	EDB	75100-Facilities & Administration (GMS)	720
	Sub-Total for Output 3.2	0	0	113616	110484				224100
	Activity 3.5. Market, economic and business environment analysis with gender-sensitive approaches and identification of enabling conditions for large scale modern irrigation	0	0	2000	2000	UNDP	EDB	71300- Local Consultants	4000
		0	0	5000	5000	UNDP	EDB	71200 -International Consultants	10000
		0	0	5000	5000	UNDP	EDB	72100 Contractual Services-Companies	10000
		0	0	960	960	UNDP	EDB	75100-Facilities & Administration (GMS)	1920
		0	0	5000	5000	UNDP	EDB	74200 Audio Visual&Print Prod Costs	10000
	Activity 3.6. Communication campaign to promote business opportunities in the irrigation sector	0	0	2500	2500	UNDP	EDB	72100 Contractual Services-Companies	5000
		0	0	5000	5000	UNDP	EDB	71400-Contractual services-Indiv (NPSA)	10000
		0	0	1000	1000	UNDP	EDB	75100-Facilities & Administration (GMS)	2000
	Sub-Total for Output 3.3	0	0	26460	26460				52920
	Total for Output 3	181980	180144	291816	285444				939384
Output 4.1 Appropriate policies, programmes and regulations are in place to increase efficiency of water reserves utilization Gender marker: GEMO	Activity 4.1. Comparative analysis dam construction and reservoir operation	0	0	12600	0	UNDP	EDB	71200 -International Consultants	12600
		0	0	15000	0	UNDP	EDB	71300- Local Consultants	15000
		0	0	15000	0	UNDP	EDB	72100 Contractual Services-Companies	15000
		0	0	3408	0	UNDP	EDB	75100-Facilities & Administration (GMS)	3408

United Nations Development Programme

Output 4.2 Improved approach to dam design, construction and management piloted Gender marker: GEN1	Activity 4.2. Assess development opportunities and develop recommendations on multipurpose use	0	0	11000	11000	UNDP	EDB	71200 -International Consultants	22000
		0	0	9000	7000	UNDP	EDB	71300- Local Consultants	16000
		0	0	12000	12000	UNDP	EDB	72100 Contractual Services-Companies	24000
		0	0	2560	2400	UNDP	EDB	75100-Facilities & Administration (GMS)	4960
		0	0	5500	5500	UNDP	EDB	71200 -International Consultants	11000
	Activity 4.3. Extrapolate the opportunities to other dam locations	0	0	3500	3500	UNDP	EDB	71300- Local Consultants	7000
		0	0	6300	5000	UNDP	EDB	72100 Contractual Services-Companies	11300
		0	0	20350	20350	UNDP	EDB	71400-Contractual services-Indiv (NPSA)	40700
		0	0	2852	2748	UNDP	EDB	75100-Facilities & Administration (GMS)	5600
		0	0	119070	69498				188568
	Sub-Total for Output 4.1		0	0	119070	69498			188568
	Activity 4.4. Complete the feasibility design of the dam	302500	248740	0	0	UNDP	EDB	72100 Contractual Services-Companies	551240
		4260	3000	0	0	UNDP	EDB	71600-Travel	7260
		6000	6000	0	0	UNDP	EDB	71200 Consultant-Individual-International	12000
		25020.8	20619.2	0	0	UNDP	EDB	75100-Facilities & Administration (GMS)	45640
		5000	5000	0	0	UNDP	EDB	71200 -International Consultants	10000
	Activity 4.5. Evaluate the economic, social and environmental aspects and gender-differentiated impacts	2000	2000	0	0	UNDP	EDB	71300- Local Consultants	4000

United Nations Development Programme

		17600	17600	0	0	UNDP	EDB	71400-Contractual services-Indiv (NPSA)	35200
		1968	1968	0	0	UNDP	EDB	75100-Facilities & Administration (GMS)	3936
	Sub-Total for Output 4.2	364348.8	304927.2	0.0	0.0				669276.0
	Total for Output 4	364348.8	304927.2	119070.0	69498.0				857844
Output 5.1 Appropriate policies, programmes and regulations are in place to reduce investors' risks, scale-up investment and enable the localization of modern irrigation components manufacturing Gender marker: GEM0	Activity 5.1. Regulatory gaps and needs identification, modelling and scenario building	0	0	25000	25000	UNDP	EDB	72100 Contractual Services-Companies	50000
		0	0	14500	14000	UNDP	EDB	71200 -International Consultants	28500
		0	0	12000	12000	UNDP	EDB	71300- Local Consultants	24000
		0	0	4120	4080	UNDP	EDB	75100-Facilities & Administration (GMS)	8200
	Activity 5.2. Design of regulatory changes	0	0	5000	5000	UNDP	EDB	72100 Contractual Services-Companies	10000
		0	0	5000	5000	UNDP	EDB	71200 -International Consultants	10000
		0	0	5000	5000	UNDP	EDB	71300- Local Consultants	10000
		0	0	24300	24300	UNDP	EDB	71400-Contractual services-Indiv (NPSA)	48600
		0	0	3144	3144	UNDP	EDB	75100-Facilities & Administration (GMS)	6288
		0	0	98064	97524				195588
	Sub-Total for Output 5.1	0	0	98064	97524				195588
Output 5.2 Transition to a water volume-based tariff system is enabled Gender marker: GEM1	Activity 5.3. Design of water payment infrastructure	0	0	6000	3500	UNDP	EDB	72100 Contractual Services-Companies	9500
		0	0	3000	2500	UNDP	EDB	71200 -International Consultants	5500
		0	0	2500	2500	UNDP	EDB	71300- Local Consultants	5000

United Nations Development Programme

		0	0	920	680	UNDP	EDB	75100-Facilities & Administration (GMS)	1600
		0	0	6000	3500	UNDP	EDB	72100 Contractual Services-Companies	9500
Activity 5.4. Payment enforcement/system design for incentives		0	0	3000	2500	UNDP	EDB	71200 -International Consultants	5500
		0	0	2500	2500	UNDP	EDB	71300- Local Consultants	5000
		0	0	920	680	UNDP	EDB	75100-Facilities & Administration (GMS)	1600
		0	0	7000	7000	UNDP	EDB	75700 -Training, Workshops, Confer	14000
		0	0	4000	4000	UNDP	EDB	71600-Travel	8000
Activity 5.5. Capacity building for the water management authorities (min. 30% women)		0	0	6500	6000	UNDP	EDB	72100 Contractual Services-Companies	12500
		0	0	2000	2000	UNDP	EDB	74200 Audio Visual&Print Prod Costs	4000
		0	0	4000	4000	UNDP	EDB	71200 -International Consultants	8000
		0	0	3000	3000	UNDP	EDB	71300- Local Consultants	6000
		0	0	6000	6000	UNDP	EDB	71400-Contractual services-Indiv (NPSA)	12000
		0	0	2600	2560	UNDP	EDB	75100-Facilities & Administration (GMS)	5160
	Sub-Total for Output 5.2	0	0	59940	52920				112860
Project Management Costs	Total for Output 5	0	0	158004	150444				308448
	Salaries of permanent employees (PM 12%, AFA(30%))	14700	14807.5	17200	16800	UNDP	EDB	71400-Contractual services-Indiv (NPSA)	63507.5
	Final evaluation	0	0	0	24000	UNDP	EDB	71200 -International Consultants	24000

United Nations Development Programme

	0	0	0	5000	UNDP	EDB	71300- Local Consultants	5000
Office rent	15500	15500	15500	15500	UNDP	EDB	73100- Rental & Maintenance-Premises	62000
Office equipment	6000	8960	3000	0	UNDP	EDB	72200- Equipment and Furniture	17960
Miscellaneous (Bank commission, etc)	1000	1000	1000	1000	UNDP	EDB	74500- Bank comission	4000
Monitoring visits	2000	1060.3	2000	1988.9	UNDP	EDB	71600-Travel	7049.2
DPC (Direct Project Costs: for services rendered by UNDP to the Project, are the costs of administrative services (such as those related to human resources, procurement, finance, and other functions) provided by UNDP in relation to the Project. Direct Project costs will be charged based on the UNDP Universal Price List. The amounts indicated here are estimations. DPCs will be detailed as part of the annual project operational planning process and included in the yearly budgets. DPC costs can only be used for operational cost per transaction. DPCs are not a flat fee.	13380	8490	10485	10485	UNDP	EDB	74596-UNDP cost recovery chrgs-Bills (DPC)	42840
	31220	19810	24465	24465	UNDP	EDB	64397- Staff Mgmt Costs (DPC)	99960

United Nations Development Programme

	**GMS 8% (General management support)	7264	5770.224	6692	6379.112	UNDP	EDB	75100-Facilities & Administration (GMS)	26105.336
	Total Project management	98064	77898.024	90342	86118.012		EDB		352422.036
TOTAL		1725418.8	1274581.2	1201500.0	1103100.0		EDB		5304600.0

VIII. GOVERNANCE AND MANAGEMENT ARRANGEMENTS

The Project will be managed and implemented by UNDP Kazakhstan within the UNDP Direct Implementation Modality (DIM). The Energy and Environment Unit will provide oversight, quality assurance, technical guidance, and project management services as well as ensure communication with the donor. The Management and Programme Support (MPSU) and Operations Units will provide administrative and financial support to the project implementation.

Project management will be carried out by UNDP Country Office (CO) staff. International and National Consultants will be hired to provide technical guidance and implementation support. A Project Assistant from the MPSU will be assigned to provide admin-finance support services to the project implementation. The Project will be implemented in line with UNDP project management policies and UNDP financial rules and regulations. All materials and publications produced under the Project will fully adhere to the Communication and Visibility Strategy of UNDP and the donor - EDB.

A Project Board will be established to provide guidance, supervision, and oversight for the project implementation and to ensure adequate engagement with the donor. The Project Board will be the main governing mechanism led by UNDP CO. The Project Board meetings will hold annual meetings to discuss the progress, review and approve annual work plans, and review the risks that arise during the project implementation.

To relieve administrative burdens and mitigate risks, UNDP CO will consider the engagement of a partner in the role of the responsible party to provide goods and/or services to the Project, carry out project activities and/or produce outputs if deemed necessary. This modality will also allow UNDP CO to take advantage of a responsible party's specialized skills in the subject field. The engagement will be made in line with UNDP rules and regulations. All relevant assessments and checks will be completed in line with the legal status of the partner.

Any organization that is legally constituted and duly registered may become a responsible party for a UNDP project. This includes government agencies, intergovernmental organizations, private firms, other UN agencies, or civil society organizations, including non-governmental organizations, advocacy groups, state-owned enterprises, and academia.

Spot check and audit: UNDP reserves the right to conduct a spot-check of the responsible party. According to UNDP rules, responsible parties are subject to a spot check. In addition, UNDP will carry out several mandatory procedures for assessing the capacity of a responsible party, including an independent micro-assessment aimed at determining the capacity of the financial management system in terms of accounting, procurement, reporting, and internal control so as to establish a Cash Transfer Modality to the responsible party, as well as identifying and determining the risk rating for proper implementation of the donor funds. UNDP shall solicit an independent, certified audit company to conduct the micro-assessment.

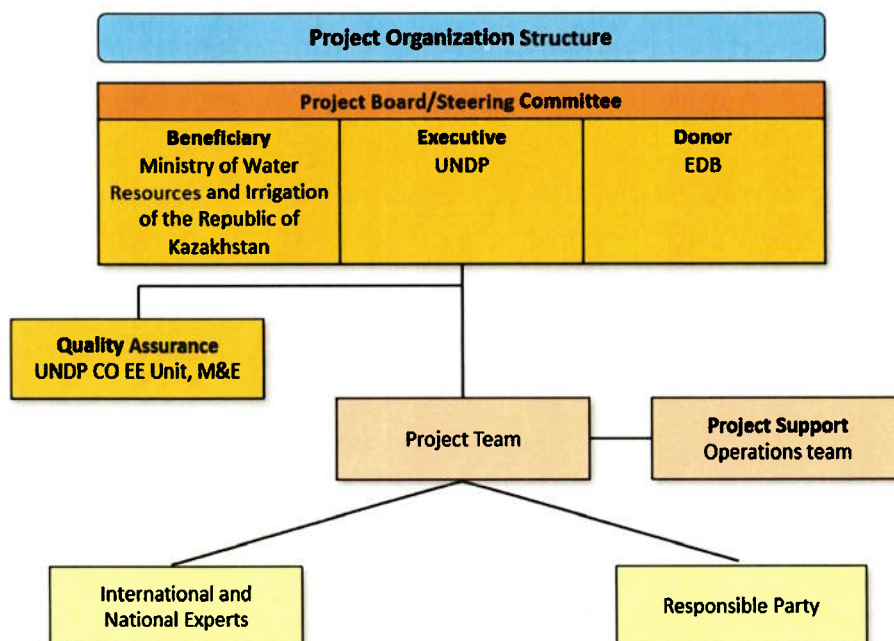
In accordance with UNDP policies and procedures, the responsible party shall be responsible for the project implementation. National regulations, rules, and procedures shall apply to the project implementation to the extent that they do not contradict the UNDP financial regulations and rules. The responsible party shall be responsible for achieving the goals and key outputs and ensuring that key partners and beneficiaries are engaged in its implementation, contribute to the implementation of the necessary political reforms at the national and regional levels, and ensure synergy between the project implementation and relevant public policy measures, as well as sustainability and continuity of the project outcomes.

As an implementing partner, UNDP will be responsible to¹⁵:

- Develop, and appraise a detailed Annual Work Plan, risk log, and the monitoring, gender mainstreaming and communication plans;
- Responsible for delivering donor's project cycle management services comprising project approval and start-up, project supervision and oversight, and project completion and evaluation;
- Ensure that the donor's resources are being used for the purpose intended.
- Address project issues as raised by the responsible party;
- Provide guidance and agree on possible countermeasures/management actions to address specific risks;
- Review and approve final project report, make recommendations for follow-on actions;
- Provide ad-hoc direction and advice for exception situations;
- Assure that all Project deliverables have been produced satisfactorily;
- Review and approve the Final Project Report and Exit Strategy, including lessons learned.

The Project organization structure is as follows:

¹⁵ Subject to change during full proposal development stage



IX. LEGAL CONTEXT

This project document shall be the instrument referred to as such in Article 1 of the Standard Basic Assistance Agreement between the Government of the Republic of Kazakhstan and UNDP, signed on 4 October 1994. All references in the SBAA to "Executing Agency" shall be deemed to refer to "Implementing Partner."

This project will be implemented by UNDP ("Implementing Partner") in accordance with its financial regulations, rules, practices and procedures only to the extent that they do not contravene the principles of the Financial Regulations and Rules of UNDP. Where the financial governance of an Implementing Partner does not provide the required guidance to ensure best value for money, fairness, integrity, transparency, and effective international competition, the financial governance of UNDP shall apply.

X. RISK MANAGEMENT

1. UNDP as the Implementing Partner will comply with the policies, procedures and practices of the United Nations Security Management System (UNSMS.)
2. UNDP as the Implementing Partner will undertake all reasonable efforts to ensure that none of the [project funds]¹⁶ [UNDP funds received pursuant to the Project Document]¹⁷ are used to provide support to individuals or entities associated with terrorism, that the recipients of any amounts provided by UNDP hereunder do not appear on the United Nations Security Council Consolidated Sanctions List, and that no UNDP funds received pursuant to the Project Document are used for money laundering activities. The United Nations Security Council Consolidated Sanctions List can be accessed via <https://www.un.org/securitycouncil/content/un-sc-consolidated-list>. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.

¹⁶ To be used where UNDP is the Implementing Partner

¹⁷ To be used where the UN, a UN fund/programme or a specialized agency is the Implementing Partner

3. Social and environmental sustainability will be enhanced through application of the UNDP Social and Environmental Standards (<http://www.undp.org/ses>) and related Accountability Mechanism (<http://www.undp.org/secu-srm>).

4. UNDP as the Implementing Partner will: (a) conduct project and programme-related activities in a manner consistent with the UNDP Social and Environmental Standards, (b) implement any management or mitigation plan prepared for the project or programme to comply with such standards, and (c) engage in a constructive and timely manner to address any concerns and complaints raised through the Accountability Mechanism. UNDP will seek to ensure that communities and other project stakeholders are informed of and have access to the Accountability Mechanism.

5. In the implementation of the activities under this Project Document, UNDP as the Implementing Partner will handle any sexual exploitation and abuse ("SEA") and sexual harassment ("SH") allegations in accordance with its regulations, rules, policies and procedures.

6. All signatories to the Project Document shall cooperate in good faith with any exercise to evaluate any programme or project-related commitments or compliance with the UNDP Social and Environmental Standards. This includes providing access to project sites, relevant personnel, information, and documentation.

7. UNDP as the Implementing Partner will ensure that the following obligations are binding on each responsible party, subcontractor, and sub-recipient:

- a. Consistent with the Article III of the SBAA *[or the Supplemental Provisions to the Project Document]*, the responsibility for the safety and security of each responsible party, subcontractor and sub-recipient and its personnel and property, and of UNDP's property in such responsible party's, subcontractor's and sub-recipient's custody, rests with such responsible party, subcontractor and sub-recipient. To this end, each responsible party, subcontractor and sub-recipient shall:
 - i. put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried;
 - ii. assume all risks and liabilities related to such responsible party's, subcontractor's and sub-recipient's security, and the full implementation of the security plan.
- b. UNDP reserves the right to verify whether such a plan is in place, and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of the responsible party's, subcontractor's and sub-recipient's obligations under this Project Document.
- c. Each responsible party, subcontractor and sub-recipient (each a "sub-party" and together "sub-parties") acknowledges and agrees that UNDP will not tolerate sexual harassment and sexual exploitation and abuse of anyone by the sub-parties, and other entities involved in Project implementation, either as contractors or subcontractors and their personnel, and any individuals performing services for them under the Project Document.
 - (a) In the implementation of the activities under this Project Document, each sub-party shall comply with the standards of conduct set forth in the Secretary General's Bulletin ST/SGB/2003/13 of 9 October 2003, concerning "Special measures for protection from sexual exploitation and sexual abuse" ("SEA").
 - (b) Moreover, and without limitation to the application of other regulations, rules, policies and procedures bearing upon the performance of the activities under this Project Document, in the implementation of activities, each sub-party, shall not engage in any form of sexual harassment ("SH"). SH is defined as any unwelcome conduct of a sexual nature that might reasonably be expected or be perceived to cause offense or humiliation, when such conduct interferes with work, is made a condition of employment or creates an intimidating, hostile or offensive work environment. SH may occur in the workplace or in connection with work. While typically involving a pattern of conduct, SH may take the form of a single incident. In assessing the reasonableness of expectations or perceptions, the perspective of the person who is the target of the conduct shall be considered.
- d. In the performance of the activities under this Project Document, each sub-party shall (with respect to its own activities), and shall require from its sub-parties (with respect to their activities) that they, have minimum standards and procedures in place, or a plan to develop and/or improve such standards and procedures in order to be able to take effective preventive and investigative action. These should include: policies on sexual harassment and sexual exploitation and abuse; policies on whistleblowing/protection against retaliation; and complaints, disciplinary and investigative mechanisms. In line with this, sub-parties will and will require that their respective sub-parties will take all appropriate measures to:
 - (i) Prevent its employees, agents or any other persons engaged to perform any services under this Project Document, from engaging in SH or SEA;

- (ii) Offer employees and associated personnel training on prevention and response to SH and SEA, where sub-parties have not put in place its own training regarding the prevention of SH and SEA, sub-parties may use the training material available at UNDP;
 - (iii) Report and monitor allegations of SH and SEA of which any of the sub-parties have been informed or have otherwise become aware, and status thereof;
 - (iv) Refer victims/survivors of SH and SEA to safe and confidential victim assistance; and
 - (v) Promptly and confidentially record and investigate any allegations credible enough to warrant an investigation of SH or SEA. Each sub-party shall advise UNDP of any such allegations received and investigations being conducted by itself or any of its sub-parties with respect to their activities under the Project Document, and shall keep UNDP informed during the investigation by it or any of such sub-parties, to the extent that such notification (i) does not jeopardize the conduct of the investigation, including but not limited to the safety or security of persons, and/or (ii) is not in contravention of any laws applicable to it. Following the investigation, the relevant sub-party shall advise UNDP of any actions taken by it or any of the other entities further to the investigation.
- e. Each sub-party shall establish that it has complied with the foregoing, to the satisfaction of UNDP, when requested by UNDP or any party acting on its behalf to provide such confirmation. Failure of the relevant sub-party to comply of the foregoing, as determined by UNDP, shall be considered grounds for suspension or termination of the Project.
- f. Each responsible party, subcontractor and sub-recipient will ensure that any project activities undertaken by them will be implemented in a manner consistent with the UNDP Social and Environmental Standards and shall ensure that any incidents or issues of non-compliance shall be reported to UNDP in accordance with UNDP Social and Environmental Standards.
- g. Each responsible party, subcontractor and sub-recipient will take appropriate steps to prevent misuse of funds, fraud, corruption or other financial irregularities, by its officials, consultants, subcontractors and sub-recipients in implementing the project or programme or using the UNDP funds. It will ensure that its financial management, anti-corruption, anti-fraud and anti money laundering and countering the financing of terrorism policies are in place and enforced for all funding received from or through UNDP.
- h. The requirements of the following documents, then in force at the time of signature of the Project Document, apply to each responsible party, subcontractor and sub-recipient: (a) UNDP Policy on Fraud and other Corrupt Practices (b) UNDP Anti-Money Laundering and Countering the Financing of Terrorism Policy; and (c) UNDP Office of Audit and Investigations Investigation Guidelines. Each responsible party, subcontractor and sub-recipient agrees to the requirements of the above documents, which are an integral part of this Project Document and are available online at www.undp.org.
- i. In the event that an investigation is required, UNDP will conduct investigations relating to any aspect of UNDP programmes and projects. Each responsible party, subcontractor and sub-recipient will provide its full cooperation, including making available personnel, relevant documentation, and granting access to its (and its consultants', subcontractors' and sub-recipients') premises, for such purposes at reasonable times and on reasonable conditions as may be required for the purpose of an investigation. Should there be a limitation in meeting this obligation, UNDP shall consult with it to find a solution.
- j. Each responsible party, subcontractor and sub-recipient will promptly inform UNDP as the Implementing Partner in case of any incidence of inappropriate use of funds, or credible allegation of fraud, corruption other financial irregularities with due confidentiality.
- Where it becomes aware that a UNDP project or activity, in whole or in part, is the focus of investigation for alleged fraud/corruption, each responsible party, subcontractor and sub-recipient will inform the UNDP Resident Representative/Head of Office, who will promptly inform UNDP's Office of Audit and Investigations (OAI). It will provide regular updates to the head of UNDP in the country and OAI of the status of, and actions relating to, such investigation.
- k. UNDP will be entitled to a refund from the responsible party, subcontractor or sub-recipient of any funds provided that have been used inappropriately, including through fraud corruption, other financial irregularities or otherwise paid other than in accordance with the terms and conditions of this Project Document. Such amount may be deducted by UNDP from any payment due to the responsible party, subcontractor or sub-recipient under this or any other agreement. Recovery of such amount by UNDP shall not diminish or curtail any responsible party's, subcontractor's or sub-recipient's obligations under this Project Document.

Where such funds have not been refunded to UNDP, the responsible party, subcontractor or sub-recipient agrees that donors to UNDP (including the Government) whose funding is the source, in whole or in part, of the funds for the activities under this Project Document, may seek recourse to such responsible party, subcontractor or sub-recipient for the recovery of any funds determined by UNDP to have been used inappropriately, including through fraud, corruption or other financial irregularities, or otherwise paid other than in accordance with the terms and conditions of the Project Document.

Note: The term “Project Document” as used in this clause shall be deemed to include any relevant subsidiary agreement further to the Project Document, including those with responsible parties, subcontractors and sub-recipients.

- l. Each contract issued by the responsible party, subcontractor or sub-recipient in connection with this Project Document shall include a provision representing that no fees, gratuities, rebates, gifts, commissions or other payments, other than those shown in the proposal, have been given, received, or promised in connection with the selection process or in contract execution, and that the recipient of funds from it shall cooperate with any and all investigations and post-payment audits.
- m. Should UNDP refer to the relevant national authorities for appropriate legal action any alleged wrongdoing relating to the project or programme, the Government will ensure that the relevant national authorities shall actively investigate the same and take appropriate legal action against all individuals found to have participated in the wrongdoing, recover and return any recovered funds to UNDP.
- n. Each responsible party, subcontractor and sub-recipient shall ensure that all of its obligations set forth under this section entitled “Risk Management” are passed on to its subcontractors and sub-recipients and that all the clauses under this section entitled “Risk Management Standard Clauses” are adequately reflected, *mutatis mutandis*, in all its sub-contracts or sub-agreements entered into further to this Project Document.

XI. ANNEXES

1. Project Quality Assurance Report

Project Quality Assurance has been done, and the Report will be available at Quantum+ (link will be included once it is populated into the system)

https://undp.lightning.force.com/lightning/r/Procedure_c/a37aA000003PeBpQAK/view

2. Social and Environmental Screening Template

Project Information

Project Information	
1. Project Title	Business Ecosystem Development for Sustainable Irrigation in Kazakhstan
2. Project Number (i.e. Atlas project ID, PIMS+)	01005200/1521414
3. Location (Global/Region/Country)	Kazakhstan
4. Project stage (Design or Implementation)	Design
5. Date	12 Jan 2026

Part A. Integrating Programming Principles to Strengthen Social and Environmental Sustainability

QUESTION 1: How Does the Project Integrate the Programming Principles in Order to Strengthen Social and Environmental Sustainability?

Briefly describe in the space below how the project mainstreams the human rights-based approach

In consideration of a human-rights based approach, the Project considers the following principles:

- Accountability and the rule of law: In implementing the Project, all standard UNDP policies on monitoring, evaluation, audits, and transparency will be followed for its accountability.
- Inclusiveness: The Project will engage multiple and diverse stakeholders at a national and regional level to ensure inclusiveness.
- Equality and non-discrimination: The Project will design and implement the project activities without discrimination on the grounds of race, ethnicity, gender, age, language, disability, sexual orientation, religion, political or other opinion, national or social or geographical origin, property, birth, or other.

Briefly describe in the space below how the project is likely to improve gender equality and women's empowerment

The Project will be fully compliant with gender mainstreaming requirements of UNDP.

In order to address the issue of under-representation of women in the water resource management sector, the Project intends to ensure that at least 30% of trainees for all training activities are women. Through this, the Project will contribute to enhancing the capacity of women in water resource management and potentially increase their role and representation in efficient and sustainable water resource management.

Briefly describe in the space below how the project mainstreams sustainability and resilience

The Project is designed to ensure the sustainability and resilience of the Outcomes beyond its lifespan. For example, developing efficient water use regulations will de-risk investments that will create conditions for economic growth and motivate investment to ensure that the whole modern irrigation business ecosystem will continue to develop further. More details are included in the Sustainability and Scaling up sections of the ProDoc.

Briefly describe in the space below how the project strengthens accountability to stakeholders

The Project will regularly conduct monitoring according to the Monitoring Plan in the ProDoc. The Project Board/Project Steering Committee meetings will also regularly take place to ensure address any issues regarding the accountability of stakeholders swiftly and ensure active engagement of stakeholders.

Part B. Identifying and Managing Social and Environmental Risks

QUESTION 2: What are the Potential Social and Environmental Risks? <i>Note: Complete SESP Attachment 1 before responding to Question 2.</i>		QUESTION 3: What is the level of significance of the potential social and environmental risks? <i>Note: Respond to Questions 4 and 5 below before proceeding to Question 5</i>		QUESTION 6: Describe the assessment and management measures for each risk rated Moderate, Substantial or High								
Risk Description (broken down by event, cause, impact)	Impact and Likelihood (1-5)	Significance (Low, Moderate, Substantial, High)	Comments (optional)	Description of assessment and management measures for risks rated as Moderate, Substantial or High								
Risk 1: Local governments (sub-national level) and communities might not have the capacity to implement project activities successfully.	I = 3 L = 2	Low	The modern irrigation system is not widely practiced in the country, therefore there is a possible risk of low capacities of relevant stakeholders.	The Project embedded capacity building and training at different levels of each component to ensure the stakeholders are well trained to enhance their capacity and adequately implement project activities.								
[add additional rows as needed]												
QUESTION 4: What is the overall project risk categorization?												
<table border="1"> <tr> <td>Low Risk</td> <td>☒</td> </tr> <tr> <td>Moderate Risk</td> <td>☐</td> </tr> <tr> <td>Substantial Risk</td> <td>☐</td> </tr> <tr> <td>High Risk</td> <td>☐</td> </tr> </table>					Low Risk	☒	Moderate Risk	☐	Substantial Risk	☐	High Risk	☐
Low Risk	☒											
Moderate Risk	☐											
Substantial Risk	☐											
High Risk	☐											
QUESTION 5: Based on the identified risks and risk categorization, what requirements of the SES are triggered? (check all that apply)												
Question only required for Moderate, Substantial and High Risk projects												
Is assessment required? (check if "yes")				Status? (completed, planned)								
if yes, indicate overall type and status				☐ Targeted assessment(s) ☐ ESIA (Environmental and Social Impact Assessment) ☐ SESA (Strategic Environmental and Social Assessment)								
Are management plans required? (check if "yes")				☐								

United Nations Development Programme

	<i>If yes, indicate overall type</i>	☐	Targeted management plans (e.g. Gender Action Plan, Emergency Response Plan, Waste Management Plan, others)	
		☐	ESMP (Environmental and Social Management Plan which may include range of targeted plans)	
		☐	ESMF (Environmental and Social Management Framework)	
	Based on identified risks, which Principles/Project-level Standards triggered?			
	Overarching Principle: Leave No One Behind			
	Human Rights	☒		
	Gender Equality and Women's Empowerment	☐		
	Accountability	☐		
	1. Biodiversity Conservation and Sustainable Natural Resource Management	☐		
	2. Climate Change and Disaster Risks	☐		
	3. Community Health, Safety and Security	☐		
	4. Cultural Heritage	☐		
	5. Displacement and Resettlement	☐		
6. Indigenous Peoples	☐			
7. Labour and Working Conditions	☐			
8. Pollution Prevention and Resource Efficiency	☐			
			Comments (not required)	

Final Sign Off

Final Screening at the design-stage is not complete until the following signatures are included

Signature	Date	Description
QA Assessor		UNDP staff member responsible for the project, typically a UNDP Programme Officer. Final signature confirms they have "checked" to ensure that the SESP is adequately conducted.
QA Approver		UNDP senior manager, typically the UNDP Deputy Country Director (DCD), Country Director (CD), Deputy Resident Representative (DRR), or Resident Representative (RR). The QA Approver cannot also be the QA Assessor. Final signature confirms they have "cleared" the SESP prior to submittal to the PAC.

United Nations Development Programme

PAC Chair		UNDP chair of the PAC. In some cases PAC Chair may also be the QA Approver. Final signature confirms that the SESP was considered as part of the project appraisal and considered in recommendations of the PAC.
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SESP Attachment 1. Social and Environmental Risk Screening Checklist

Checklist Potential Social and Environmental Risks	
INSTRUCTIONS: The risk screening checklist will assist in answering Questions 2-6 of the Screening Template. Answers to the checklist questions help to (1) identify potential risks, (2) determine the overall risk categorization of the project, and (3) determine required level of assessment and management measures. Refer to the SES toolkit for further guidance on addressing screening questions.	
Overarching Principle: Leave No One Behind Human Rights	Answer (Yes/No)
P.1 Have local communities or individuals raised human rights concerns regarding the project (e.g. during the stakeholder engagement process, grievance processes, public statements)?	No
P.2 Is there a risk that duty-bearers (e.g. government agencies) do not have the capacity to meet their obligations in the project?	Yes
P.3 Is there a risk that rights-holders (e.g. project-affected persons) do not have the capacity to claim their rights?	No
<i>Would the project potentially involve or lead to:</i>	
P.4 adverse impacts on enjoyment of the human rights (civil, political, economic, social or cultural) of the affected population and particularly of marginalized groups?	No
P.5 inequitable or discriminatory impacts on affected populations, particularly people living in poverty or marginalized or excluded individuals or groups, including persons with disabilities? ¹⁶	No
P.6 restrictions in availability, quality of and/or access to resources or basic services, in particular to marginalized individuals or groups, including persons with disabilities?	No
P.7 exacerbation of conflicts among and/or the risk of violence to project-affected communities and individuals?	No
Gender Equality and Women's Empowerment	
P.8 Have women's groups/leaders raised gender equality concerns regarding the project, (e.g. during the stakeholder engagement process, grievance processes, public statements)?	No
<i>Would the project potentially involve or lead to:</i>	
P.9 adverse impacts on gender equality and/or the situation of women and girls?	No
P.10 reproducing discriminations against women based on gender, especially regarding participation in design and implementation or access to opportunities and benefits?	No
P.11 limitations on women's ability to use, develop and protect natural resources, taking into account different roles and positions of women and men in accessing environmental goods and services? <i>For example, activities that could lead to natural resources degradation or depletion in communities who depend on these resources for their livelihoods and well being</i>	No
P.12 exacerbation of risks of gender-based violence? <i>For example, through the influx of workers to a community, changes in community and household power dynamics, increased exposure to unsafe public places and/or transport, etc.</i>	No

¹⁶ Prohibited grounds of discrimination include race, ethnicity, sex, age, language, disability, sexual orientation, gender identity, religion, political or other opinion, national or social or geographical origin, property, birth or other status including as an indigenous person or as a member of a minority. References to "women and men" or similar is understood to include women and men, boys and girls, and other groups discriminated against based on their gender identities, such as transgender and transsexual people.

Sustainability and Resilience: Screening questions regarding risks associated with sustainability and resilience are encompassed by the Standard-specific questions below	
Accountability	
<i>Would the project potentially involve or lead to:</i>	

P.13	exclusion of any potentially affected stakeholders, in particular marginalized groups and excluded individuals (including persons with disabilities), from fully participating in decisions that may affect them?	No
P.14	grievances or objections from potentially affected stakeholders?	No
P.15	risks of retaliation or reprisals against stakeholders who express concerns or grievances, or who seek to participate in or to obtain information on the project?	No
Project-Level Standards		
Standard 1: Biodiversity Conservation and Sustainable Natural Resource Management		
<i>Would the project potentially involve or lead to:</i>		
1.1	adverse impacts to habitats (e.g. modified, natural, and critical habitats) and/or ecosystems and ecosystem services? <i>For example, through habitat loss, conversion or degradation, fragmentation, hydrological changes</i>	No
1.2	activities within or adjacent to critical habitats and/or environmentally sensitive areas, including (but not limited to) legally protected areas (e.g. nature reserve, national park), areas proposed for protection, or recognized as such by authoritative sources and/or indigenous peoples or local communities?	No
1.3	changes to the use of lands and resources that may have adverse impacts on habitats, ecosystems, and/or livelihoods? (Note: if restrictions and/or limitations of access to lands would apply, refer to Standard 5)	No
1.4	risks to endangered species (e.g. reduction, encroachment on habitat)?	No
1.5	exacerbation of illegal wildlife trade?	No
1.6	introduction of invasive alien species?	No
1.7	adverse impacts on soils?	No
1.8	harvesting of natural forests, plantation development, or reforestation?	No
1.9	significant agricultural production?	No
1.10	animal husbandry or harvesting of fish populations or other aquatic species?	No
1.11	significant extraction, diversion or containment of surface or ground water? <i>For example, construction of dams, reservoirs, river basin developments, groundwater extraction</i>	No
1.12	handling or utilization of genetically modified organisms/living modified organisms? ¹⁷	No
1.13	utilization of genetic resources? (e.g. collection and/or harvesting, commercial development) ¹⁸	No
1.14	adverse transboundary or global environmental concerns?	No
Standard 2: Climate Change and Disaster Risks		
<i>Would the project potentially involve or lead to:</i>		
2.1	areas subject to hazards such as earthquakes, floods, landslides, severe winds, storm surges, tsunami or volcanic eruptions?	No
2.2	outputs and outcomes sensitive or vulnerable to potential impacts of climate change or disasters? <i>For example, through increased precipitation, drought, temperature, salinity, extreme events, earthquakes</i>	No
2.3	increases in vulnerability to climate change impacts or disaster risks now or in the future (also known as maladaptive or negative coping practices)? <i>For example, changes to land use planning may encourage further development of floodplains, potentially increasing the population's vulnerability to climate change, specifically flooding</i>	No
2.4	increases of greenhouse gas emissions, black carbon emissions or other drivers of climate change?	No
Standard 3: Community Health, Safety and Security		
<i>Would the project potentially involve or lead to:</i>		
3.1	construction and/or infrastructure development (e.g. roads, buildings, dams)? (Note: the GEF does not finance projects that would involve the construction or rehabilitation of large or complex dams)	No
3.2	air pollution, noise, vibration, traffic, injuries, physical hazards, poor surface water quality due to runoff, erosion, sanitation?	No

3.3	harm or losses due to failure of structural elements of the project (e.g. collapse of buildings or infrastructure)?	No
3.4	risks of water-borne or other vector-borne diseases (e.g. temporary breeding habitats), communicable and noncommunicable diseases, nutritional disorders, mental health?	No
3.5	transport, storage, and use and/or disposal of hazardous or dangerous materials (e.g. explosives, fuel and other chemicals during construction and operation)?	No
3.6	adverse impacts on ecosystems and ecosystem services relevant to communities' health (e.g. food, surface water purification, natural buffers from flooding)?	No
3.7	influx of project workers to project areas?	No
3.8	engagement of security personnel to protect facilities and property or to support project activities?	No
Standard 4: Cultural Heritage		
<i>Would the project potentially involve or lead to:</i>		
4.1	activities adjacent to or within a Cultural Heritage site?	No
4.2	significant excavations, demolitions, movement of earth, flooding or other environmental changes?	No
4.3	adverse impacts to sites, structures, or objects with historical, cultural, artistic, traditional or religious values or intangible forms of culture (e.g. knowledge, innovations, practices)? (Note: projects intended to protect and conserve Cultural Heritage may also have inadvertent adverse impacts)	No
4.4	alterations to landscapes and natural features with cultural significance?	No
4.5	utilization of tangible and/or intangible forms (e.g. practices, traditional knowledge) of Cultural Heritage for commercial or other purposes?	No
Standard 5: Displacement and Resettlement		
<i>Would the project potentially involve or lead to:</i>		
5.1	temporary or permanent and full or partial physical displacement (including people without legally recognizable claims to land)?	No
5.2	economic displacement (e.g. loss of assets or access to resources due to land acquisition or access restrictions – even in the absence of physical relocation)?	No
5.3	risk of forced evictions? ¹⁸	No
5.4	impacts on or changes to land tenure arrangements and/or community based property rights/customary rights to land, territories and/or resources?	No
Standard 6: Indigenous Peoples		
<i>Would the project potentially involve or lead to:</i>		
6.1	areas where indigenous peoples are present (including project area of influence)?	No
6.2	activities located on lands and territories claimed by indigenous peoples?	No
6.3	impacts (positive or negative) to the human rights, lands, natural resources, territories, and traditional livelihoods of indigenous peoples (regardless of whether indigenous peoples possess the legal titles to such areas, whether the project is located within or outside of the lands and territories inhabited by the affected peoples, or whether the indigenous peoples are recognized as indigenous peoples by the country in question)? <i>If the answer to screening question 6.3 is "yes", then Standard 6 requirements apply, and the potential significance of risks related to impacts on indigenous peoples must be Moderate or above.ⁱ</i>	No
6.4	the absence of culturally appropriate consultations carried out with the objective of achieving FPIC on matters that may affect the rights and interests, lands, resources, territories and traditional livelihoods of the indigenous peoples concerned?	No

¹⁸ Forced eviction is defined here as the permanent or temporary removal against their will of individuals, families or communities from the homes and/or land which they occupy, without the provision of, and access to, appropriate forms of legal or other protection. Forced evictions constitute gross violations of a range of internationally recognized human rights.

United Nations Development Programme

6.5	the utilization and/or commercial development of natural resources on lands and territories claimed by indigenous peoples?	No
6.6	forced eviction or the whole or partial physical or economic displacement of indigenous peoples, including through access restrictions to lands, territories, and resources? <i>Consider, and where appropriate ensure, consistency with the answers under Standard 5 above</i>	No
6.7	adverse impacts on the development priorities of indigenous peoples as defined by them?	No
6.8	risks to the physical and cultural survival of indigenous peoples?	No
6.9	impacts on the Cultural Heritage of indigenous peoples, including through the commercialization or use of their traditional knowledge and practices? <i>Consider, and where appropriate ensure, consistency with the answers under Standard 4 above.</i>	No
Standard 7: Labour and Working Conditions		
<i>Would the project potentially involve or lead to: (note: applies to project and contractor workers)</i>		
7.1	working conditions that do not meet national labour laws and international commitments?	No
7.2	working conditions that may deny freedom of association and collective bargaining?	No
7.3	use of child labour?	No
7.4	use of forced labour?	No
7.5	discriminatory working conditions and/or lack of equal opportunity?	No
7.6	occupational health and safety risks due to physical, chemical, biological and psychosocial hazards (including violence and harassment) throughout the project life-cycle?	No

Standard 8: Pollution Prevention and Resource Efficiency		
<i>Would the project potentially involve or lead to:</i>		
8.1	the release of pollutants to the environment due to routine or non-routine circumstances with the potential for adverse local, regional, and/or transboundary impacts?	No
8.2	the generation of waste (both hazardous and non-hazardous)?	No
8.3	the manufacture, trade, release, and/or use of hazardous materials and/or chemicals?	No
8.4	the use of chemicals or materials subject to international bans or phase-outs? <i>For example, DDT, PCBs and other chemicals listed in international conventions such as the Montreal Protocol, Minamata Convention, Basel Convention, Rotterdam Convention, Stockholm Convention</i>	No
8.5	the application of pesticides that may have a negative effect on the environment or human health?	No
8.6	significant consumption of raw materials, energy, and/or water?	No

3. Risk Analysis

OFFLINE PORTFOLIO/PROJECT RISK REGISTER TEMPLATE

Portfolio/Project Title: Business Ecosystem Development for Sustainable Irrigation in Kazakhstan					Portfolio/Project Number:	Date: 24-December-2025		
#	Event	Cause	Impact(s)	Risk Category and Sub-category (including Risk Appetite)	Impact, Likelihood & Risk Level (see Annex 3 Risk Matrix)	Risk Valid From/To	Risk Owner (individual team accountable for managing the risk)	Risk Treatment and Treatment Owner
1	There is a risk that EDB's assets may be impacted by sanctions imposed on Russia.	As a result of Russia's largest ownership in the share capital of EDB (44.79%, as of January 2023).	Which will impact in delaying the project delivery.	7. STRATEGIC (7.3. Stakeholder relations and partnerships) - UNDP Risk Appetite: OPEN TO SEEKING	Likelihood: 3 - Moderately likely Impact: 3 - Intermediate Risk level: MODERATE (equates to a risk appetite of EXPLORATORY)	From: 2026 To: 2029	Project Team	Risk Treatment 1.1: Develop proactive and preemptive measures to respond to potential risk with support from relevant offices/teams. Risk Treatment Owner: Project Team
2	There is a risk that allegations made against EDB's hydropower plant projects may rise again.	As a result of EDB not responding to the allegation.	Which will impact in reputation of the Project which is also in the water sector.	5. REPUTATIONAL (5.1. Public opinion and media) - UNDP Risk Appetite: CAUTIOUS	Likelihood: 2 - Low likelihood Impact: 2 - Minor Risk level: LOW (equates to a risk appetite of CAUTIOUS)	From: 2026 To: 2028	Project Team	Risk Treatment 2.1: Regularly monitor to check if the allegation is brought back to light. Risk Treatment Owner: Project Team
3	There is a risk that allegations made against EDB's Amulsar Gold Mine project may rise again.	As a result of EDB not responding to the allegation.	Which will impact in reputation of the Project and/or the partnership.	5. REPUTATIONAL (5.1. Public opinion and media) - UNDP	Likelihood: 2 - Low likelihood Impact:	From: 2026 To: 2029	Project Team	Risk Treatment 3.1: Regularly monitor to check if the allegation is brought back to light.

United Nations Development Programme

#	Event	Cause	Impact(s)	Risk Category and Sub-category (including Risk Appetite)	Impact, Likelihood & Risk Level (see Annex 3 Risk Matrix)	Risk Valid From/To	Risk Owner (individual team accountable for managing the risk)	Risk Treatment and Treatment Owner
				Risk Appetite: CAUTIOUS	2 - Minor Risk level: LOW (equates to a risk appetite of CAUTIOUS)			Risk Treatment Owner: Project Team
4	There is a risk that participants of the training may miss or not get the right competences.	As a result of participants of the training not understanding the training or not valuing the training.	Which will impact in the result of the Project.	3. OPERATIONAL (3.8. Capacities of the partners) - UNDP Risk Appetite: EXPLORATORY TO OPEN	Likelihood: 3 - Moderately likely Impact: 3 - Intermediate Risk level: MODERATE (equates to a risk appetite of EXPLORATORY)	From: 2026 To: 2029	Project Team	Risk Treatment 4.1: Develop a training programme to ensure the engagement of the trainees with close consultation with relevant stakeholders (local authorities, potential trainees, etc.). Risk Treatment Owner: Project Team
5	There is a risk that adequate trainees might not be found.	As a result of lack of local professionals.	Which will impact in the speed of implementation and delivery of the Project.	3. OPERATIONAL (3.8. Capacities of the partners) - UNDP Risk Appetite: EXPLORATORY TO OPEN	Likelihood: 2 - Low likelihood Impact: 3 - Intermediate Risk level: MODERATE (equates to a risk appetite of EXPLORATORY)	From: 2026 To: 2028	Project Team	Risk Treatment 5.1: Closely consult with stakeholders and thoroughly research to understand the pool of professionals with adequate skills. Risk Treatment Owner: Project Team
6	There is a risk that the Project might lose momentum or full support due to lack of prioritization.	As a result of change in the government priorities.	Which will impact in the implementation of the Project with full support from the government.	7. STRATEGIC (7.5. Government commitment) - UNDP Risk Appetite: OPEN TO SEEKING	Likelihood: 1 - Not likely Impact: 3 - Intermediate Risk level:	From: 2026 To: 2028	Project Team	Risk Treatment 6.1: Regularly discuss with the Government/Ministry to ensure their continuous prioritization in the

United Nations Development Programme

#	Event	Cause	Impact(s)	Risk Category and Sub-category (Including Risk Appetite)	Impact, Likelihood & Risk Level (see Annex 3 Risk Matrix)	Risk Valid From/To	Risk Owner (individual team accountable for managing the risk)	Risk Treatment and Treatment Owner
					LOW (equates to a risk appetite of CAUTIOUS)			water resources management. Risk Treatment Owner: Project Team
7	There is a risk that social tension or negative opinion may raise regarding legislative or regulatory transitions or change.	As a result of different interests among stakeholders and beneficiaries.	Which will impact in the government taking action for legislative or regulatory transitions or change.	7. STRATEGIC (7.5. Government commitment) - UNDP Risk Appetite: OPEN TO SEEKING	Likelihood: 2 - Low likelihood Impact: 3 - Intermediate Risk level: MODERATE (equates to a risk appetite of EXPLORATORY)	From: 2026 To: 2028	Project Team	Risk Treatment 7.1: Conduct pre-assessment of the possible impact at all levels Risk Treatment Owner: Project Team
8	There is a risk that activities based on existing data may be delayed	As a result of incomplete data or lack of adequate data available.	Which will impact in the implementation of activities.	3. OPERATIONAL (3.8. Capacities of the partners) - UNDP Risk Appetite: EXPLORATORY TO OPEN	Likelihood: 2 - Low likelihood Impact: 3 - Intermediate Risk level: MODERATE (equates to a risk appetite of EXPLORATORY)	From: 2026 To: 2028	Project Team	Risk Treatment 8.1: Conduct research on available resource when designing the details of activities Risk Treatment Owner: Project Team

4. **Capacity Assessment:** Results of capacity assessments of Implementing Partner (including Partner Capacity Assessment Tool (PCAT) and HACT Micro Assessment)

To be discussed during the initiation phase.

5. **Project Board Terms of Reference and TORs of key management positions.**

UNDP Standard Terms of Reference (ToR) for the Project Board of Business Ecosystem Development for Sustainable Irrigation in Kazakhstan

I. Background

All UNDP projects must be governed by a multi-stakeholder board or committee established to review performance based on established monitoring and evaluation metrics and high-level implementation issues to ensure quality delivery of results. The Project Board is the most senior, dedicated oversight body for a UNDP 'Development Project', which is defined in the PPM as an instrument where UNDP "Delivers outputs where UNDP has accountability for design, oversight and quality assurance of the entire project.

II. Duties and Responsibilities

The two prominent (mandatory) roles of the Project Board are as follows:

- 1) **High-level oversight of the project** (as explained in the "[Provide Oversight](#)" section of the PPM). This is the primary function of the Project Board. Project Board reviews evidence of project performance based on monitoring, evaluation and reporting, including progress reports, monitoring missions' reports, evaluations, risk logs, quality assessments, and the combined delivery report. The Project Board is the main body responsible for taking corrective actions as needed to ensure the project achieves the desired results. And its function includes oversight of annual (and as-needed) assessments of any major risks to the programme or project, and related decisions/agreements on any management actions or remedial measures to address them effectively.

The Project Board also carries the role of quality assurance of the project taking decisions informed by, among other inputs, the project quality assessment. In this role the Board is supported by the quality assurer, whose function is to assess the quality of the project against the corporate standard criteria. This function is performed by a UNDP programme or monitoring and evaluation officer to maintain independence from the project manager regardless of the project's implementation modality.

The Eurasian Development Bank (EDB) acting as a Partner in the Project shall be entitled to initiate unscheduled meetings of the Project Board if deviations in project implementation are identified.

The Project Board reviews updates to the project risk log.

- 2) **Approval of key project execution decisions** (as explained in the "[Manage Change](#)" section of the PPM). The Project Board has an equally important, secondary role in approving certain adjustments above provided tolerance levels, including substantive programmatic revisions (major/minor amendments), budget revisions, requests for suspension or extension and other major changes (subject to additional funding partner/donor requirements).

The Project Board makes decisions on the following issues for their subsequent review, approval, or modification. However, decisions on the issues listed below cannot be made without the prior written consent of the EDB:

- Project budget reallocation or modification;
- Change in the implementation timelines of the main components of the Project;
- On exceptional basis the Terms of Reference for the consultant and the development of the Feasibility Study with an assessment of the economic, social, and environmental aspects of the pilot hydraulic structure for the "Construction of the Kenderlyk River Reservoir" Project are subject to agreement with the EDB.

United Nations Development Programme

The Project Board is responsible for making management decisions by consensus when required, including the approval of project plans and revisions, and the project manager's tolerances. The Project Board approves annual work plans and reviews updates to the project risk log.

As per the Project Document, the governance of the project will be ensured through the Project Board. Which will comprise representatives of:

- UNDP Kazakhstan
- Ministry of Water Resources and Irrigation of the Republic of Kazakhstan
- Eurasian Development Bank (by agreement)

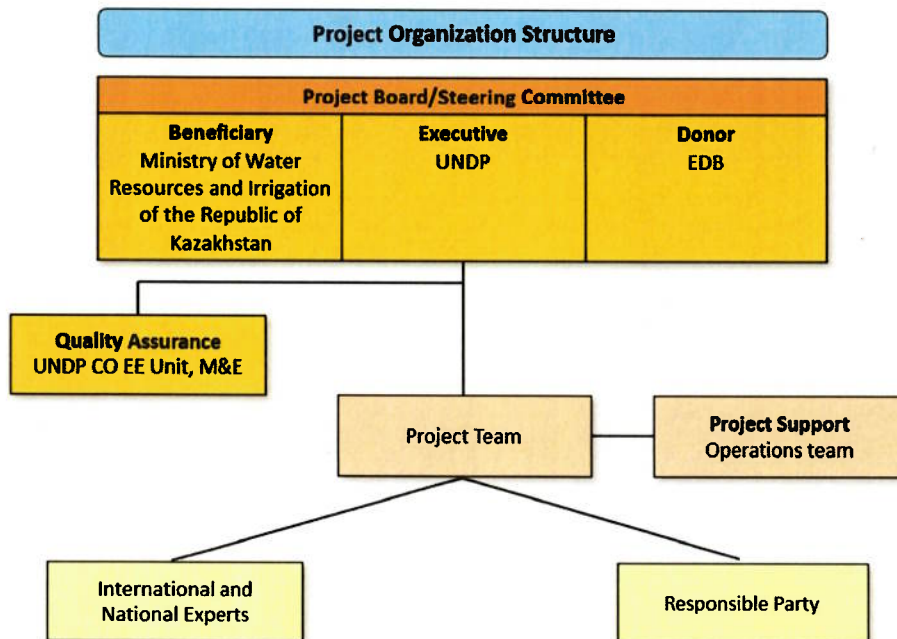


Diagram 1 – Project Organization Structure

In order to ensure UNDP's ultimate accountability, the Project Board decisions should be made in accordance with [the Quality Standards for Programming](#) that shall ensure management for development results, best value money, fairness, integrity, transparency and effective national and international competition. An effective Project Board needs credible data, evidence, quality assurance and reporting to aid decision making (see next section on supporting functions to the Board). The Project Board also needs to be accountable to protect against conflicts of interest and fraud.

Specific responsibilities of the Project Board include the following:

- Provide overall guidance and direction to the project, ensuring it remains within any specified constraints, and promote gender equality and social inclusion (LNOB) in the project implementation;
- Review project performance based on monitoring, evaluation and reporting, including standard quality assurance checks, progress reports, risk logs, spot checks/audit reports and the combined delivery report;
- Address any high-level project issues as raised by the project manager and project assurance;
- Provide guidance on emerging and/or pressing project risks and agree on possible mitigation and management actions to address specific risks (including ensuring compliance with UNDP's Social and Environmental Standards, Fraud/corruption, Sexual Exploitation and Abuse and Sexual Harassment);
- Agree or decide on project manager's tolerances as required, within the parameters set by UNDP ([Manage Change](#) in the PPM) and the partner, and provide direction and decisions for exceptional situations when the project manager's tolerances are exceeded;
- Advise on major and minor amendments to the project within the parameters set by UNDP and the partner;

- Agree or decide on a project suspension or cancellation, if required;
- Provide high-level direction and recommendations to the project management unit to ensure that the agreed deliverables are produced satisfactorily according to plans.
- Receive and address project level grievance, including overseeing whatever specific compliance and stakeholder response (or grievance) mechanisms have been put in place so that individuals and communities potentially affected by the project have access to effective mechanisms and procedures for raising concerns about the social and environmental performance of the project¹⁹.
- Engage in the low value grant selection process where there is no Grant Selection Committee, as guided by the [Low Value Grants – UNDP Operational Guide](#).

Additional responsibilities of the Project Board can include, but are not limited to, the following:

- Ensure coordination between the various donors and government-funded projects and programmes;
- Report to relevant inter-ministerial bodies or higher-level oversight bodies;
- Ensure coordination with multiple government agencies and their participation in project activities;
- Track and monitor co-financing for this project;
- Appraise the annual project implementation report, including the quality assessment rating report;
- Ensure commitment of human resources to support project implementation, arbitrating any issues within the project;
- Act as an informal consultation mechanism for stakeholders;
- Approve the Project Inception Report, Mid-term Review and Terminal Evaluation reports and corresponding management responses;
- Review the final project report package during an end-of-project review meeting to discuss lessons learned and opportunities for scaling up;
- Providing guidance or reporting protocols to technical committees or sub-bodies reporting to the Board (if applicable);

III. Composition of the Project Board

As noted in the diagram above, every Project Board in a UNDP project has three categories of formal members (e.g. voting members). The role of every formal Project Board member must correspond to one of these three roles and be identified accordingly in the project documentation.

The three categories of Project Board members are the following:

- 1) **Project Director/Executive(s):** The Executive role will remain with UNDP that will represent the project ownership and serve as implementing partner for the project. UNDP will be responsible for full execution of the project activities, including planning, implementation, monitoring, evaluation, and coordination with other initiatives.
- 2) **Beneficiary Representative(s):** This is an individual(s) representing the interests of those groups of stakeholders who will ultimately benefit from the project. Their primary function within the Board is to ensure the realization of project results from the perspective of project beneficiaries. A representative of the MWRI will play this role.
- 3) **Partner(s):** Individuals representing the interests of the parties concerned that provide funding, strategic guidance and/or technical expertise to the project¹⁹. The Development Partner representative of this Project is Eurasian Development Bank.

A **UNDP representative must always be represented in the Project Board** in either the project executive or development partner role.

Where applicable, representatives from responsible parties to the project cannot sit on the Project Board as a formal voting member; they can (if requested) attend board meetings as observers. Since the chief responsibility of the Board is to provide high-level oversight of project implementation, to avoid any conflicts of interest, it is not appropriate for representatives of third party entities engaged by the project to provide services – whether responsible parties or contractors/service providers – to concurrently sit on the Board. Representatives of responsible parties can attend

¹⁹ The responsibilities of the board in this regard should follow [UNDP's Social and Environmental Standards](#) (SES) as codified in the PPM. It should be noted that while a project board can play a role in addressing or assisting with the compliance and stakeholder response (or grievance) mechanisms put in place for a given project (as part of their quality assurance and oversight function), this will be in addition to and does not substitute for UNDP's core responsibility to ensure compliance with the SES throughout the project management cycle as part of UNDP's Programming Quality Assurance system.

board meetings (as observers) but can have no official role in board decision-making. The same principle applies to the project manager who in attending and presenting at board meetings, does so in a non-voting capacity.

In cases where the inputs and guidance of responsible parties or other entities formally engaged in providing goods or services to the project are needed by the Board on a recurring basis, it is recommended to establish appropriate advisory or technical committees or working groups composed of those entities that can formally report to the Board, while ensuring the impartiality and integrity of board decisions happening independent of those bodies (see Section V of the ToR).

Right to vote and quorum:

a) Establish the mandatory participation of an EDB representative in the adoption of all decisions of the Project Board. Quorum shall not be deemed as reached in the absence of EDB representatives.

IV. Standard Project Board Protocols

The Project Board must meet one time annually at a minimum. It is recommended that the timing of board meetings be agreed upon in advance and corresponds to key project reporting or work planning milestones. This Project Board will meet 2 times annually according to this provisional schedule.

Project Board members cannot receive remuneration from project funds for their participation in the Board. However, it is allowable for board members to be reimbursed from project funds for certain reasonable, qualified expenses related to travel or lodging to attend board meetings. Such protocols are outlined in this ToR and the benefits are applicable to all eligible board members.

All Project Boards must have rules for quorum and documentation/minuting of board decisions. All board decisions and minutes should be kept by the project management unit and UNDP.

Unless otherwise specified, Project Board decisions are made by unanimous consensus. If a consensus cannot be reached within the Board, the final decision shall rest with the UNDP representative on the Project Board or a UNDP staff member with delegated authority as the programme manager.²⁰

It is required that as per internationally recognized professional standards and principles of sound governance, conflicts of interest affecting board members in performing their duties must be formally disclosed if not avoidable. Where a board member has a specific personal conflict of interest with a given matter before the board, he/she must recuse oneself from their participation in a decision. No board member can vote or deliberate on a question in which he/she has a direct personal or pecuniary interest not common to other members of the board.

All board members should be presented with a ToR for the Project Board, which will include the responsibilities already outlined and indicate agreed board practices and logistics.

V. Standard Outputs of Project Board Meetings

In its oversight function, the Project Board will (at a minimum) review and assess the following project-related evidence at each meeting:

- Assessment of project progress to date against project output indicators (as documented in the project document results framework)
- Approval/review of annual work plans
- Assessment of the relevant Monitoring & Evaluation mechanisms, including all evaluations²¹
- Review and assessment of the Project Risk Log (with updating/amendments as needed)
- Assessment of project spending, based on a review of the combined delivery report
- Review of required resources versus available funding (if applicable) and steps taken to reduce funding gap identified at the project design stage

This will be in addition to the review and approval of any required project execution decisions.

The output of every Project Board should be a written record (minutes) that captures the agenda and issues discussed and the agreed upon action items and decisions (if applicable). Each report should clearly document the members attending the meeting (as well as all participants in the meeting) and the modality used to agree on a certain action or decision (whether formal voting or no-objection or other mechanism). All records of board meetings should be documented and kept by UNDP in their quality assurance function (see next section).

VI. Support Functions to the Project Board

There are two main entities/functions outside the Project Board structure whose role is to report to the Project Board and support board members in effectively fulfilling their roles: project assurance and project management.

²⁰ UNDP has this special right since the ultimate legal and fiduciary accountability for a UNDP project, irrespective of modality, rests with UNDP and UNDP must (in line with its obligations to donors and to the Executive Board) be able to ensure that no action is taken by any body in a UNDP project that contravenes UNDP rules and regulations.

²¹ Including audit reports and spot checks.

Project Assurance: The Project Assurance role supports the Project Board by carrying out objective and independent project oversight and monitoring functions which are mandatory for all projects. Project Assurance must be independent of the Project Manager; therefore, the PB cannot delegate any of its assurance responsibilities to the Project Manager. The Project Assurance role will rest with UNDP Quality Assurance Team who is expected to attend all Project Board meetings. The project assurance team will:

- Guide on the preparation of the project reviews and Project Board meetings as well as clear the applicable project and quality assessment reports in line with the monitoring policy of UNDP.
- Monitor project delivery on regular basis and tracks project management milestones, as required.
- Provide QA support and monitor activities.
- Ensure that project output definitions and activity definitions including description and quality criteria have been properly recorded in relevant QUANTUM modules to facilitate monitoring and reporting.
- Ensure that risks and issues are properly managed, and that the logs in QUANTUM are regularly updated.
- Ensure that Monitoring and Evaluation Plan is followed, and all reports submitted on time, and according to standards in terms of format and content quality.
- Perform oversight activities, such as periodic monitoring visits and “spot checks” as required.

Ensure that project operational and financial closure procedures are duly carried out.

Project Support, this function is often covered by the Project Management Unit: The Project Coordinator is the senior most representative of the Project Management Unit (PMU) and is responsible for the overall management of the project on behalf of the Implementing Partner, including the mobilization of all project inputs, supervision over project staff, responsible parties, consultants and sub-contractors. The project coordinator typically presents key deliverables and documents to the Board for review and approval, including progress reports, annual work plans, adjustments to tolerance levels and risk logs.

A designated representative of the PMU is expected to attend all board meetings and present the required progress reports and other documentation needed to support board processes as a non-voting representative.

Annex A – Acknowledgement of this ToR by each designated official Project Board member

The formal acknowledgement of the ToR by board members can be done in a following way:

- 1) The final ToR be signed by each appointed board member at the first project board meeting after Project Document signing with the approvals recorded in the minutes of the meeting.

The signature or acknowledgement should include the name, title and category of board representation for the person signing.

ⁱ Note: revised July 2022 modifying presumption of risk significance from Substantial or higher to Moderate or higher.