

# 1 Cover Page

**UN Multi-Partner Human Security Trust Fund for  
the Aral Sea Region in Uzbekistan**

UNDP and FAO

Project<sup>1</sup> Title: “Building knowledge and skills of local partners and communities to address environmental insecurities through innovative air, land, and water management solutions in the Aral Sea Region”.

Project Duration:
Anticipated start/end dates: <u>June – Dec 2024</u>
Fund Management Option(s): Pass-through
Managing or Administrative Agent: <u>N/A</u> (if/as applicable)





Total estimated budget*:	<u>USD 900,000.00</u> (Including co-financing)
Out of which:	
1. Funded Budget:	<u>USD 900,000</u>
2. Unfunded budget:	_____
* Total estimated budget includes both project costs and indirect	

Sources of funded budget:	
Donor	<u>USD 900,000.00</u>
UNDP	USD 0.00

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<sup>1</sup> The term “project” is used for programmes, joint programmes and projects

**Names and signatures of (sub) national counterparts and participating UN organizations**

UN organization(s)	National Coordinating Authority(ies)
<p>Name of Head of Partner: <b>Mr. Anas Qarman, UNDP Resident Representative in Uzbekistan a.i.</b></p> <p>DocuSigned by:              Signature: _____  <small>RC21B6E712D34C9</small></p> <p>Name of Institution: <b>UNDP in Uzbekistan</b></p>  <p>Date &amp; Seal:</p>	<p>Name of Head of Partner <b>Mr. Aziz Abdulkhakov, Minister of the Ecology, Environmental Protection and Climate Change of the Republic of Uzbekistan</b></p> <p>Signature: _____</p>  <p>Name of Institution: <b>Ministry of the Ecology, Environmental Protection and Climate Change of the Republic of Uzbekistan</b></p>  <p>Date &amp; Seal:</p>
<p>Name of Head of Partner: <b>Mr. Viorel Gutu, Assistant Director-General/Regional Representative for Europe and Central Asia / a.i. FAO Representative in Uzbekistan</b></p> <p>DocuSigned by:              Signature: _____  <small>12CECC9A4D35449</small></p> <p>Name of Institution: <b>FAO Representative Office in Uzbekistan</b></p>  <p>Date &amp; Seal:</p>	

<p>For the MPHSTF Steering Committee Co-chair (UN)</p> <p><b>Ms. Sabine Machl, UN Resident Coordinator in Uzbekistan, MPHSTF Steering Committee Co-chair</b></p> <p>Signature: </p> <p>Date &amp; Seal 25.06.2024 </p>	<p>For the MPHSTF Steering Committee Co-chair (Government of Uzbekistan)</p> <p><b>Mr. Aziz Kudratov, Minister of Investments, Industry and Trade of the Republic of Uzbekistan, MPHSTF Steering Committee Co-chair</b></p> <p>Signature: </p> <p>Date &amp; Seal </p>
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## 2 Executive Summary

This report contains a comprehensive overview of a proposed joint UNDP-FAO Programme that outlines the significance of the Programme, its contributions to national priorities, including the UN MPHSTF for the Aral Sea Region Outcomes and other international commitments, as well as results expected to be achieved, intended beneficiaries, donors, and implementing partners.

The fourth call for proposals under the UN Multi-Partner Human Security Trust Fund for the Aral Sea Region in Uzbekistan (MPHSTF) has the thematic focus on MPHSTF's Outcome 1 - The stress on local communities due to the deteriorating environmental situation reduced and its outputs in the Aral Sea region. In line with above, UNDP and FAO have developed a new Joint Programme titled: "Building knowledge and skills of local partners and communities to address environmental insecurities through innovative air, land, and water management solutions in the Aral Sea Region" to be implemented in Karakalpakstan (2024).

The proposed Programme is developed in alignment with the MPHSTF Programmatic Framework and Results Matrix to address multiple insecurity challenges in the Aral Sea region associated both with the Aral Sea crisis. Thus, it promotes integration of the human security concept including the comprehensive, context specific and prevention-oriented approaches. It will use top-down protection and bottom-up empowerment principles. The Programme will be guided by using the comprehensive, multi-sectoral, contextualized, emphasizing on prevention, partnership and collaboration.

The Joint Programme aims at improving the practice of managing ecosystem services at the local level, increasing the efficiency and innovations to address environmental degradation and its ongoing stress on local communities facing multiple vulnerabilities.

The proposed Programme will benefit mainly 200,700 indirect beneficiaries from 3 northern districts (Muynak-31,600; Kungrad - 129,200 and Takhtakupir - 39,900 districts) of Karakalpakstan and 355 direct beneficiaries that are the most affected by the Aral Sea disaster. The specific focus will be given to vulnerable groups such as women, children, and youth.

The Programme's goal and objectives are fully aligned with the policies and strategies of the Government of Uzbekistan on the development of the Aral Sea region, including the Presidential Decree on Aral Sea region adopted on July 29, 2021, which includes an action plan of activities by key ministries and agencies in line with the implementation of the special UN Resolution to transform the Aral Sea region into a Zone of Ecological Innovations and Technologies; Cabinet of Minister's degree on Integrated Roadmap for the sustainable development of the Aral Sea region adopted on 25 January 2022, the Government's comprehensive Development Programme for Karakalpakstan for 2020-2023 as well as the Green Transition Strategy adopted in 2019, which outlines the key priorities on green development, covering the Aral Sea region; Resolution of the Cabinet of Ministers Resolution, #31 dated 18th January 2022 on additional measures to create a "Green Cover" — Protective Forests on the Dried-Up bottom of the Aral Sea.

## 3 Situation Analysis

### 3.1 Overall context

Central Asia, including the Aral Sea Region, confronts an escalating environmental crisis, marked by an arid climate and a temperature surge nearly double the global average since the 1970s<sup>1</sup>. The Aral Sea, once the fourth largest lake in the world, has shrunk to 10% of its original size after the feeder rivers were

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<sup>1</sup> ESCAP, Managing in-land water disasters in the Aral Sea: sub-regional pathways for adaptation and resilience.

diverted for irrigation purposes. The Aral Sea, epitomizes environmental mismanagement, shaped by anthropogenic factors that have exacerbated human security. Glacial shrinkage and increased snow melting have further compounded the Region's vulnerability to climate change.

Studies have projected a division of the Aral Sea into two parts by the year 2030, a prediction that has already materialized, and there are indications that the situation may worsen without intervention. The feasibility of addressing certain environmental degradation issues and enhancing water management in the Region underscores the significance of this matter<sup>2</sup>.

Despite the significant efforts made by the Governments of Uzbekistan and Karakalpakstan along with international and local partners, the ongoing crisis in the Region continues to place severe pressures on the local population and the Region's ecosystems. As noted in numerous studies since the creation of the Fund in 2018, the Aral Sea Region remains the most vulnerable and disadvantaged region of the Republic of Uzbekistan. This has resulted in numerous ongoing negative impacts on society, including - but not limited to - land degradation and desertification, deteriorating ecosystems, threats to individuals' health and wellbeing, food shortages and malnutrition, soil and water pollution, limited access to clean drinking water, a dramatic loss in employment opportunities, and a lack of private sector investment needed to drive economic growth and employment. The region covers 37% of Uzbekistan's territory but contributes only 3.5% to the country's GDP.

### 3.2 Problem statement

As mentioned above, environmental shifts have profound implications for human security in Karakalpakstan.

The drying Aral Sea and reduced water flow pose severe threats to local livelihoods. Dry conditions trigger frequent dust storms, releasing salt and toxic chemicals from the seabed. Economic ramifications are stark, with the fishery industry loss and degrading land resources plunging 19.9% (Uzstats, 2023) of the population into poverty. Agriculture and remittances from labour migrants, constituting a significant income source, are highly insecure and prone to fluctuations.

High poverty levels, malnutrition, dust and sandstorms, and deteriorating drinking water quality adversely affect health, resulting in elevated rates of disease and mortality. Children in Karakalpakstan face health major risks, with 30% higher anemia, 2.5 times higher hematological diseases, and 2 times higher asthma rates than the national average. Tuberculosis incidence is double the national average, and cervical and breast cancers are prevalent.

Demographic trends reveal declining population growth, reduced birth rates, and increased mortality rates. Agriculture faces challenges from environmental issues, degraded land, water resources, and climate change, resulting in unsustainable dynamics despite a 1.9-fold increase in agricultural production between 2010 and 2016.

#### 3.2.1 Air pollution

The Aral Sea Basin stands out as a region characterized by elevated levels of arid-origin aerosol pollution permeating the atmosphere. This phenomenon is intricately linked to the arid nature of the environment and the presence of numerous natural aerosol emission sources. On average, the region experiences 20 to 67 dust storm days annually, with some years witnessing an alarming 108–146 days with dust storms. The dusty and saline aerosol, a critical component and satellite of the region's dust storms, originates from natural sources such as solonchaks (salty pans), secondary salinized irrigated regions, and the exposed bottom of the Aral Sea. Covering an expanse of approximately 150 thousand km<sup>2</sup> in the Aral Basin, solonchaks serve as a robust foundation for aeolian processes, consequently leading to the emission of salty dust.

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<sup>2</sup> UNEP Brief "The changing Aral Sea" Foresight\_Brief\_003\_2017.pdf (unep.org)

Studies spanning several years estimate that between 500 thousand and 57 million tons of salt and dust particles are introduced into the air. The deposition of these particles is contingent upon topography, wind speed, and distance from the source. Consequently, salt emissions exert adverse effects on local living conditions, biodiversity, environmental and agricultural productivity, as well as respiratory health<sup>3</sup>.

### 3.2.2 Water pollution

Since the 1960s, the Aral drainage basin region has witnessed the extensive use of banned pesticide chemicals, including dichlorodiphenyldichloroethylene (DDE), butiphos, propanide, hexachlorocyclohexane (HCH), and dichlorodiphenyltrichloroethane (DDT). Wastewater laden with these toxic chemicals from 146 collector-drainage systems was discharged into the Syr-Darya River during this period. Additionally, heavy metals and persistent organic compounds, primarily stemming from industrial and mining activities, were detected in the river. Studies reveal the presence of these chemicals in the blood plasma of pregnant women and breast milk.

The desiccation of the Aral Sea has resulted in the salinization of soil, groundwater, and rivers, giving rise to respiratory problems and the accumulation of kidney stones. The toxic substances mentioned earlier accumulate in plants, and traverse through animals, exacerbating their health issues due to inadequate sanitation, aging pipelines, and compromised water quality<sup>4</sup>.

### 3.2.3 Tugai forest degradation

Tugai forests are highly vital for carbon sequestration and removing air pollution by the interception of particulate matter on leaf surfaces and the absorption of gaseous pollutants through the leaf stomata, especially considering high air pollution level in the Aral Sea region. However, Tugai forests in Uzbekistan are currently the most degraded forest type due to land clearance for agriculture, uncontrolled fuelwood removal, grazing, logging, and reduced river flows. Over 90% of the forests have been lost due to these factors. The former saxaul vegetation, which comprised 9.7 million hectares, has also been lost. Windbreaks in irrigated agricultural areas have decreased from 40,000 to less than 20,000 hectares since the late 1990s. Uzbekistan's annual demand for timber, building materials, and fuelwood is estimated at 10 million m<sup>3</sup>. However, sanitary cuttings only meet 0.1% of the annual fuelwood demand. Rural communities lack access to alternative fuels, forcing forests to supply fuelwood. The rate of degradation has increased over the past ten years, particularly in broadleaf and juniper forests in the mountains, which are not actively protected and managed due to grazing pressure. As Tugai forests are among the most productive ecosystems in the Region, there is an urgent need for their restoration.

In conclusion, addressing the multifaceted environmental and human security challenges in the Aral Region requires a comprehensive and collaborative approach, evidenced by resolutions, roadmaps, and initiatives undertaken by the UN, Uzbekistan's government, and international organizations. Innovative strategies, local knowledge integration, and sustained cooperation are imperative for long-term solutions for the Region's vulnerable communities.

## 4 Strategies, including lessons learned and the proposed project

### 4.1 Government Policies, Strategies, and Decrees in addressing the Aral Sea problems.

The current project proposal is designed to align with government strategies and policies, particularly those related to environmental degradation, agriculture sector development, socioeconomic development,

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<sup>3</sup> "Dust storms as a factor of atmospheric air pollution in the Aral Sea basin" L. Orlovsky, G. Tolkacheva, N. Orlovsky & B. Mamedov, [chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.witpress.com/Secure/elibrary/papers/AIR04/AIR04035FU.pdf](https://www.witpress.com/Secure/elibrary/papers/AIR04/AIR04035FU.pdf)

<sup>4</sup> <https://www.mdpi.com/2073-4441/13/22/3196>



facilitating initiatives for improving water and land management and engaging local communities. The following key government priority document were considered during the programme proposal development:

- UN Special Resolution (18 May 2021) declaring the Aral Sea region a zone of ecological innovations and technologies.
- Presidential Decree on the Aral Sea region (July 29, 2021), which includes an action plan of activities by key ministries and agencies in line with the implementation of the special UN Resolution to transform the Aral Sea region into a Zone of Ecological Innovations and Technologies.
- Resolution of the Cabinet of Ministers Resolution, #31 dated 18th January 2022 on additional measures to create a "Green Cover" — Protective Forests on the Dried-Up bottom of the Aral Sea.
- Decree of President No. 5863 (October 30, 2019) "On approval of the concept of Environmental protection of the Republic of Uzbekistan until 2030"
- Resolution of the President No. 4919 (December 11th, 2020) "On measures to further accelerate the organization of the introduction of water-saving technologies in agriculture."
- Resolution of the President No. 5006 (February 24th, 2021) "On additional measures to improve the system of use and protection of agricultural land."
- Decree of the President of Uzbekistan No.5853 (October 23, 2019) on "Strategy for development of agriculture of the Republic of Uzbekistan for 2020-2030"
- Resolution No.4477 (July 4, 2019) "on approval of the strategy for the transition of the Republic of Uzbekistan to Green economy for the period of 2019-2030"

The proposed Programme is also in close alignment with the Government's major policy statements on the Aral Sea Region as well as those of the international community. Representative examples include:

- New Uzbekistan Development Strategy for 2022-2026.
- Resolution 41 of the Cabinet of Ministers (as noted above calling for "the transformation of the Aral Sea region from a region of ecological and humanitarian crisis to a zone of ecological innovations and technologies based on the principles of environmental innovations and technologies as well as "green" and circular economy."
- Presidential Resolution No.436 on adoption of Greed Growth Strategic Framework
- Initiative of the President of the Republic of Uzbekistan to declare the Aral Sea region a zone of environmental innovation and technology as a means for simultaneously solving economic, environmental, and social problems of the Aral Sea Region.

Statement by the President of Uzbekistan on the need for addressing climate change while stimulating economic growth through large-scale implementation of green technologies in key sectors of the Aral Sea region such as agriculture, power generation, water and land use, and energy consumption<sup>5</sup>.

#### 4.2 SDG-2030 Agenda, and other international commitments on the issue at the national level.

Specific SDGs of relevance to the Aral Sea Region crisis include:

SDG 1 – No poverty

SDG 2 – Zero hunger

SDG 3 – Good health and well-being

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<sup>5</sup>Message from President Shavkat Mirziyoyeva , January 24, 2020: <https://president.uz/ru/lists/view/3322>

SDG 5 – Gender equality

SDG 6 – Clean water and sanitation

SDG 7 – Affordable and clean energy

SDG 8 – Decent work and economic growth

SDG 11 – Sustainable cities and communities

SDG 13 – Climate action

SDG 15 - Life on land.

#### 4.3 UNSDCF Strategic Priorities and Outcomes

Uzbekistan’s UN Sustainable Development Cooperation Framework 2021-2025

- Strategic Priority B: Inclusive human capital development leading to health, well-being, and resilient prosperity.
- Strategic Priority C: Sustainable, climate-responsible, and resilient development

The UNSDCF further states: “by 2025, innovative, sustainable, age- and gender-sensitive climate change adaptation and mitigation initiatives are developed and implemented at the national and regional levels in the agricultural sectors economy, healthcare, water supply, transport, energy production and construction/housing sector, with a focus on regions at risk, including the Aral Sea region.”

#### 4.4 Design, multi-sectoral strategy, expected project/programme results and implementation plan.

As noted in this proposal's Theory of Change, the project has the goal of providing new and enhanced services that allow local partners and communities to be more fully capable of addressing the deteriorating environmental situation in the Aral Sea Region. Programme activities have the potential of reaching approximately 200,700 beneficiaries and 2.02 million indirect beneficiaries, in particular women in at-risk communities. This goal is specifically related to MPHSTF Outcome 1: The stress on local communities due to the deteriorating environmental situation is reduced.

In this regard, the attached log frame lays out a holistic approach to environmental security by addressing challenges related to ecosystem degradation, biodiversity loss, climate-induced changes, water scarcity, deforestation, and air pollution in the Aral Sea Region. Through awareness-building, capacity development, practical interventions (equipment installations, demonstration plots), and regulatory frameworks, the project aims to contribute significantly to improve the Region’s environmental well-being.

The project’s outputs are outlined below.

#### **Objective 1: Participatory ecosystem restoration to enhance community-based tugai and desert pasture ecosystems management (UNDP and FAO)**

##### Output 1.1 Inclusive participatory ecosystem services mapping

Under this sub-output, a participatory resource mapping (PRM) approach is proposed to be applied using local knowledge and experience to analyze geo-referenced information on tugai and pasture ecosystem services. Local communities will be involved from the beginning in method selection, application, evaluation, and verification. This “inclusive participatory ES mapping” will be conducted in selected villages in three

pilot district sites. The participatory ES mapping can facilitate social learning, provide the foundation for the creation of social and natural capital, and equip the community with sufficient spatial information to improve local ecosystems ecosystem management. The participatory ES mapping approach can be used as a model to support local and regional decision-making processes and to enhance community-based ecosystem management in other regions of the country and beyond. This will serve in supporting to support better policymaking in land management in conjunction with the food security of the Region. Community eco volunteers will be selected in pilot districts with further engagement into the assessment process.

#### Output 1.2: Enhanced Ecosystem Services

This output focuses on enhancing community community's understanding of local ecosystems and their services by aligning with international standards and sharing experiences through field trips, the aim is to address challenges such as limited awareness, insufficient data on ecosystems, and the negative impact of climate change on forestry. The approach ensures an innovative and people-centered strategy, incorporating technology transfer, participatory methods, and a focus on the specific needs and capacities of local communities.

Local communities' traditional knowledge of tested practices of pasture enrichment and tugai rehabilitation coupled with improved water management practices will serve as a fundamental way to tap into generations of wisdom and holistic visions. At the same time, ecosystem restoration is a powerful tool that can be used to empower local communities and cultivate individual and collective responsibility for the region's critically important ecosystems to sustain ecological balance and local livelihoods.

### **Objective 2: Adopting new approaches in water purification, afforestation, and soil stabilization in the Region (UNDP and FAO)**

#### Output 2.1 Supporting sustainable afforestation and land revitalizing practices in the Aral Sea Region

This output augments the success stories from previous years in the afforestation efforts of the Government, international partners (including UNDP and FAO) and other stakeholders. Capitalizing on the findings of the series of efforts on the flora and fauna of the dried Aral Seabed, this output aims to establish nurseries in the three target districts with salt resilient plants. In addition, the Programme envisions collaborating with local actors (IICAS and others) to enhance technical capacity to monitor land degradation and salinization in the Region to formulate sand and dust migration models. The Programme will support startup initiatives on soil stabilization such as chlorella, biohumus, zoohumus, buried diffuser technologies as well as establish nurseries specialized in growing drought-resistant plants in pilot communities, based on the results of the science based expeditions to the dried seabed, that covered the area of 2,7 million hectares of land.

#### Output 2.2: Enhanced integrated management and restoration of Tugai Forest ecosystems.

The second output centers on the restoration and sustainable management of tugai forest ecosystems. Through a series of activities, including assessments, seminars, workshops, and field trips, the aim is to address challenges related to water shortage, deforestation, and soil degradation. By piloting innovative technologies and practices, this output seeks to contribute to sustainable livelihoods and environmental resilience. This output contributes to the reduction of environmental stress by focusing on sustainable management and restoration of tugai forest ecosystems. The activities aim to pilot new technologies and approaches. The proposal integrates context-specific solutions, considering the unique conditions of the Aral Sea Region by involving communities in planning and implementation. The focus on technology transfer and partnerships aligns with the call's emphasis on innovation and integrated solutions.

### **Objective 3: Promoting integrated air, water, and soil quality monitoring systems to facilitate regulatory practices in the Region (UNDP and FAO)**

#### Output 3.1 Facilitating integrated air quality management systems and regulatory practices

Integrated Air Quality Management Systems (IAQMS) refer to comprehensive approaches to managing and improving air quality. These systems typically involve a combination of monitoring, assessment, and control measures to address air pollution and protect public health and the environment. Despite the regular sand and dust storms in the Aral Sea Region (<https://www.gazeta.uz/ru/2018/05/27/sandstorm/>), the capacity of the regional authority (UzHydromet) agency responsible for the air quality monitoring has not been modernized. To date, there is only one automated air quality monitoring station, based in Nukus in the Aral Sea Region. Thus, air quality monitoring is being done manually, which is time consuming and information delivery is delayed to the population. Time lags and delays in the provision of information on the hazards and abnormalities in the air are creating risks to the health and well-being of the population and therefore slow preventive actions. It also has a negative impact on food security.

In order to tackle the issue, the Programme is planning to establish automatic air quality monitoring systems at least in 8 locations of Karakalpakstan and integrate them into the national air quality monitoring system. As a result, responsible authorities (UzHydromet of Ministry of Ecology), the Ministry of Health, and the Ministry of Agriculture can exchange data and develop preventive measures so that residents are well informed about potential adverse effects. This output will support at least three startup initiatives on air, soil, and water monitoring systems deployed at the community level and initiated by the residents (with focus to youth, girls and women). Community eco-volunteers will be engaged in promoting air quality monitoring systems along with project partners. Moreover, data generated from the automatic air monitoring systems will be used to formulate national standards in line with SDG 11 for the Aral Sea Region.

#### Output 3.2: Enhanced comprehensive environmental quality management and regulatory practices.

This output is designed to address challenges associated with environmental pollution, water resource management, and the interconnectedness of environmental change, especially human health, and agriculture. This output directly addresses the quality of water, air, and soil pollution through enhanced environmental management and regulatory practices. The proposed activities include installation of monitoring networks . The emphasis on technology, community training, and policy recommendations reflects an integrated and people-centered approach to address environmental challenges. The ultimate goal is to establish robust environmental quality management and regulatory practices.

The proposal is designed to be innovative by piloting new technologies that are people-centered by involving communities in planning and implementation, context-specific by considering the unique conditions of the Region and integrated by addressing multiple insecurities simultaneously. The activities proposed are aligned with the MPHSTF's Theory of Change, emphasizing a strategic and multidimensional approach to achieve the desired outcomes. The emphasis on technology transfer, participatory methods, and partnerships with different sectors demonstrates a commitment to integrated solutions and the involvement of diverse stakeholders for sustainable impact.

#### 4.5 Evidence of logical sequence of cause-effect relationships based on a chain of results/hierarchy of tasks.

The proposed programme is closely aligned with the concept of human security and the MPHSTF Theory of Change, with a specific focus on addressing environmental, food and health insecurities in the Aral Sea Region. This alignment is evident through the Programme's core objectives, outcomes, and targeted outputs, ensuring a holistic approach to improving human well-being. The programme aims to reduce stress

on local communities and enhance overall environmental and health security by enhancing local management practices, creating employment and income opportunities through pilot technologies, and improving living conditions for vulnerable groups through monitoring and addressing pollution.

The Programme acknowledges the COVID-19 context and adopts a sensitive approach to ensure that interventions consider the pandemic's residual implications on human security. This includes adapting methodologies for planning, delivering, and evaluating, considering the unique challenges posed by the ongoing health crisis.

The joint implementation by UNDP and FAO ensures a comprehensive and synergistic approach, combining the specialized expertise of both agencies to address environmental, food and health insecurities. The human security approach guides the Programme's planning, delivery, and evaluation, emphasizing a human-centric perspective to prioritize the well-being of individuals and communities.

The proposed Programme is not just a response to specific environmental and health challenges, but a thoughtful and comprehensive endeavor aligned with the MPHSTF Theory of Change, contributing significantly to the Programmatic Framework and Results Matrix while ensuring adaptability in the context of the lingering effects of the COVID-19 pandemic

The Theory of Change built on the MPHTSF Theory of Change, presented in Annex 2, summarizes the goal, main outputs, and activities for the three components of the project. As can be seen, the Theory of Change presents a logical sequence of outcomes, outputs, and activities that are linked in such a way as to leverage the intended benefits from the project as widely as possible, given the relatively small amount of funding and timeframe for the project.

The various Programme activities described in this proposal suggest the nature of the integrated and multi-sectoral approach for the project by linking improvements to air, land, and water management, including the regulatory framework, but also by demonstrating the spin-off effects within and across sectors.

The activities under Output 1.2, 2.2, and 3.1 of the Programme aim to empower local communities in the Aral Sea Region to effectively address escalating environmental challenges by providing new and enhanced services. Activity 1.2.1 involves developing Ecosystem Restoration Guidelines for the region, integrating UN Decade principles, FAOSEC Solutions, and native tree species conservation. This initiative will enable a comprehensive assessment of ecosystem services, ultimately enhancing local community management practices.

Activity 2.2.1, which organizes a Tugai Forest Restoration Showcase, facilitates knowledge sharing and practical training on restoration techniques. Through workshops, planting techniques, and field trip reviews, communities gain insights into sustainable forest management, contributing to both livelihoods and environmental resilience.

In parallel, Output 3.1 focuses on enhancing Comprehensive Environmental Quality Management and Regulatory Practices. Activity 3.1.1 involves assessing water management in dust storm areas through the installation of a water quantity and quality monitoring network. Additionally, Nature-Based Pollution Solutions Training is developed to equip communities with the necessary tools to address pollution challenges effectively.

Moreover, Activity 3.1.2 includes a state-of-the-art water quality model (e.g., WaterWorld) for Karakalpakstan, providing training on its use. This empowers local stakeholders to monitor and manage water quality effectively, contributing to improved regulatory practices in the Aral Sea Region.

#### 4.6 Alignment with human security concepts, MPHSTF theory of change, and results matrix

As noted in the MPHSTF Terms of Reference, the project is aligned with the basic human security principles of being: (i) people-centered, (ii) comprehensive, (iii) context-specific, and (iv) prevention-oriented.

Regarding the Fund's theory-of change, the project focuses on five of the six inter-related problem areas: (i) environmental insecurity, (ii) economic insecurity, (iii) food insecurity, (iv) health insecurity, and (v) social insecurity. And, by implication, the project is meant to address the sixth problem-area: [improving the] effectiveness of donor assistance.

Regarding the Fund's results matrix, the project is -- as suggested above - targeted at Outcome 1: "Stress on local communities due to the rapidly deteriorating environmental conditions is reduced."

Figure-1. Theory of Change

<b>Problem Statement</b>		
<p>The environmental crisis in the Ara Sea Region and the accompanying threats to human security have long been recognized as a major development challenge to the peoples of Karakalpakstan, in particular, and, more broadly, Uzbekistan. While significant efforts have been made by the Governments of Karakalpakstan and Uzbekistan to address the challenge, with support from the international community, additional efforts are critically needed to further target and leverage available resources in the most cost-effective manner that can produce greater benefits across multiple sectors. In this regard, there is still considerable room for improving the assessment and management of air, land, and water resources of the Region, in order to improve delivery of existing projects and activities and thereby enhance the well-being and human security of the Region's population.</p>		
<b>Goal</b>		
<p><b>Provision of new and enhanced services allows local partners and communities to be more fully capable of addressing the deteriorating environmental situation in the Aral Sea Region. Programme activities have the potential of reaching 207,000 beneficiaries and 1.99 million indirect beneficiaries, in particular women in at-risk communities.</b></p>		
<b>Project Component 1:</b>	<b>Project Component 2:</b>	<b>Project Component 3:</b>
Assessment of ecosystem services in the Aral Sea Region to enhance local management practices through the empowerment and skills building of local communities	Adoption of new approaches in water purification, afforestation, and soil stabilization in the Region	Establishment of integrated air, water, and soil quality monitoring systems to facilitate better regulatory practices in the Region
<b>Indicators</b>		
<ul style="list-style-type: none"> <li>Lack of adequate and timely data about the state of the Region's ecosystems limits the ability of policymakers and local authorities to deploy available resources more effectively to improve the utilization of ecosystem services for the benefit of local communities.</li> <li>Helping local communities to better understand how to manage and protect ecosystems is critical in this regard.</li> <li>Improved understanding of ecosystem services will have wide-ranging environmental, economic, and social benefits for both direct and indirect beneficiaries in target communities.</li> </ul>	<ul style="list-style-type: none"> <li>The severity of the environmental crisis facing the Region demonstrates the importance of adopting new and innovative approaches to water purification, afforestation, and soil stabilization.</li> <li>To date, efforts have been laudable but not sufficient, given the enormity of the problem. Current efforts have unfortunately fallen short.</li> <li>New approaches adopted result in significant uptake in number of nurseries established, water purification systems created, and soil stabilization activities expanded.</li> </ul>	<ul style="list-style-type: none"> <li>A well-functioning monitoring system of air, water and soil resources is a vital component to assess the current state of these resources and how they vary over time and location.</li> <li>Without such information, effective policy and programme responses will fall short.</li> <li>A well-functioning monitoring system is also important to promote the establishment of a regulatory system that articulates effective incentives and disincentives for sustainable use of these resources.</li> <li>Integrated monitoring systems improve the ability of households to apply evidence-based approaches in agricultural and non-agricultural activities across and within communities.</li> </ul>
<b>Assumptions</b>		
<ul style="list-style-type: none"> <li>Assessment will require obtaining a representative sample of ecosystem services used in different local communities in the Programme's target areas.</li> <li>Representative local communities will be forthcoming in how they are currently using ecosystem services.</li> </ul>	<ul style="list-style-type: none"> <li>The duration of the Programme will allow sufficient time to identify, test and adopt new approaches and technologies.</li> <li>Implementing partners will have the requisite skills to assess the new approaches.</li> <li>Sufficient time is available to field-test the uptake of the new approaches at the community level.</li> </ul>	<ul style="list-style-type: none"> <li>Upgrading of current monitoring systems will require keen understanding of the pace at which institutional and technological change can be implemented.</li> <li>Buy-in of relevant local stakeholders can be achieved in implementing any new changes.</li> <li>New monitoring system must combine ease of use with comprehensiveness and usability of data collected.</li> <li>Any new monitoring system must dovetail with the current and any new regulatory mechanisms.</li> </ul>
<b>Enablers</b>		

<ul style="list-style-type: none"> <li>Local implementing institutions are fully supportive of the assessment approach and activities. Staff are available to support assessment exercise.</li> <li>Planning and budgeting for assessment are proven to have been realistic.</li> <li>Targeted local communities are fully supportive and appreciative of assessment exercise and understand the potential benefits.</li> </ul>	<ul style="list-style-type: none"> <li>Support of key institutions and their staff is critical in identifying and testing new approaches and ensuring their adaptability to current systems.</li> <li>Willingness to overcome bureaucratic inertia and experiment with new systems is of paramount importance, based on field testing at the local level.</li> </ul>	<ul style="list-style-type: none"> <li>Building new monitoring system will require system to include incentives for implementing staff and partners to apply the new system.</li> <li>Adequate time is given to transition to any new monitoring system, bearing in mind the differences in each sector's requirements.</li> </ul>
<b>Implementing Partners</b>		
UNDP, FAO	UNDP, FAO	UNDP, FAO
<b>Outcomes</b>		
Assessment of different ecosystem services is successfully completed, providing a robust database of how ecosystem services are being utilized to benefit the local communities and identifying areas for improvement for their sustainable management with the engagement of the local communities.	New approaches to water purification, afforestation, and soil stabilization are successfully identified and piloted with the engagement of the local communities, including the sustainable financing that can lead to rapid uptake and replication throughout the Region.	An integrated monitoring system for air, soil, and water resources is developed that can be fully implemented over time across the Region to ensure the environmental, food and health securities of the local population.
<b>Outputs</b>		
<ul style="list-style-type: none"> <li>Assessment methodology is first developed.</li> <li>Personnel trained in conducting assessment.</li> <li>Data collection and reporting protocols established.</li> <li>Results of assessment shared with stakeholders.</li> <li>Local management practices and knowledge of ecosystem services are improved</li> </ul>	<ul style="list-style-type: none"> <li>Different approaches are tested and evaluated for their proven efficacy.</li> <li>Approaches are demonstrated to be user friendly.</li> <li>Demand generated for using new approaches beyond initial target areas.</li> <li>New technologies in water purification, agroforestry, afforestation, and soil stabilization are piloted</li> <li>Capacity to restore Tugai Forest enhanced</li> </ul>	<ul style="list-style-type: none"> <li>Monitoring system is developed and fully implemented.</li> <li>Data are used for policy and programme design and evaluation.</li> <li>Institutional capacity is developed for ongoing support of integrated systems.</li> <li>The quality of water, air, and soil pollution is monitored and addressed through local regulatory practices.</li> <li>Knowledge on water management and regenerative agriculture improved.</li> </ul>
<b>Activities</b>		
<u>Economic assessment of ecosystem services</u> <ul style="list-style-type: none"> <li>Conduct an economic assessment of ecosystem services in the Aral Sea Region (regional, target districts).</li> <li>Revise existing guidelines/manuals for loss and damage to ecosystem services in line with national legislature.</li> <li>Enhance the capacity of the stakeholders to identify economic loss and damage to ecosystem services.</li> <li>Conduct a validation workshop/roundtable and training with stakeholders on the findings of the assessment (regional, target districts).</li> <li>Based on the findings of the economic valuation, develop PR, and awareness-raising materials (short videos, promo materials, etc) to prevent damage and loss of the existing ecosystems in the Aral Sea Region.</li> </ul>	<u>Supporting sustainable afforestation and land revitalizing practices</u> <ul style="list-style-type: none"> <li>Establish nurseries by adopting water-saving technologies to scale up afforestation initiatives with stakeholders (agriculture cooperatives, IICAS, Forestry Department) based on the findings (over 20 plants are identified as desert resilient) of the 4 expeditions in the dried area of the Aral Sea.</li> <li>In cooperation with IICAS establish soil and water analysis mobile laboratories to monitor sand and dust migration in the Region.</li> <li>Conduct field research on the sand and dust storms and develop a dust migration model for the Region.</li> </ul> <u>Improving integrated management and restoration of Tugai Forest ecosystems</u>	<u>Facilitating integrated air quality management systems and regulatory practices</u> <ul style="list-style-type: none"> <li>Conduct needs assessment of the air quality monitoring systems in the Region.</li> <li>Based on the assessment, air quality monitoring systems established in the target districts.</li> <li>Capacity building undertaken for the national partners in monitoring air quality systems in the districts.</li> <li>Air quality monitoring systems integrated into the national air quality monitoring systems.</li> <li>Based on the analysis of the air monitoring systems, facilitate the development of a national standard on air pollution as per SDG 11 in the Aral Sea Region.</li> <li>Awareness raising campaign undertaken on air quality monitoring system and its impact on the health of people.</li> </ul>



<ul style="list-style-type: none"> <li>• Develop Guidelines on Ecosystem Restoration specifically for the Aral Sea Region in line with UN Decade for Ecosystem Restoration</li> <li>•</li> </ul>	<ul style="list-style-type: none"> <li>• Conduct the assessment of water shortage for Tugai forest and adjust the sustainable management plan from FRIENDS project to tugai forests, including the restoration.</li> <li>• Organize an introductory workshop to present the results of the Tugai Forest restoration in the southern shoreline of Balkhash lake and the Ili river delta in Kazakhstan.</li> <li>• Conduct a field workshop on techniques and approaches to Tugai species planting, including Waterboxx® plant cocoon equipment for reforestation in arid areas with the following up a field trip to revise the results of Tugai seedlings planting and to sum up the outcomes.</li> <li>• Pilot water purification technologies, such as biofiltration or phytoremediation, in areas adjacent to Tugai forests to improve water quality.</li> <li>• Pilot agroforestry practices within the Tugai Forest landscape, integrating Robinia pseudoacacia with agricultural and cash crops.</li> <li>• Pilot Nature-based Solutions for soil stabilization</li> <li>• Organize a field trip to revise the results of Tugai seedlings planting and to sum up the outcomes.</li> <li>• Develop a local action plan focused on diversifying livelihoods through beekeeping activities, specifically using Robinia pseudoacacia + Rosa canina+Alhagi pseudoalhagi+Eleagnus sp. as a resource.</li> <li>•</li> </ul>	<p><u>Enhancing comprehensive environmental quality management and regulatory practices</u></p> <ul style="list-style-type: none"> <li>• Run state of art water quality model (e.g. Water World) for Karakalpakstan and training on it. This would provide: an overall spatial water quality assessment and; an assessment of the contribution cropland and pastures to water quality.</li> <li>• Install a water quantity and quality monitoring network which would be left in place post-project and would train local institutions to take over and maintain the network long term. The network would include monitoring of: weather; soil moisture; river and water body levels; and water quality.</li> </ul>
<b>Inputs</b>		
<ul style="list-style-type: none"> <li>• Workshops: Number of participants at the workshop, reports produced</li> <li>• Guidelines: Number of guidelines developed for ecosystem restoration</li> <li>• Field-trips: Number of participants</li> </ul>	<ul style="list-style-type: none"> <li>• Assessment reports: Number of the reports/plans</li> <li>• Introductory workshop: Number of participants attending the workshop</li> <li>• Techniques and approaches: Number of Waterboxx installed; Number of Ha planted area covered by tugai seedlings and the survival rate</li> <li>• Field workshop: Number of participants attending the workshop</li> <li>• Water purification technologies and NbS: Number of demonstration plots; # ha of planted licorice (<i>Glycyrrhiza glabra</i>); Number of demonstration plots with the agroforestry practices; # ha of planted Robinia pseudoacacia</li> <li>• Action plan: Number of the action plans</li> </ul>	<ul style="list-style-type: none"> <li>• Impact study: Number of comprehensive reports generated</li> <li>• Number of monitoring network stations installed</li> <li>• Assessments: Identified challenges in water resource management,</li> <li>• Number of training materials developed;</li> <li>• Number of reports on spatial water quality assessment</li> <li>• A conceptual framework: Level of integration of the One Health approach in NDC or other national strategies;</li> <li>• Number of formulated policy recommendations</li> </ul>
<b>Risks</b>		
<ul style="list-style-type: none"> <li>• Deteriorating environmental conditions jeopardize current health of ecosystems.</li> <li>• Assessment methodology is insufficiently designed to provide meaningful results.</li> </ul>	<ul style="list-style-type: none"> <li>• Further deterioration in environmental conditions complicate efforts to identify new approaches.</li> <li>• New approaches are found to be too complex for successful implementation and replication.</li> </ul>	<ul style="list-style-type: none"> <li>• Governmental or institutional changes may delay implementation of project activities.</li> <li>• Integrated monitoring system proves to be too cumbersome and difficult to achieve intended results.</li> </ul>

<ul style="list-style-type: none"> <li>• Lack of staff to effectively carry out assessment.</li> <li>• Resistance is encountered at local community level in undertaking assessment of ecosystem services.</li> <li>• Short duration of project impedes ability to complete all identified activities.</li> <li>• Budget is found to be insufficient to complete all activities.</li> </ul>	<ul style="list-style-type: none"> <li>• Bureaucratic in-fighting arises as new approaches are designed, and resources committed.</li> <li>• Resistance is encountered by local staff in wanting to implement new approaches.</li> <li>• Potential community reluctance or lack of willingness to adopt or engage with the Waterboxx, hindering its successful implementation or effectiveness</li> <li>• Short duration of project impedes ability to complete all identified activities.</li> <li>• Budget is found to be insufficient to complete all activities.</li> </ul>	<ul style="list-style-type: none"> <li>• Resistance is encountered by local staff in wanting to implement integrated monitoring system.</li> <li>• Difficulties are encountered in replicating Integrated monitoring system across the entire Region.</li> <li>• Short duration of project impedes ability to complete all identified activities.</li> <li>• Budget is found to be insufficient to complete all activities.</li> </ul>
<b>Risk Mitigation Scenarios</b>		
<ul style="list-style-type: none"> <li>• Effective monitoring procedures are put in place to rapidly assess pace of Programme activities per agreed schedule.</li> <li>• Concerted efforts are made to involve local communities in assessment exercises.</li> </ul>	<ul style="list-style-type: none"> <li>• Effective monitoring procedures are put in place to rapidly assess pace of Programme project activities per agreed schedule.</li> <li>• Management structure is effectively designed to encourage cross-institutional collaboration and teamwork.</li> </ul>	<ul style="list-style-type: none"> <li>• Effective monitoring procedures are put in place to rapidly assess pace of project activities per agreed schedule.</li> <li>• Management structure is effectively designed to encourage cross-institutional collaboration and teamwork.</li> </ul>

#### 4.7 Innovative and integrated approaches and solutions in dealing with the problem (s).

The proposed Programme is meant to be innovative by piloting new technologies, to be people-centered by involving communities in planning and implementation, and to be context-specific by considering the unique conditions of the Region and integrated by addressing multiple insecurities simultaneously. Namely, participatory resource mapping (PRM) approach will be applied using local knowledge and experience to analyze geo-referenced information on tugai and pasture ecosystem services. Local communities will be involved from the beginning in method selection, application, evaluation, and verification.

This “inclusive participatory ES mapping” will be conducted in selected pilot sites including organization of science-based capacity building to communities. Furthermore, the Programme will support initiatives on (i) soil stabilization such as chlorella, biohumus, zoohumus, (ii) water saving technologies (drip irrigation, buried diffuser technologies and etc.) and (iii) train and engage communities in chistanche cultivation, desert pasture lands for livestock, as well as establish nurseries specialized in growing drought-resistant plants in pilot communities. Moreover, for comprehensive managing and improving air quality an Integrated Air Quality Management Systems (IAQMS) will be established in Karakalpakstan, which will allow responsible authorities (UzHydromet of Ministry of Ecology), the Ministry of Health, and the Ministry of Agriculture be exchange data and develop preventive measures so that residents are well informed on the adverse effects. Additionally, community eco-volunteers will be engaged in promoting air quality monitoring systems along with project partners.

#### 4.8 Project sustainability

Ensuring the sustainability of Activity 3.2.2 beyond the project implementation phase is integral to its long-term impact on water management in dust storm areas. Here is a comprehensive plan outlining the sustainability aspects and monitoring mechanisms:

##### Sustainability Plan:

##### 1) Design and Component Durability:

The monitoring network stations are designed for long-term use, with components that can be easily removed and replaced at a low cost.

Components vary in cost from USD 10 to USD 25, making them affordable and ensuring cost-effectiveness in the long run. The stations have demonstrated durability, with some recording in the field continuously for up to 4 years without a single failed component.

##### 2) Air Quality Sensor Replacement:

Air quality sensor components, which have moving parts (fans), are planned to be replaced every 2 years at a cost of USD 15.

This regular replacement schedule ensures the accuracy and reliability of air quality data over the long term. The ownership to the system will be transferred to the Uzhydromet Agency of the Ministry of Ecology to ensure the sustainable use and functions of the system.

##### 3) Maintenance Staff Costs:

For internet-connected (Live) stations, maintenance staff costs are associated with visits to the station by local staff when problems are identified in the data feed or annually (whichever is less frequent).

For non-internet-connected (Local) stations, maintenance staff costs involve monthly visits by local staff to each station.

The local institution (Uzhydroment Agency of the Ministry of Ecology) is expected to handle routine maintenance, and the costs are incurred only during the project.

#### 4.9 Proposed potential to strengthen national capacities, institutions and supporting local actors

As part of the sustainability plan, capacity-building initiatives will be undertaken to train local staff or institutions in operating and maintaining the monitoring network.

Training will cover basic troubleshooting, component replacement, and data interpretation, empowering local partners to manage the system independently.

Regular checks will be conducted on the monitoring network to identify any issues promptly. Local staff will be trained to perform routine checks, ensuring the continuous functionality of the stations.

Data quality checks will be implemented to identify anomalies or irregularities in the collected data. Automated alerts can be set up to notify local staff or project coordinators of any potential issues with the data feed.

Periodic audits of the maintenance process will be conducted to assess the effectiveness of local staff in handling routine maintenance.

Audits may include random site visits, data accuracy assessments, and component inspections.

Engaging local communities in the monitoring process can contribute to the sustainability of the initiative. Local communities can act as watchdogs, reporting any issues with the monitoring stations.

Given the objective of improving the management of ecosystem services, introduction of new technologies for water, afforestation and soil, and improved monitoring of air, land and water resources, the outcomes and lessons learned from the programme can have wider distributional benefits across other areas of the Aral Sea Region, and potentially other parts of Karakalpakstan and Uzbekistan.

## 5 Results Framework

### 5.1 Goal and Objectives

The Programme goal is linked with the overall focus of the MPHSTF aimed at transforming the Aral Sea Region and improving the human security of the affected populations in the face of the region's extreme environmental degradation. The Programme further considers Resolution 41 of the Cabinet of Ministers which lays out the priority roadmap for addressing the ongoing crisis of the Aral Sea region. In particular, the Programme components are meant to address the ongoing stress on local communities due to the deteriorating environmental situation, using a human security lens, as articulated in the Fourth Call for Proposals under the Trust Fund.

In this context, the proposed Programme aims to empower local communities to effectively tackle the escalating environmental challenges in the Aral Sea Region through the provision of new and enhanced services.

#### Objectives

1. Conduct a comprehensive assessment of ecosystem services in the Aral Sea Region, with the goal of improving local community management practices.

2. Implement innovative approaches in water purification, afforestation, and soil stabilization within the region to address environmental degradation.
3. Establish integrated air, water, and soil quality monitoring systems to facilitate improved regulatory practices in the Aral Sea Region.

As noted in this proposal's Theory of Change, the Programme has the goal of providing new and enhanced services that allow local partners and communities to be more fully capable of addressing the deteriorating environmental situation in the Aral Sea Region. Programme activities have the potential of reaching 355 direct beneficiaries and 200,700 indirect beneficiaries, in particular women in at-risk communities. This goal is specifically related to MPHSTF Outcome 1: The stress on local communities due to the deteriorating environmental situation is reduced.

In this regard, the attached logframe lays out a holistic approach to environmental security by addressing challenges related to ecosystem degradation, biodiversity loss, climate-induced changes, water scarcity, deforestation, and air pollution in the Aral Sea Region. Through awareness-building, capacity development, practical interventions (equipment installations, demonstration plots), and regulatory frameworks, the project aims to contribute significantly to the region's environmental well-being.

### **Objective 1. Assessment of ecosystem services in the Aral Sea Region to enhance local management practices (UNDP and FAO)**

#### **Output 1.1. Participatory ecosystem restoration to enhance community-based tugai and desert pasture ecosystems management (UNDP)**

Activity 1.1.1 Plan and conduct ecosystem services mapping in selected communities in three pilot districts of Karakalpakstan.

Activity 1.1.2 Engage community eco-volunteers into the assessment process through the established platform and integrate them into the existing health-volunteers platform to link environment and health issues of the region.

Activity 1.1.3 Enhance the capacity of local stakeholders on the value of ecosystem services and innovative approaches to ecosystem restoration based on local knowledge and international best practices.

Activity 1.1.4. Design education, communication, and outreach materials for various target groups at local, regional and national levels.

#### **Output 1.2 Enhanced Ecosystem Services (FAO)**

The goal of Activity 1.2.1 Develop ecosystem restoration guidelines for Aral Sea Region: Integrating UN Decade, FAO solutions, and native tree species conservation is to provide comprehensive and region-specific guidance for restoring ecosystems in the Aral Sea Region. This initiative, conducted jointly by FAO and the Chamber of Forest Engineers in Turkiye (OMO), aims to address the current environmental degradation in Karakalpakstan. The collaboration between FAO and the Chamber of Forest Engineers in Turkiye (OMO) leverages expertise in ecosystem restoration and nature-based solutions (NbSs) developed for Turkiye and Central Asia.

The guidelines on NbS implementation, jointly developed by OMO and FAO, serve as a foundation for the proposed activity, providing valuable insights and methodologies that can be adapted to address environmental degradation in Karakalpakstan. By building upon existing frameworks and expertise, this activity will effectively contribute to the overarching goals of environmental sustainability and community

resilience in the Aral Sea Region. The ecosystem restoration guidelines will facilitate a comprehensive assessment of ecosystem services in the Aral Sea Region.

This assessment will inform improved management practices by local communities, thereby reducing environmental stress and enhancing ecological resilience. The integration of UN Decade principles, FAO solutions, and native tree species conservation into the ecosystem restoration guidelines represents a pioneering effort in the region. By institutionalizing these innovative approaches, the Programme will promote the adoption of new technologies and practices for monitoring and improving water, air, and land resource utilization.

## **Objective 2. Adopting new approaches in water purification, afforestation, and soil stabilization in the Region (UNDP, FAO).**

### **Output 2.1. Supporting sustainable afforestation and land revitalizing practices in the Aral Sea Region (UNDP)**

Activity 2.1.1 Establishing nurseries to scale up afforestation initiatives with stakeholders (rural cooperatives, IICAS, Forestry Department) based on the findings (over 20 plants are identified as desert resilient) of the four expeditions in the dried area of the Aral Sea. Within this activity, work with local communities will be conducted to increase the number of nurseries and desert pasture lands for livestock by applying innovative water saving technologies and advanced pasture management techniques. Initiate startups on chlorella, biohumus, zoohumus technologies etc. Train and engage communities in chistanche cultivation.

Activity 2.1.2: In cooperation with IICAS establishing mobile laboratories to analyze soil composition and to monitor sand and dust migration in the Region. IICAS is one of the instrumental partners on the ground which is promoting innovations in the Region. Included are plans to cooperate with IICAS to enhance the capacity of soil analysis and dust migration processes in order to provide valuable information to local communities, farmers and smallholders.

Activity 2.1.3: Conduct field research in cooperation with local scientific institutions on sand and dust storms and assess loss and damage to ecosystem services.

### **Output 2.2. Enhanced Integrated Management and Restoration of Tugai Forest Ecosystems for Sustainable Livelihoods and Environmental Resilience (FAO)**

Activity 2.2.1: Organize a Tugai Forest Restoration Showcase: Workshop, Planting Techniques, and Field Trip Review is designed to share successful experiences and insights gained from tugai forest restoration efforts in Kazakhstan. The goal is to contribute to the environmental restoration of Karakalpakstan by leveraging the expertise of WWF.

The activity involves organizing a workshop facilitated by WWF experts, who possess over 20 years of experience in successfully restoring tugai forests in Kazakhstan, particularly under desertification conditions. These experts have developed recommendations for forest restoration using an ecosystem approach, making them valuable contributors to the workshop. The ongoing WWF project in Kazakhstan includes a comprehensive survey of fire-affected areas, training volunteers for firefighting measures, and planting seedlings with the aim of restoring four hectares of forest in the Ile-Balkhash reserve. This workshop aims to present the results of tugai forest restoration, focusing on the southern shoreline of Balkhash Lake and the Ili River delta in Kazakhstan. Attendees will benefit from a comprehensive overview

of the restoration process, including the challenges faced, methodologies employed, and successful outcomes achieved in similar ecological conditions.

This activity aims to address the unique challenges of reforesting arid areas with limited fresh water, high soil salinity, and changing climate conditions. The workshop, planned under the guidance of experts, intends to introduce innovative techniques such as the Waterboxx® plant cocoon for more effective reforestation. A number of Waterboxx will be installed during the field workshop and will be disseminated to district municipalities afterwards.

In regions facing water scarcity and extreme climatic conditions, standard reforestation methods may not yield optimal results. To overcome these challenges, the workshop will showcase the use of Waterboxx® plant cocoon equipment, specifically designed for arid areas. It is a sustainable solution that minimizes water usage by filling the container once a year, providing seedlings with a controlled amount of water through drip irrigation until their root systems reach groundwater.

The workshop will demonstrate the practical application of Waterboxx® plant cocoon equipment, emphasizing its role in ensuring the survival and growth of seedlings during their critical initial stage. Additionally, the workshop will highlight the environmental sustainability of Waterboxx® plant cocoon equipment, as each container can be reused up to 10 times.

**Objective 3. Promoting integrated air, water, and soil quality monitoring systems to facilitate regulatory practices in the Region (UNDP, FAO).**

**Output 3.1 Facilitating Integrated Air Quality Management Systems and Regulatory Practices (UNDP)**

Activity 3.1.1: Conduct needs assessment of the air quality monitoring systems in the region covering 8 district centers. Identify compatible air quality monitoring systems with existing national monitoring systems in cooperation with UzHydromet.

Activity 3.1.2: Based on the needs assessment, establish air quality monitoring systems in at least 8 locations. Undertake capacity building of national partners in monitoring air quality systems in the districts. Support at least three startup initiatives on air, soil, and water monitoring systems.

Activity 3.1.3: Integrated the air quality monitoring systems in the national air quality monitoring systems including with health care facilities. Based on the analysis of the air monitoring systems facilitated the development of a national standard on air pollution as per SDG 11 in the Aral Sea Region.

Activity 3.1.4: Awareness raising campaign conducted by involving health volunteers of the Region on the air quality monitoring system and its impact on the health of the people.

Activity 3.1.5: Engage community eco volunteers and health volunteers in promoting air quality monitoring systems.

**Output 3.2. Enhanced Comprehensive Environmental Quality Management and Regulatory Practices (FAO)**

The goal of the Activity 3.2.1: Assess water management in dust storm areas by installing a water quantity and quality monitoring network is to conduct a comprehensive assessment of water resource management in areas affected by dust storms in Karakalpakstan. The primary objective is to identify key challenges and propose sustainable solutions to address water-related issues contributing to environmental degradation.

The activity will involve in-depth field monitoring to comprehend the dynamics of soil erosion, airborne particulates, and dust production. This will include experiments comparing conventional and regenerative agriculture practices using FreeStation-based sensors.

Further, a monitoring network will be established at locations (5 stations in 2 districts in Karakalpakstan) determined by local partners. This network will incorporate various parameters, including weather conditions, soil moisture, river and water body levels, and atmospheric dust. The low-cost, open-source FreeStation approach to monitoring will be employed.

Simultaneously, the activity will develop training materials aimed at enhancing understanding of nature-based solutions to pollution management. The emphasis will be on reducing dependence on fertilizers and pesticides, contributing to sustainable agricultural practices.

The primary objective of Activity 3.2.2 Run State-of-the-Art Water Quality Model for Karakalpakstan and provide training is to conduct a comprehensive assessment of water quality in the region using advanced modeling tools, with a focus on the WaterWorld model. This initiative aims to enhance understanding, prediction, and management of water quality parameters, thereby contributing to the overall environmental health of Karakalpakstan. It will generate an overall spatial assessment of water quality in Karakalpakstan. Through this modeling approach, various factors affecting water quality, including pollutants and their sources, can be identified, and analyzed. The spatial representation of water quality parameters will offer insights into the distribution of contaminants across different geographical areas.

Furthermore, the assessment will specifically evaluate the contribution of cropland and pastures to water quality. By understanding the impact of agricultural activities on water quality, the modeling results will provide valuable information for designing targeted interventions and sustainable land management practices. This aspect is crucial for addressing environmental challenges related to water pollution in the region.

Furthermore, community awareness sessions will be organized to disseminate knowledge about the One Health approach and the implications of sand and dust storms. These sessions aim to engage and educate local communities on the interconnectedness of environmental, human, and animal health. By fostering awareness, the activity contributes to building resilience at the community level and encouraging sustainable practices that mitigate the adverse effects of sand and dust storms.



Table 1: Results Framework

Title of the Programme:							Building knowledge and skills of local partners and communities to address environmental insecurities through innovative air, land, and water management solutions in the Aral Sea Region		
UNSDCF Priority Area							STRATEGIC PRIORITY B: Inclusive human capital development leading to health, well-being and resilient prosperity STRATEGIC PRIORITY C: Sustainable, climate responsible and resilient development UNSDCF Outcome 5: By 2025, the most at risk regions and communities of Uzbekistan are more resilient to climate change and disasters, and benefit from increasingly sustainable and gender-sensitive efficient management of natural resources and infrastructure, robust climate action, inclusive environmental governance and protection.		
Relevant National SDG(s)							SDG 1. No Poverty; SDG2. Zero Hunger; SDG3. Good Health and Well being; SDG5. Gender Equality SDG6. Clean Water and Sanitation; SDG8. Decent Work and Economic Growth; SDG9. Industry, Innovation and Infrastructure; SDG11. Sustainable cities and communities SDG13. Climate Action SDG15. Life and Land		
Expected results (Outcomes & Outputs)	Indicator description	Baseline		Target 2024 (Cumulative)			Indicators	Means of verification/ Frequency	Responsibilities (PUNOs and national partners)
		Q-ty	Year	Q2	Q3	Q4			
Programme Outcomes	<i>Programme Outputs 1,2,3 contribute to the MPHSTF Outcomes - The stress on local communities due to the deteriorating environmental situation reduced (UNDP, FAO)</i>								
	# of tugai forests with restored ecosystems	N/A	2023	0	0	3	Monitoring visit reports	UNDP, FAO	
	% of air quality forecasting efficiency is increased	N/A	2023	0	0	10%	Monitoring visit reports	UNDP, FAO	
Programme Outputs	Contribution to the MPHSTF outcomes. <b><i>The deteriorating environmental situation is reduced by improved ecosystem service provision through capacity building of stakeholders, development of 2 guidelines, 7 land, and 1 water management approaches and establishing 8 air quality monitoring systems benefitting directly 655 people and indirectly 200,700</i></b>								
Output 1.1 Inclusive participatory ecosystem services mapping	# of people (women/men/youth) engaged to ecosystem services mapping exercise	0	2023	0		45	Reports, validation workshops and etc.	UNDP, Ministry of Ecology, Environmental Protection and Climate Change, local municipalities, local communities	

	# area of degraded tugai/pasture/other ecosystems (hectare) covered by participatory mapping	0	2023	0		60ha	Maps, GIS	UNDP, Ministry of Ecology, Environmental Protection and Climate Change, local municipalities, local communities
	# of people (women/men/youth) benefitted from knowledge sharing and capacity building events disaggregated by gender and types of occupation	0	2023	0		30	Reports, validation workshops and etc.	UNDP, Ministry of Ecology, Environmental Protection and Climate Change, local municipalities, local communities
	# of design of education, communication and outreach materials for various target groups at local, regional and national levels.	0	2023	0		1 promo material (social video, leaflets and etc) 100 people	Reports, TV and social network materials etc.	UNDP, Ministry of Ecology, Environmental Protection and Climate Change, local municipalities, local communities
Output 1.2. Enhanced Ecosystem Services (FAO)	#of guidelines developed for ecosystem restoration, NBS, native trees conservation	0	2023	0		2 reports	Reports, Records of meetings, workshops, or consultations	FAO, Ministry of Ecology, Environmental Protection and Climate Change, local municipalities, local communities
	# of people who gained access to improved ecosystem services (women/men/youth) with the project support	n/a	2023	0		150	Expert estimates	Ministry of Ecology, Environmental Protection and Climate Change
Output 2.1.Supporting sustainable afforestation and land revitalizing practices in the Aral Sea Region	# sand and salt resilient plants nurseries are established in target districts	3	2023	0		6	Reports, validation workshops, etc.	UNDP, Ministry of Ecology, Environmental Protection and Climate Change, local municipalities, local communities
	# of land and soil analysis mobile labs are established	N/A	2023	0		1	Reports, Meetings, Transfer of acts , etc	UNDP, Ministry of Ecology, Environmental Protection and Climate Change, local municipalities, local communities
	# of local farmers and smallholders (women/men/youth) with improved knowledge and skills on sustainable afforestation and pasture management practices	N/A	2023	0		60	Research Reports	UNDP, Ministry of Ecology, Environmental Protection and Climate Change, local municipalities, local communities
	# of seasonal job places (including women, youth and others) created in planting and maintaining nurseries	N/A	2023	0		30	Research Reports	UNDP, Ministry of Ecology, Environmental Protection and Climate Change, local municipalities, local communities
Output 2.2 Enhanced integrated management and restoration of Tugai forest ecosystems for sustainable	#of participants attending the workshop	0	2023	0		40 people	Reports, Records of meetings, workshops, or consultations	FAO, Ministry of Ecology, Environmental Protection and Climate Change, local municipalities, local communities

livelihoods and environmental resilience	#of ha of restored tugai	N/A	2023	0		4 ha	Reports, Records of meetings, workshops, or consultations	FAO, Ministry of Ecology, Environmental Protection and Climate Change, local municipalities, local communities
	#of Waterboxx installed	0	2023	0		200 pieces	Reports, Records of meetings, workshops, or consultations	FAO, Ministry of Ecology, Environmental Protection and Climate Change, local municipalities, local communities
Output 3,1 Facilitating integrated air quality management systems and regulatory practices	#of air quality monitoring systems established integrated to the network of UzHydromet	1	2023	0		8	Reports, Meetings, Act of transfers	UNDP, Ministry of Ecology, Environmental Protection and Climate Change, local municipalities, local communities
	# of developed national standards for the air quality in the Aral Sea Region in line with SDG11	0	2023	0		1	Reports, Meetings, Manuals and guidelines developed	UNDP, Ministry of Ecology, Environmental Protection and Climate Change, local municipalities, local communities
	# of population in 8 spots are benefited from the air monitoring quality systems	NA	2023	0		691 900	Reports, Meetings, Manuals and guidelines developed	UNDP, Ministry of Ecology, Environmental Protection and Climate Change, local municipalities, local communities
Output 3.2 Enhanced comprehensive environmental quality management and regulatory practices	#of comprehensive reports generated	0	2023	0		2	Reports, Records of meetings, workshops, or consultations	FAO, Ministry of Ecology, Environmental Protection and Climate Change, local municipalities, local communities
	#of training materials developed	0	2023	0		1	Reports, Records of meetings, workshops, or consultations	FAO, Ministry of Ecology, Environmental Protection and Climate Change, local municipalities, local communities
	#of monitoring network stations installed 787707791	0	2023	0		5 stations	Manuals	FAO, Ministry of Ecology, Environmental Protection and Climate Change, local municipalities, local communities

## Table 2. Risk Ranking Matrix

As articulated in the attached Theory of Change, there are obviously potential risks to achieving the intended results. These include:

- Governmental or institutional changes may delay implementation of project activities.
- Deteriorating environmental conditions jeopardize the ability to complete identified activities.
- The short duration of the project impedes the ability to complete all identified activities.
- Budget is found to be insufficient to complete all activities.
- Bureaucratic in-fighting arises as new approaches are designed, and resources committed.
- Resistance is encountered by local staff in wanting to implement new approaches.
- Resistance is encountered at local community level in undertaking new systems and processes services.

Among the means to mitigate risks are the following:

- Effective monitoring procedures are put in place to rapidly assess the pace of project activities per agreed schedule.
- Concerted efforts are made to involve local communities in activities and exercises of different project components.
- Management structure is effectively designed to encourage cross-institutional collaboration and teamwork.

No	Risk	Character	Impact	Probability	Mitigation Strategy
1	Governmental or institutional changes may delay implementation of project activities.	Political, institutional	Moderate	Low	Project team will closely follow local political environment before and during project implementation.
2	Deteriorating environmental conditions jeopardize ability to complete identified activities.	Ecological	Moderate	Moderate	Many project activities can be undertaken regardless of deterioration in environmental conditions, and adjustments made accordingly.
3	Short duration of project impedes ability to complete all identified activities.	Operational	Moderate	Low	Decision can be made to adjust project activities as needed.
4	Budget is found to be insufficient to complete all activities.	Financial	Moderate	Low	Strict financial management procedures are put in place to monitor financial performance. Decision can be made to adjust budgets as needed.
5	Bureaucratic in-fighting arises as new approaches are designed, and resources committed.	Institutional	Moderate	Low	Ongoing and proactive communication and interaction with local staff to incentivise their buy-in, especially among key decision-makers.

6	Resistance is encountered by local staff in wanting to implement new approaches.	Institutional	High	Low	Ongoing and proactive communication and interaction with local staff to incentivise their buy-in.
7	Resistance is encountered at local community level in undertaking new systems and processes/services.	Institutional	High	Low	Active communication and consultation with local communities will be promoted to ensure community participation and buy-in

## 6 Management and Coordination Arrangements

### 6.1 Governance structure and decision-making process of the project.

The Programme activities will contribute to strengthening new partnerships with government and other stakeholders by demonstrating impact, providing engagement platforms, fostering capacity building and knowledge exchange, integrating with national policies, facilitating joint planning and implementation, and establishing strategic alliances. These mechanisms of cooperation will enable FAO, UNDP, government entities, academic institutions, and other partners to work together effectively towards common goals for environmental resilience and sustainable development in the Aral Sea Region.

A Programme Steering Committee will be established to effectively coordinate project activities and serve as a mechanism for review, analysis and taking necessary decisions and actions during the project implementation. The Project Steering Committee members will include local stakeholders, participating UN agencies (UNDP, FAO), relevant government departments as well as other national partners.

Programme Steering Committee decisions will be made in accordance with standards that shall ensure management for development results, best value money, fairness, integrity, and transparency. This Committee will ensure that required resources are committed and will arbitrate on any conflicts within the Programme or negotiate a solution to any problems between the projects and external bodies. The Programme Steering Committee will meet on a regular basis at least twice during the cycle of this project. Close coordination with the national government (key ministries and institutions) will ensure alignment with strategic priorities and timely feedback on the course of the project implementation.

### 6.2 List of national, local partners, NGOs, CSOs and communities. strategy outlines to ensure the stakeholders engagement, and description of their respective roles and responsibilities

The programme document development process was inclusive and consultative. The following national partners were involved into the consultation process:

- Ministry of Ecology, Environmental Protection, and Climate Change of the Republic of Uzbekistan
- Ministry of Economy and Finance of the Republic of Uzbekistan
- Uzhydromet
- Council of Minister of Republic of Karakalpakstan
- Ministry of Water Resources of Uzbekistan

- Ministry of Agriculture of Karakalpakstan
- International Innovation Centre of Aral Region under Ministry of Ecology, Environmental Protection, and Climate Change of the Republic of Uzbekistan.
- Scientific-Information Centre of the Interstate Commission for Water Coordination in Central Asia (SIC ICWC)
- Forestry Committee of Uzbekistan
- District Khokimiyats of Muynak, Kungrad and Takhtakupir

The proposed activities developed within the framework of this programme are the product of the joint consultations with the programme partners as listed above, where the relevance and alignment of listed outputs with the government programmes and priorities were confirmed. Therefore, based on the inputs and cooperation with the national partners, this proposed programme was developed in line with MPHSTF strategy.

During the implementation phase of the Programme, close interactions and coordination will be made with national and international partners active in the Region, with the goal of ensuring better coordination and increased efficiency of results by all actors working in the Aral Sea Region.

The Programme (if approved) will also develop s Stakeholder Engagement Plan, as part of the Partnership Strategy.

The key partner of the Programme is the Ministry of Ecology, Environmental Protection, and Climate Change of the Republic of Uzbekistan; and Uzhydromet will provide technical expertise, focusing on sustainable natural resource management, climate change adaptation, and the integration of environmental security measures within the framework of the project.

Another key partner is the Council of Ministers of the Republic of Karakalpakstan - it will coordinate the Programme activities at the regional level and will be the key government body to support the regular coordination with the multiple partners of the project.

The Forestry Agency of the Ministry of Ecology of Uzbekistan jointly with the International Innovation Centre for the Aral Sea region under the Ministry of Ecology, Environmental Protection, and Climate Change of the Republic of Uzbekistan will be fully engaged in the process of establishing Nurseries and other relevant activities of the project.

Other relevant ministries, Khokimiyats of the target districts of Karakalpakstan and target communities will also be involved in the implementation of the proposed activities.

The Service Providers like Chamber of Forest Engineer of Turkey (OMO), WWF, King's College will contribute under FAO leadership based on previous successful joint projects. By showcasing tangible results and success stories of the proposed activities, such as improved ecosystem services, enhanced Tugai forest management, and better environmental quality management practices, the Programme will serve as evidence of the effectiveness of collaboration, encouraging new partnerships. Through workshops, showcases, and training sessions organized as part of the project activities, government representatives, academic institutions like King's College (global level), and organizations like OMO and WWF (regional level) will have opportunities to participate and engage. These platforms facilitate dialogue, networking, and collaboration, laying the groundwork for future partnerships and joint initiatives. The Programme activities involve capacity building and knowledge exchange among diverse stakeholders, including government officials, researchers, and practitioners. This fosters mutual learning, trust-building, and a deeper understanding of each other's expertise and priorities, which are essential elements for forming effective

partnerships. As the Programme aligns its outcomes with national policies, strategies, and plans, it creates opportunities for closer collaboration with government agencies. By demonstrating how component activities support national priorities and goals, the Programme builds credibility and trust, paving the way for collaborative efforts between FAO, government entities, and other partners. Collaboration mechanisms such as joint planning committees, working groups, and task forces can be established to coordinate efforts between FAO, government partners, and other stakeholders.

The Programme can explore opportunities to formalize partnerships through memoranda of understanding (MoUs) or partnership agreements with government agencies, academic institutions, and other organizations. These agreements outline areas of collaboration, roles and responsibilities, and mechanisms for sharing resources and information, strengthening the foundation for long-term partnerships.

### 6.3 Main characteristics of primary beneficiaries (disaggregated data age, gender, socioeconomic level, geographic area, etc.)

This proposal include 355 direct beneficiaries and 200,700 indirect beneficiaries of the local communities of Muynak, Kungrad and Takhtakupir districts (cumulative number of the population: 200,700 (95,000 are women)), including farmers, in Karakalpakstan, who stand to gain from improved environmental conditions, air monitoring system enabled, equipped with sustainable pasture techniques, reduced soil degradation, and a more sustainable approach to agriculture. Additionally, this project will inform policymakers and local environmental authorities in making informed decisions regarding air monitoring, dust migration, land use practices and environmental management.

**Under Objective One**, within this component 225 people (men, women and youth) will benefit from the following specific support:

- 45 people engaged to ecosystem services mapping exercise
- 60 ha area of degraded tugai/pasture/other ecosystems (in hectares) covered by participatory mapping
- 30 people benefitted from knowledge sharing and capacity building events
- 150 people benefitted from the design of education, communication and outreach materials for various target groups at local, regional and national levels
- 2 guidelines developed for ecosystem restoration, NBS, native trees conservation
- 30 ha area of tugai/pasture/other ecosystems restored under improved management practices

**Under Objective Two**, within this component 130 rural people (men, women and youth) will benefit from the project, from the following specific support:

- 3 sand and salt resilient plants, nurseries are established in target districts
- 1 land and soil analysis mobile lab is established
- 60 local farmers and smallholders gained knowledge and skills on sustainable afforestation and pasture management practices
- 30 seasonal job places created in planting and maintaining nurseries
- 40 people receive improved knowledge and skills on sustainable management plan for tugai forest
- 4 ha of tugai area restored
- 200 pieces of Waterboxx installed

**Under Objective Three**, within this component rural people in 8 locations of Aral Sea region (men, women and youth) will benefit from the project, from the following specific support:

- At least 8 air quality monitoring systems established and integrated to the network of UzHydromet
- 1 national standard developed for the air quality in the Aral Sea Region in line with SDG11
- rural people in 8 locations benefit from the air monitoring quality systems
- 2 reports generated and 1 training materials developed on Enhanced Comprehensive Environmental Quality Management and Regulatory Practices
- 5 monitoring network stations installed

#### 6.4 Mechanism (s) to ensure local ownership of the results.

Efforts will be made during the Programme to identify and engage local partners for reading and maintaining the system of loggers.

The goal is to transition the responsibility to a local institution (Uzhydromet Agency of the Ministry of Ecology), eliminating the need for external consultants or Programme staff involvement upon the Programme's completion.

### 2.1 Mainstreaming of gender and women's empowerment

The Programme prioritizes gender mainstreaming throughout its initiatives, ensuring active involvement and benefits for women. Key considerations include:

#### 1. Inclusive Participation:

- Ensure equal participation of women, men, and disabled people in various programme activities (workshops, trainings).
- Facilitate the engagement of women and other marginal groups in essential tasks such as mapping ecosystems and participating in field trips.

#### 2. Networking and Collaboration:

- Establish networks with a specific focus on involving women, disabled people, youth other groups from diverse sectors.
- Promote women's active participation in the implementation of new technologies and pilot initiatives.

#### 3. Capacity Building and Economic Empowerment:

- Develop plans that specifically focus on diversifying livelihoods, including activities like beekeeping, with a deliberate effort to include women.
- Create training materials on nature-based solutions that address pollution management, ensuring a gender-sensitive approach.

#### 4. Health and Well-being:

- Integrate a One Health approach, recognizing the interconnectedness of environmental changes and human and animal health, with special attention to women's roles.

Formulate policy recommendations with a distinct focus on the participation of women and organize community awareness sessions to ensure their voices are heard.

### 2.2 Specific measurable indicators related to gender equality and women's empowerment.

#### 1. Representation:



- Ensure equal participation of men and women and disadvantaged groups in workshops, field trips, and community awareness sessions.
  - Establish a minimum representation of women in the mapping and assessment of ecosystems.
  - Maintain gender balance in activities related to water purification, agroforestry, and soil stabilization.
2. Capacity Building:
- Ensure equal opportunities for women's capacity building in ecosystem restoration, water purification, and agroforestry practices.
3. Economic Empowerment:
- Include women in income-generating activities resulting from the Programme, such as beekeeping and planting initiatives.
  - Advocate for equal job opportunities for women in technology pilot activities
4. Implementation and Monitoring:
- Monitor and report gender-disaggregated data at all stages of the Programme implementation.
  - Establish a gender-sensitive monitoring network for water quantity and quality.
5. Outreach and Inclusivity:
- Target specific outreach activities at women, especially from disadvantaged communities
- Develop outreach materials that appeal to women, covering participation-associated costs.

## 7 Fund Management Arrangements

The proposed Programme will be implemented under the pass-through funding modality. UNDP will be the lead/convening agency in for implementation. Therefore, UNDP will be responsible for consolidating Narrative reports and submitting them to the MPHSTF Secretariat and UNDP MPTF Office.

Each Participating UN Organization will establish a separate ledger account under its financial regulations and rules for the receipt and administration of the funds disbursed to it by the Administrative Agent from the Fund Account. That separate ledger account will be administered by each Participating UN Organization in accordance with its own regulations, rules, policies and procedures, including those relating to interest.

Each Participating UN Organization will use the funds disbursed to it by the Administrative Agent from the Fund Account to carry out the activities for which it is responsible as set out in the approved programmatic document, as well as for its indirect costs.

The implementation of the Programme activities will be the responsibility of the Participating UN Organizations and will be carried out by each Participating UN Organization in accordance with its own applicable regulations, rules, policies and procedures including those relating to procurement as well as the selection and assessment of implementing partners. Accordingly, personnel will be engaged and administered, equipment, supplies and services purchased, and contracts entered into in accordance with the provisions of such regulations, rules, policies and procedures.

Ownership of equipment and supplies procured, and intellectual property rights associated with works produced, using funds transferred to the Participating UN Organizations under the Memorandum of Understanding between the PUNOs and UNDP MPTF Office on operational aspects of the MPHSTF will be determined in accordance with the regulations, rules, policies and procedures applicable to such Participating UN Organizations, including any agreement with the relevant Host Government, if applicable.

Where a Participating UN Organization wishes to carry out its Fund activities through or in collaboration with a third party, it will be responsible for discharging all commitments and obligations with such third

parties, and no other Participating UN Organization, nor the Administrative Agent, will be responsible for doing so.

Within the proposed Programme, there is no plan for the transfer of cash to the national implementing partners.

## 8 Monitoring, Evaluation and Reporting

### 8.1 Project/programme specific institutional setting and implementation arrangements for monitoring and reporting and evaluation

Programme monitoring and evaluation will be regularly conducted in accordance with the established procedures of UNDP and FAO, and will be ensured by these UN agencies. Regular progress review will be conducted by the relevant project staff, and quality assurance will be conducted by the respective colleagues from participating PUNOs.

Regular meetings with local and national partners will be held in order to discuss the progress of the programme, identify risks, challenges and opportunities and find necessary solutions. Also, it will be performed in line with the requirements of the MPHSTF. The data will be collected according to the Logical Framework and indicators listed in Table 1 and will be provided to the MPHSTF on a quarterly basis.

The respective focal points from each participating agency will monitor the progress and results of the day-to-day project activities. Various monitoring and evaluation tools will be utilized in a complementary manner, including field reports and interviews with key stakeholders and project beneficiaries.

### 8.2 Methodologies for monitoring and reporting of the key outcomes of the project/programme

The Programme's monitoring and reporting methodologies aim to capture, assess, and enhance intended outcomes. They include a baseline and impact assessment, which includes both quantitative and qualitative indicators. Regular assessments track progress, with corrective measures applied in consultation with the Project Board/ Programme Steering Committee. An impact assessment evaluates the programme's effectiveness in improving livelihoods.

The Programme collaborates with the MPHSTF Technical Secretariat to monitor results achieved. Relevant UN agencies, specifically UNDP and FAO, commit to aligning their internal and component-specific monitoring systems with the M&E plan. The Project Board/ Programme Steering Committee serves as a vital mechanism for review, analysis, and decision-making during the project.

Continuous technical and financial monitoring is ingrained in the programme's implementation process, with a permanent internal monitoring system generating regular progress reports. The programme ensures the quality of training through pre- and post-training testing, post-training supervision and coaching, and field monitoring.

A comprehensive assessment will be conducted in the last quarter, measuring achievements against selected indicators. The effectiveness and impact of the programme in improving livelihoods will be scrutinized using the same tools used in the initial situation analysis. This robust monitoring and reporting framework ensure accountability, transparency, and continuous improvement, fostering a dynamic and adaptive approach to achieve its objectives.

### 8.3 Estimated allocation of resources for M&E.

The proposed Programme has allocated in total US \$ 6,250 for M&E activities, including the partial costs of one staff member for M&E, and regular monitoring visits.

## 9 Communication and Visibility

9.1 The Communication Plan is tailored to amplify the impact and significance of the Programme, aligning with its objectives. The communication materials will be crafted to achieve the following.

### Increase Local Awareness:

- Disseminate implementation reports, accompanied by photographs and feedback from participating farmers.
- Develop specific thematic leaflets, infographics, and flyers featuring fact sheets for widespread dissemination.
- Utilize short publications, including analytical reports and policy briefs, to showcase the programme's local and national context through brochures and interviews with stakeholders and beneficiaries.

### Enhance Donor Visibility:

- Highlight the Programme's progress and results through quarterly newsletters, emphasizing the transformative "before and after" situations.
- Publish articles on relevant national/international websites, and social media accounts, to underscore the role of donors and the impact of their contributions.
- Issue press releases during major events attended by high-level officials to maximize visibility.

### Showcase Programme Participants as Role Models:

- Facilitate visits by national/local mass media, organize press visits, where journalists can engage, ask questions, and witness successful practices.
- Produce documentary clips capturing the essence of the Programme's achievements.
- Conduct interviews with beneficiaries, stakeholders, donors, and policy makers for publication on relevant websites, social media accounts, national/local mass media, and through photo exhibitions.

### Diverse Channels for Dissemination:

- Circulate success stories and Programme-related information materials through various publications.
- Actively engage in relevant national and international websites to broaden the reach of Programme highlights.

9.2 Availability of resources (HR, technical capacity, etc) to implement the Communication Plan for the duration of the Programme

UNDP team has one dedicated PR and Outreach Specialist who will be fully engaged in Communication and PR activities of the Programme. The UNDP CO Communication Analyst will also provide overall support to the Programme.

9.3 Adherence and contribution to the MPHSTF's CBM Strategy and the EU Communication and Visibility Plan.

The programme will constantly contribute to the MPHSTF's CBM Strategy, the EU Communication and Visibility Plan, as well as requirements of other donors on visibility during Programme implementation.

# 10 Legal Context or Basis of Relationship

This section specifies what cooperation or assistance agreements<sup>6</sup> form the legal basis for the relationships between the Government and each of the UN organizations participating<sup>7</sup> in this project. For the ExCom Agencies, these are standing cooperation arrangements. For the specialized Agencies, these should be the text that is normally used in their programme/project documents or any other applicable legal instruments.

The text specific to each participating UN organization should be cleared by the respective UN organization.

Table 3 below provides illustrative examples on various UN organizations' cooperation arrangements.

**Table 3: Basis of Relationship (illustrative examples)**

Participating UN organization	Agreement
UNDP	This Project Document shall be the instrument referred to as the Project Document in Article I of the Standard Basic Assistance Agreement between the Government of Uzbekistan and the United Nations Development Programme, signed by the parties on June 10, 1993.
FAO	The Food and Agriculture Organization of the United Nations and the Government of Uzbekistan signed cooperation agreement for the establishment of the FAO Representation in Uzbekistan on June 5, 2014

*The Implementing Partners/Executing Agency<sup>8</sup> agree to undertake all reasonable efforts to ensure that none of the funds received pursuant to this Project are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by Participating UN organizations do not appear on the list maintained by the Security Council Committee established pursuant to resolution 1267 (1999). The list can be accessed via <http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm>. This provision must be included in all sub-contracts or sub-agreements entered into under this programme document.*

# 11 Work plans and budgets

## 11.1 Budget and programmatic relevance

There are 2 ongoing UNDP Projects in the Region focused on building the resilience of the communities through agriculture and social infrastructure. To this end, within the proposed Programme UNDP Project Office's administrative infrastructure (Office space, Vehicles etc.) will be utilized to decrease overall cost of project management. In addition, for efficiency purposes, UNDP will use the existing organigram of the ongoing UNDP project (funded by the Government of Japan), the staff of which will be co-funded by this proposal (to be considered for funding by MPHTSF-4) for the smooth and timely implementation of the proposed Programme. Implementation will be carried out by the UNDP project team in Nukus, jointly with

<sup>6</sup> Such as: the Basic Cooperation Agreement for UNICEF; Standard Basic Assistance Agreement for UNDP, which also applies to UNFPA; the Basic Agreement for WFP; as well as the Country Programme Action Plan(s) where they exist; and other applicable agreements for other participating UN organizations.

<sup>7</sup> Including Specialized Agencies and Non Resident Agencies participating in the Joint Programme

<sup>8</sup> Executing Agency in case of UNDP in countries with no signed Country Programme Action Plans

the involvement of the international and experts of UNDP and FAO, which possess relevant knowledge and expertise in delivering results as planned by the proposed project.

Also, in the Aral Sea Region UNDP jointly with the Ministry of Ecology is implementing a GEF funded project on “Conservation and sustainable management of lakes, wetlands, and riparian corridors as pillars of a resilient and land degradation neutral Aral Sea basin landscape supporting sustainable livelihoods” (US\$ 3,552,968 GEF funding, 2022-2026). The project applies a landscape level approach, linking improved sectoral production systems (irrigation, land management) with the ecological integrity of the landscape: the lakes, wetlands and riparian corridors. Its approach envisions alignment with both Integrated Water Resources Management (IWRM) and Land Degradation Neutrality (LDN) principles.

The opportunities for knowledge exchange will be used by both projects to strengthen the knowledge base for the achievement of results. The UNDP/GEF Aral Sea project-born research findings will contribute in a number of ways to the proposed Programme (i) LDN voluntary targets setting in Karakalpakstan region, (ii) integrated spatial land use planning in two targeted districts, (iii) innovative land restoration techniques on degraded land, and (iv) integrated sustainable land use management (SLM) measures to prevent-reduce-restore habitat degradation on pastureland and floodplain tugai and turanga forest ecosystems.

Moreover, the current project will benefit from a water management coordination framework that will be established in Lower Amudarya and Aral Sea Basin on improving water provision for lakes, wetland, and riparian ecosystem sufficient to maintain their ecological integrity, as well as from an Integrated Water Management Framework and LDN-compatible and climate-smart water management plans for ensuring natural restoration.

In parallel, leveraging opportunities of the UNDP’s BIOFIN process in Uzbekistan, some pilots might be considered on biodiversity credits as a finance solution towards preserving Karakalpakstan’s unique biodiversity and ecosystems.

## 11.2 Budget formulation principles.

The budget for the project proposal has been developed in line with requirements of the MPTHSF for the Aral Sea Region. For the details of the budget, please refer to Annex A1 attached to the project proposal.

## 11.3 Co-financing and in-kind contributions towards project

As indicated above, existing UNDP Project Office’s all available administrative (except utility and connection services) will be in-kind contribution.

Table 4. Work Plan:

Detailed description	UN organization	Implementing Partner	2024			PLANNED BUDGET, in USD
			Q2	Q3	Q4	
<b>Objective 1: Assessment of ecosystem services in the Aral Sea Region to enhance local management practices (UNDP and FAO).</b>						
<b>Output 1.1. Participatory ecosystem restoration to enhance community-based tugai and desert pasture ecosystems management (UNDP)</b>						
Activity 1.1.1 Plan and conduct ecosystem services mapping in selected communities in three pilot districts of Karakalpakstan	UNDP	UNDP, Ministry of Ecology, Environmental Protection and Climate Change, local municipalities, local communities		X	X	2 333.65
Activity 1.1.2 Engage community eco-volunteers into the assessment process through the established platform and integrate them into the existing health-volunteers platform to link the environment and health issues of the region.	UNDP			X	X	10 500
Activity 1.1.3 Enhance the capacity of local stakeholders on the value of ecosystem services and innovative approaches to ecosystem restoration based on local knowledge and international best practices.	UNDP			X	X	25 000
Activity 1.1.4 Design education, communication and outreach materials for various target groups at local, regional and national levels.	UNDP			X	X	2 500
<b>Output 1.1. Subtotal</b>						<b>40 333.65</b>
<b>Output 1.2. Enhanced Ecosystem Services (FAO)</b>						
Activity 1.2.1 Develop an Ecosystem Restoration Guidelines for Aral Sea Region: Integrating UN Decade, FAOSEC Solutions, and Native Tree Species Conservation	FAO	FAO, Ministry of Ecology, Environmental Protection and Climate Change, local municipalities, local communities		X	X	20 100
<b>Output 1.2. Subtotal</b>						<b>20 100</b>
<b>Objective 1. Subtotal</b>						<b>60 433.65</b>
<b>Objective 2: Adopting new approaches in water purification, afforestation, and soil stabilization in the Region (UNDP, FAO).</b>						
<b>Output 2.1. Supporting sustainable afforestation and land revitalizing practices in the Aral Sea Region (UNDP)</b>						
Activity 2.1.1. Establishing nurseries to scale up afforestation initiatives with stakeholders (rural cooperatives, IICAS, Forestry Department) based on the findings (over 20 plants are identified as desert resilient) of the 4 expeditions in the dried area of the Aral Sea.	UNDP	UNDP, Ministry of Ecology, Environmental Protection and Climate Change, local municipalities, local communities		X	X	36 000
Activity 2.1.2: In cooperation with IICAS establish soil and analysis mobile laboratories to monitor sand and dust migration in the Region.	UNDP			X	X	124 500
Activity 2.1.3: Conduct field research on the sand and dust storms and based on that develop a dust migration model for the Region.	UNDP			X	X	28 528.88

<b>Output 2.1. Subtotal</b>						<b>189 028.28</b>
<b>Output 2.2 Enhanced Integrated Management and Restoration of Tugai Forest Ecosystems for Sustainable Livelihoods and Environmental Resilience (FAO)</b>						
Activity 2.2.1: Organize a Tugai Forest Restoration Showcase: Workshop, Planting Techniques, and Field Trip Review	FAO	FAO, Ministry of Ecology, Environmental Protection and Climate Change, local municipalities, local communities		X	X	61 000
<b>Output 2.2. Subtotal</b>						<b>61 000</b>
<b>Objective 2. Subtotal</b>						<b>250 028.88</b>
<b>Objective 3: Promoting integrated air, water, and soil quality monitoring systems to facilitate regulatory practices in the Region (UNDP, FAO).</b>						
<b>Output 3.1 Facilitating Integrated Air Quality Management Systems and Regulatory Practices (UNDP)</b>						
Activity 3.1.1. Conduct needs assessment of the air quality monitoring systems in the region.	UNDP	UNDP, Ministry of Ecology, Environmental Protection and Climate Change, local municipalities, local communities		X	X	2 282.03
Activity 3.1.2: Based on the assessment air quality monitoring systems are established in the target districts.	UNDP	UNDP, Ministry of Ecology, Environmental Protection and Climate Change, local municipalities, local communities		X	X	300 000
Activity 3.1.3: Integrating the air quality monitoring systems in the national air quality monitoring systems. Capacity building of the national partners in monitoring air quality systems in the districts. Based on the analysis of the air monitoring systems facilitate the development of a national standard on air pollution as per SDG 11 in the Aral Sea Region.	UNDP	UNDP, Ministry of Ecology, Environmental Protection and Climate Change, local municipalities, local communities		X	X	30 000
Activity 3.1.4: Awareness raising campaign by involving health volunteers of the region on air quality monitoring system and its impact on the health of the people.	UNDP	UNDP, Ministry of Ecology, Environmental Protection and Climate Change, local municipalities, local communities		X	X	26 000
Activity 3.1.5: Engagement of community eco volunteers and health volunteers in promoting air quality monitoring systems	UNDP	UNDP, Ministry of Ecology, Environmental Protection and Climate Change, local municipalities, local communities		X	X	25 000
<b>Output 3.1. Subtotal</b>						<b>383 282.03</b>
<b>Output 3.2. Enhanced Comprehensive Environmental Quality Management and Regulatory Practices (FAO).</b>						

Activity 3.2.1: Assess Water Management in Dust Storm Areas by installing a water quantity and quality monitoring network and Develop Nature-Based Pollution Solutions Training.	FAO	FAO, Ministry of Ecology, Environmental Protection and Climate Change, local municipalities, local communities		X	X	46 644
Activity 3.2.2: Run state of art water quality model (e.g. WaterWorld) for Karakalpakstan and training on it.	FAO			X	X	16 600
<b>Output 3.2 Subtotal</b>						<b>63 244</b>
<b>Objective 3. Subtotal</b>						<b>446 526.03</b>
<b>Objective 4 Subtotal (Funds from Donor)</b>						
Project Management Expenses	UNDP					37 355.45
Project Management Expenses	FAO					105 656
<b>Objective 4. Subtotal</b>						<b>143 011.45</b>
Total Funds requested from Donor:						<b>900 000</b>
UNDP contribution						
Total Planned Budget						<b>900 000</b>



Table 5. Detailed budget

Period (covered by the WP) June – December 31, 2024 Detailed description	Budget Categories*	Item line budget			Total Amount
		Item description	Unit cost	Number of units	
<b>Objective 1: Assessment of ecosystem services in the Aral Sea Region to enhance local management practices (UNDP and FAO).</b>					
<b>Output 1.1. Participatory ecosystem restoration to enhance community-based tugai and desert pasture ecosystems management (UNDP)</b>					
Activity 1.1.1 Plan and conduct ecosystem services mapping in selected communities in three pilot districts of Karakalpakstan					
Activity 1.1.2 Engage community eco-volunteers into the assessment process through the established platform and integrate them into the existing health-volunteers platform to link the environment and health issues of the region.	Contractual services (including consultants, meetings, workshops and conferences)	lump sum	3 000,00	3	9 000,00
Activity 1.1.3 Enhance the capacity of local stakeholders on the value of ecosystem services and innovative approaches to ecosystem restoration based on local knowledge and international best practices.					
Activity 1.1.4 Design education, communication and outreach materials for various target groups at local, regional and national levels.	Contractual services (including consultants, meetings, workshops and conferences)	lump sum	500,00	3	1 500,00
Recruitment of International Consultant on assessment of ecosystem services in Aral Sea Region	Contractual services (including consultants, meetings, workshops and conferences)	lump sum	20 000,00	1	20 000,00
Recruitment of National Consultant (assistant) on assessment of ecosystem services in Aral Sea Region	Contractual services (including consultants, meetings, workshops and conferences)	lump sum	3 900,00	1	3 900,00
Recruitment of National Consultant (graphic designer)	Contractual services (including consultants, meetings, workshops and conferences)	lump sum	1 500,00	1	1 500,00
Miscellaneous expenses DPC - 5%	General operating and other direct costs	lump sum			1 795,00
GMS - 7%	Indirect costs	lump sum			2638,65
<b>Objective 1 Subtotal (UNDP)</b>					<b>40 333,65</b>
<b>Output 1.2. Enhanced Ecosystem Services (FAO)</b>					
Activity 1.2.1. Develop an Ecosystem Restoration Guidelines for Aral Sea Region: Integrating UN Decade, FAOSEC Solutions, and Native Tree Species Conservation Letter of Agreement with the Chamber of Forest Engineer of Turkey (OMO) to develop an Ecosystem Restoration Guidelines for Aral Sea Region: Integrating UN Decade, FAOSEC Solutions, and Native Tree Species Conservation					
	Transfers & Grants Counterparts	lump sum	20 100,00	1	20 100,00
<b>Objective 1 Subtotal (FAO)</b>					<b>20 100,00</b>
<b>Objective 2: Adopting new approaches in water purification, afforestation, and soil stabilization in the Region (UNDP, FAO).</b>					

<b>Output 2.1. Supporting sustainable afforestation and land revitalizing practices in the Aral Sea Region (UNDP)</b>					
Activity 2.1.1 Establish nurseries to scale up afforestation initiatives with stakeholders (rural cooperatives, IICAS, Forestry Department) based on the findings (over 20 plants are identified as desert resilient) of the 4 expeditions in the dried area of the Aral Sea					
Estbalish/support of nurseries in pilot communities	Supplies, commodities, materials	lump sum	4 500,00	3	13 500,00
Initiate startups on chlorella, biohumus, zoohumus and/other technologies etc.	Supplies, commodities, materials	lump sum	4 500,00	3	13 500,00
Train and engage communities in chistanche cultivation	Contractual services (including consultants, meetings, workshops and conferences)	lump sum	3 000,00	3	9 000,00
Activity 2.1.2: In cooperation with IICAS establish soil and analysis mobile laboratories to monitor sand and dust migration in the Region.					
Procurement of soil analysis mobile laboratories	Equipment, vehicles and furniture (including depreciation)	lump sum	41 500, 00	3	124 500,00
Activity 2.1.3: Conduct field research on the sand and dust storms and based on that develop a dust migration model for the Region.					
Recruitment of National Consultant	Contractual services (including consultants, meetings, workshops and conferences)	lump sum	1 500,00	1	1 500,00
Team Leader on Social Services / Monitoring and Evaluation, NPSA-8 (5 months, 50% from Japan-funded project + 50% MPTF-4)	Staff	monthly payment	1 250,00	5	6 250,00
Miscellaneous expenses DPC - 5%	General operating and other direct costs	lump sum			8 412,50
GMS - 7%	Indirect costs	lump sum			12 366,38
<b>Objective 2 Subtotal (UNDP)</b>					<b>189 028,88</b>
<b>Output 2.2 Enhanced Integrated Management and Restoration of Tugai Forest Ecosystems for Sustainable Livelihoods and Environmental Resilience (FAO)</b>					
Activity 2.2.1: Organize a Tugai Forest Restoration Showcase: Workshop, Planting Techniques, and Field Trip Review					
International consultant on tugai forest (WWF)	Staff	monthly payments	3 000,00	2	6 000,00
International consultant on land/water management (WWF)	Staff	monthly payments	3 000,00	2	6 000,00
National consultant on water and land management	Staff	monthly payments	2 000,00	2	4 000,00
Introductory seminar to present the results of the tugai forest restoration in southern shoreline of Balkhash lake and the Ili river delta in Kazakhstan (2 districts- 20 people)	General operating and other direct costs	lump sum	7 000,00	1	7 000,00
Field workshop on techniques and approaches of tugai species planting	General operating and other direct costs	lump sum	7 000,00	1	7 000,00
Field trip to revise the results of tugai seedlings planting and to sum up the outcomes	General operating and other direct costs	lump sum	7 000,00	1	7 000,00
Seedlings of oleaster (800 pro ha)	Supplies, commodities, materials	lump sum	4 000,00	1	4 000,00

Waterboxx (100 pieces*2)	Supplies, commodities, materials	pieces	6 000,00	1	6 000,00
Additional equipment (hydrogel; chain link mesh, etc)	Supplies, commodities, materials	lump sum	5 500,00	1	5 500,00
Travels international activity 2.2.1	Travel	per each travel	2 000,00	3	6 000,00
Travel national activity 2.2.1	Travel	per each travel	500,00	5	2 500,00
<b>Objective 2 Subtotal (FAO)</b>					<b>61 000,00</b>
<b>Objective 3: Promoting integrated air, water, and soil quality monitoring systems to facilitate regulatory practices in the Region (UNDP, FAO).</b>					
<b>Output 3.1 Facilitating Integrated Air Quality Management Systems and Regulatory Practices (UNDP)</b>					
Activity 3.1.1: Conduct needs assessment of the air quality monitoring systems in the region.					
Activity 3.1.2: Based on the assessment establish air quality monitoring systems in the target districts.					
Procurement of equipment (air quality monitoring system)	Equipment, vehicles and furniture (including depreciation)	lump sum	35 000,00	8	280 000,00
Support at least three startup initiatives on air, soil and water monitoring system	Equipment, vehicles and furniture (including depreciation)	lump sum	5 000,00	3	15 000,00
Activity 3.1.3: Integrating the air quality monitoring systems in the national air quality monitoring systems. Capacity building of the national partners in monitoring air quality systems in the districts. Based on the analysis of the air monitoring systems facilitate the development of a national standard on air pollution as per SDG 11 in the Aral Sea Region.					
Recruitment of International Consultant on needs assessment of the air quality monitoring systems	Contractual services (including consultants, meetings, workshops and conferences)	lump sum	20 000,00	1	20 000,00
Recruitment of National Consultant (assistant) on needs assessment of the air quality monitoring systems	Contractual services (including consultants, meetings, workshops and conferences)	lump sum	3 900,0 0	1	3 900,00
Activity 3.1.4: Conduct awareness raising campaign by involving health volunteers of the region on air quality monitoring system and its impact on the health of the people.					
Activity 3.1.5: Engage community eco volunteers and health volunteers in promoting air quality monitoring systems	Contractual services (including consultants, meetings, workshops and conferences)	lump sum	1 000,00	16	16 000,00
Salary of Team Leader on Community Resilience Building, NPSA-8 (5 months, 50% from Japan-funded project + 50% MPTF-4)	Staff	monthly payment	1 250,00	5	6 250,00
Miscellaneous expenses DPC - 5%	General operating and other direct costs	lump sum			17 057,50
GMS - 7%	Indirect costs	lump sum			25 074,53
<b>Objective 3 Subtotal (UNDP)</b>					<b>383 282,03</b>
<b>Output 3.2 Enhanced Comprehensive Environmental Quality Management and Regulatory Practices (FAO)</b>					

Activity 3.2.1: Assess water management in dust storm areas by installing a water quantity and quality monitoring network and develop nature-based pollution solutions training course					-
Establish Network stations	Equipment, Vehicles and Furniture	pieces	4 008,80	5	20 044,00
Maintenance and data analysis (LOA with Ambiotek)	Transfers & Grants Counterparts	lump sum	15 100,00	1	15 100,00
Travels international	Travel	per each travel	2 000,00	4	8 000,00
Travels national	Travel	per each travel	500,00	7	3 500,00
Activity 3.2.2: Run state of art water quality model (e.g. WaterWorld) for Karakalpakstan and training on it.					-
Letter of Agreement with King of College to execute the Activity 3.2.2. that described above, namely to	Transfers & Grants Counterparts	lump sum	5 100,00	1	5 100,00
Training within activity 3.22	General operating and other direct costs	lump sum	5 000,00	1	5 000,00
Travels international activity 3.2.2 to execute the Activity 3.2.2 (namely, to do the training on the water quality model)	Travel	per each travel	2 000,00	2	4 000,00
Travels national activity 3.2.2 (to bring the national stakeholders for the training)	Travel	per each travel	500,00	5	2 500,00
<b>Objective 3 Subtotal (FAO)</b>					<b>63 244,00</b>
<b>Project Management (UNDP)</b>					
Programme Manager, NPSA-10 (5 months, 50% from Japan-funded project + 50% MPTF-4)	Staff	monthly payment	1 685,00	5	8 425,00
Admin&Finance Specialist, NPSA-7 (5 months, 50% from Japan-funded project + 50% MPTF-4)	Staff	monthly payment	1 050,00	5	5 250,00
PR & Outreach Specialist, NPSA-7 (3 months, 50% from Japan-funded project + 50% MPTF-4)	Staff	monthly payment	1 050,00	3	3 150,00
Communication (telephone, Internet connection at the project office), cost share with Japan-funded Project	General operating and other direct costs	monthly payment	250,00	5	1 250,00
Stationery supply	General operating and other direct costs	Commodities	500,00	2	1 000,00
Contractual services (email subscription, courier services, broker's services, bank charges, placement of vacancy/tender announcements) (UNDP)	Contractual services (including consultants, meetings, workshops and conferences)	Months	320,00	6	1 920,00
Utilities, cost share with Japan-funded Project	General operating and other direct costs	Months	200,00	6	1 200,00
Transportation expenses (fuel, spare parts etc.), cost share with Japan-funded Project	General operating and other direct costs	Commodities	1 000,00	1	1 000,00
Travel	Travel	Trip	5 254,1 8	1	5 254,18
Printing	Contractual services (including consultants, meetings, workshops and conferences)	Booklets	600,00	8	4 800,00

Miscellaneous expenses DPC - 5%	General operating and other direct costs	lump sum			1 812,95
GMS - 7%	Indirect costs	lump sum			2 443,81
<b>Project Management Subtotal (UNDP)</b>					<b>37 355,45</b>
<b>Project Management (FAO)</b>					
National project facilitator	Staff	monthly payments	2 000,00	7	14 000,00
National communication specialist	Staff	monthly payments	2 000,00	2	4 000,00
Project Assistant	Staff	monthly payments	1 600,00	7	11 200,00
Interpreters/translators	Staff	monthly payments	2 000,00	4	8 000,00
Technical Support Service to Project	General operating and other direct costs	per day	575,00	16	9 200,00
General operating and other direct costs	General operating and other direct costs	Lump sum	21 000,86	1	21 000,86
FAO Admin support cost (Admin, travel, procurement, finance, HR)	Staff	Lump sum	21 900,00	1	21 900,00
Indirect support cost FAO (7%)	Indirect costs	Lump sum	16 355.14	1	16 355.14
<b>Project Management Subtotal (FAO)</b>					<b>105 656.00</b>

<b>Total cost (UNDP)</b>					<b>607 475,64</b>
Indirect support cost (UNDP)					42 523,36
<b>TOTAL BUDGET (UNDP)</b>					<b>650 000,00</b>

<b>Total cost (FAO)</b>					<b>233 644.86</b>
Indirect support cost (FAO)					16 355.14
<b>TOTAL BUDGET</b>					<b>250 000,00</b>

<b>Total cost (UNDP, FAO)</b>					<b>841 121,50</b>
Indirect support cost (UNDP, FAO)					58 878,50
<b>TOTAL BUDGET (UNDP, FAO)</b>					<b>900 000,00</b>

Table 5.1. Detailed budget (UNDP)

Period (covered by the WP) June – December 31, 2024

Detailed description	Budget Categories*	Item line budget			Total Amount
		Item description	Unit cost	Number of units	
<b>Objective 1: Assessment of ecosystem services in the Aral Sea Region to enhance local management practices (UNDP and FAO).</b>					
<b>Output 1.1. Participatory ecosystem restoration to enhance community-based tugai and desert pasture ecosystems management (UNDP)</b>					
Activity 1.1.1 Plan and conduct ecosystem services mapping in selected communities in three pilot districts of Karakalpakstan					
Activity 1.1.2 Engage community eco-volunteers into the assessment process through the established platform and integrate them into the existing health-volunteers platform to link the environment and health issues of the region.	Contractual services (including consultants, meetings, workshops and conferences)	lump sum	3 000,00	3	9 000,00
Activity 1.1.3 Enhance the capacity of local stakeholders on the value of ecosystem services and innovative approaches to ecosystem restoration based on local knowledge and international best practices.					
Activity 1.1.4 Design of education, communication and outreach materials for various target groups at local, regional and national levels.	Contractual services (including consultants, meetings, workshops and conferences)	lump sum	500,00	3	1 500,00
Recruitment of International Consultant on assessment of ecosystem services in Aral Sea Region	Contractual services (including consultants, meetings, workshops and conferences)	lump sum	20 000,00	1	20 000,00
Recruitment of National Consultant (assistant) on assessment of ecosystem services in Aral Sea Region	Contractual services (including consultants, meetings, workshops and conferences)	lump sum	3 900,00	1	3 900,00
Recruitment of National Consultant (graphic designer)	Contractual services (including consultants, meetings, workshops and conferences)	lump sum	1 500,00	1	1 500,00
Miscellaneous expenses DPC - 5%	General operating and other direct costs	lump sum			1 795,00
GMS - 7%	Indirect costs	lump sum			2 638,65
<b>Objective 1 Subtotal (UNDP)</b>					<b>40 333,65</b>
<b>Objective 2: Adopting new approaches in water purification, afforestation, and soil stabilization in the Region (UNDP, FAO).</b>					
<b>Output 2.1. Supporting sustainable afforestation and land revitalizing practices in the Aral Sea Region (UNDP)</b>					
Activity 2.1.1 Establish nurseries to scale up afforestation initiatives with stakeholders (rural cooperatives, IICAS, Forestry Department) based on the findings (over 20 plants are identified as desert resilient) of the 4 expeditions in the dried area of the Aral Sea					
Estblish/support of nurseries in pilot communities	Supplies, commodities, materials	lump sum	4 500,00	3	13 500,00
Initiate startups on chlorella, biohumus, zoohumus and/other technologies etc.	Supplies, commodities, materials	lump sum	4 500,00	3	13 500,00

Train and engage communities in chistanche cultivation	Contractual services (including consultants, meetings, workshops and conferences)	lump sum	3 000,00	3	9 000,00
Activity 2.1.2: In cooperation with IICAS establish soil and analysis mobile laboratories to monitor sand and dust migration in the Region.					
Procurement of soil analysis mobile laboratories	Equipment, vehicles and furniture (including depreciation)	lump sum	41 500,00	3	124 500,00
Activity 2.1.3: Conduct field research on the sand and dust storms and based on that develop a dust migration model for the Region.					
Recruitment of National Consultant	Contractual services (including consultants, meetings, workshops and conferences)	lump sum	1 500,00	1	1 500,00
Team Leader on Social Services / Monitoring and Evaluation, NPSA-8 (11 months, 50% from Japan-funded project + 50% MPTF-4)	Staff	monthly payment	1 250,00	5	6 250,00
Miscellaneous expenses DPC - 5%	General operating and other direct costs	lump sum			14 037,50
GMS - 7%	Indirect costs	lump sum			20 635,13
<b>Objective 2 Subtotal (UNDP)</b>					<b>315 422,63</b>
<b>Objective 3: Promoting integrated air, water, and soil quality monitoring systems to facilitate regulatory practices in the Region (UNDP, FAO).</b>					
<b>Output 3.1 Facilitating Integrated Air Quality Management Systems and Regulatory Practices (UNDP)</b>					
Activity 3.1.1: Conduct needs assessment of the air quality monitoring systems in the region.					
Activity 3.1.2: Based on the assessment establish air quality monitoring systems in the target districts.					
Procurement of equipment (air quality monitoring system)	Equipment, vehicles and furniture (including depreciation)	lump sum	35 000,00	8	280 000,00
Support at least three startup initiatives on air, soil and water monitoring system	Equipment, vehicles and furniture (including depreciation)	lump sum	5 000,00	3	15 000,00
Activity 3.1.3: Integrating the air quality monitoring systems in the national air quality monitoring systems. Capacity building of the national partners in monitoring air quality systems in the districts. Based on the analysis of the air monitoring systems facilitate the development of a national standard on air pollution as per SDG 11 in the Aral Sea Region.					
Recruitment of International Consultant on needs assessment of the air quality monitoring systems	Contractual services (including consultants, meetings, workshops and conferences)	lump sum	20 000,00	1	20 000,00
Recruitment of National Consultant (assistant) on needs assessment of the air quality monitoring systems	Contractual services (including consultants, meetings, workshops and conferences)	lump sum	3 900,00	1	3 900,00
Activity 3.1.4: Awareness raising campaign by involving health volunteers of the region on air quality monitoring system and its impact on the health of the people.					
Activity 3.1.5: Engage community eco volunteers and health volunteers in promoting air quality monitoring systems	Contractual services (including consultants, meetings, workshops and conferences)	lump sum	1 000,00	16	16 000,00
Salary of Team Leader on Community Resilience Building, NPSA-8 (11 months, 50% from Japan-funded project + 50% MPTF-4)	Staff	monthly payment	1 250,00	5	6 250,00
Miscellaneous expenses DPC - 5%	General operating and other direct costs	lump sum			17 057,50
GMS - 7%	Indirect costs	lump sum			25 074,53
<b>Objective 3 Subtotal (UNDP)</b>					<b>383 282,03</b>

<b>Project Management (UNDP)</b>					
Programme Manager, NPSA-10 (11 months, 50% from Japan-funded project + 50% MPTF-4)	Staff	monthly payment	1 685,00	5	8 425,00
Admin&Finance Specialist, NPSA-7 (11 months, 50% from Japan-funded project + 50% MPTF-4)	Staff	monthly payment	1 050,00	5	5 250,00
PR & Outreach Specialist, NPSA-7 (11 months, 50% from Japan-funded project + 50% MPTF-4)	Staff	monthly payment	1 050,00	3	3 150,00
Communication (telephone, Internet connection at the project office), cost share with Japan-funded Project	General operating and other direct costs	monthly payment	250,00	5	1 250,00
Stationery supply	General operating and other direct costs	Commodities	500,00	2	1 000,00
Contractual services (email subscription, courier services, broker's services, bank charges, placement of vacancy/tender announcements) (UNDP)	Contractual services (including consultants, meetings, workshops and conferences)	Months	320,00	6	1 920,00
Utilities, cost share with Japan-funded Project	General operating and other direct costs	Months	200,00	6	1 200,00
Transportation expenses (fuel, spare parts etc.), cost share with Japan-funded Project	General operating and other direct costs	Commodities	1 000,00	1	1 000,00
Travel	Travel	Trip	5 264,01	1	5 254,18
Printing	Contractual services (including consultants, meetings, workshops and conferences)	Booklets	600,00	8	4 800,00
Miscellaneous expenses DPC - 5%	General operating and other direct costs	lump sum			1 662,46
GMS - 7%	Indirect costs	lump sum			2 443,81
<b>Project Management Subtotal (UNDP)</b>					<b>37 355,45</b>

<b>Total cost (UNDP)</b>					<b>607 476,64</b>
Indirect support cost (UNDP)					42 523,36
<b>TOTAL BUDGET (UNDP)</b>					<b>650 000,00</b>



Table 5. 2. Detailed budget (FAO)

Period (covered by the WP) June – December 31, 2024

Detailed description	Budget Categories*	Item line budget			Total Amount
		Item description	Unit cost	Number of units	
<b>Objective 1: Assessment of ecosystem services in the Aral Sea Region to enhance local management practices (UNDP and FAO).</b>					
<b>Output 1.2. Enhanced Ecosystem Services (FAO)</b>					
Activity 1.2.1. Develop an Ecosystem Restoration Guidelines for Aral Sea Region: Integrating UN Decade, FAOSEC Solutions, and Native Tree Species Conservation					
Letter of Agreement with the Chamber of Forest Engineers of Turkey (OMO) on guidelines	Contractual services (including consultants, meetings, workshops and conferences)	lump sum	20 100,00	1	20 100,00
<b>Objective 1 Subtotal (FAO)</b>					<b>20 100,00</b>
<b>Objective 2: Adopting new approaches in water purification, afforestation, and soil stabilization in the Region (UNDP, FAO).</b>					
<b>Output 2.2 Enhanced Integrated Management and Restoration of Tugai Forest Ecosystems for Sustainable Livelihoods and Environmental Resilience (FAO)</b>					
Activity 2.2.1: Organize a Tugai Forest Restoration Showcase: Workshop, Planting Techniques, and Field Trip Review					
International consultant on tugai forest (WWF)	Staff	monthly payments	3 000,00	2	6 000,00
International consultant on land/water management (WWF)	Staff	monthly payments	3 000,00	2	6 000,00
National consultant on water and land management	Staff	monthly payments	2 000,00	2	4 000,00
Introductory seminar to present the results of the tugai forest restoration in southern shoreline of Balkhash lake and the Ili river delta in Kazakhstan (2 districts- 20 people)	General operating and other direct costs	lump sum	7 000,00	1	7 000,00
Field workshop on techniques and approaches of tugai species planting	General operating and other direct costs	lump sum	7 000,00	1	7 000,00
Field trip to revise the results of tugai seedlings planting and to sum up the outcomes	General operating and other direct costs	lump sum	7 000,00	1	7 000,00
Seedlings of oleaster (800 pro ha)	Supplies, commodities, materials	lump sum	4 000,00	1	4 000,00
Waterboxx (100 pieces*2)	Supplies, commodities, materials	pieces	6 000,00	1	6 000,00
Additional equipment (hydrogel; chain link mesh, etc)	Supplies, commodities, materials	lump sum	5 500,00	1	5 500,00
Travels international activity 2.2.1	Travel	per each travel	2 000,00	3	6 000,00
Travel national activity 2.2.1	Travel	per each travel	500,00	5	2 500,00
<b>Objective 2 Subtotal (FAO)</b>					<b>61 000,00</b>
<b>Objective 3: Promoting integrated air, water, and soil quality monitoring systems to facilitate regulatory practices in the Region (UNDP, FAO).</b>					
<b>Output 3.2 Enhanced Comprehensive Environmental Quality Management and Regulatory Practices (FAO)</b>					

Activity 3.2.1: Assess Water Management in Dust Storm Areas by installing a water quantity and quality monitoring network and Develop Nature-Based Pollution Solutions Training					-
Network stations	Supplies, commodities, materials	pieces	4 008,80	5	20 044,00
Maintenance and data analysis (Letter of Agreement with Ambiotek)	Supplies, commodities, materials	lump sum	15 100,00	1	15 100,00
Travels international	Travel	per each travel	2 000,00	4	8 000,00
Travels national	Travel	per each travel	500,00	7	3 500,00
Activity 3.2.1: Run state of art water quality model (e.g. WaterWorld) for Karakalpakstan and training on it.					-
Letter of Agreement with King of College	Contractual services (including consultants, meetings, workshops and conferences)	lump sum	5 100,00	1	5 100,00
Training within activity 3.2.1	General operating and other direct costs	lump sum	5 000,00	1	5 000,00
Travels international activity 3.2.1	Travel	per each travel	2 000,00	2	4 000,00
Travels national activity 3.2.1	Travel	per each travel	500,00	5	2 500,00
<b>Objective 3 Subtotal (FAO)</b>					<b>63 244,00</b>
<b>Project Management (FAO)</b>					
National project facilitator	Staff	monthly payments	2 000,00	7	14 000,00
National communication specialist	Staff	monthly payments	2 000,00	2	4 000,00
Project Assistant	Staff	monthly payments	1 600,00	7	11 200,00
Interpreters/translators	Staff	monthly payments	2 000,00	4	8 000,00
Technical Support Service to Project	General operating and other direct costs	per day	575,00	16	9 200,00
General operating and other direct costs	General operating and other direct costs	Lump sum	21 000.86	1	21 000.86
FAO Admin support cost (Admin, travel, procurement, finance, HR)	Staff	Lump sum	21 900,00	1	21 900,00
Indirect support cost FAO (7%)	Indirect costs	Lump sum	16 355.14	1	16 355.14
<b>Project Management Subtotal (FAO)</b>					<b>105 656.00</b>
<b>Total cost (FAO)</b>					<b>233 644.86</b>
Indirect support cost (FAO)					16 355.14
<b>TOTAL BUDGET</b>					<b>250 000,00</b>

**Table 6. Consolidated Budget**  
**Period (covered by the WP) June – December 31, 2024**

Categories		Total	Year 1 (June-Dec, 2024)	Allocation: MPHSTF		
				Total	UNDP	FAO
1	Staff	104 424,00	104 424,00	104 424,00	29 325,00	75 100,00
2	Supplies, commodities and materials	42 500,00	42 500,00	42 500,00	27 000,00	15 500,00
3	Equipment, vehicles and furniture (including depreciation)	439 544,00	439 544,00	439 544,00	419 500,00	20 044,00
4	Contractual services (including consultants, meetings, workshops and conferences)	93 020,00	93 020,00	93 020,00	93 020,00	0,00
5	Travel	31 754,18	31 754,18	31 754,18	5 254,18	26 500,00
6	Transfers and grants to counterparts	40 300,00	40 300,00	40 300,00	0,00	40 300,00
7	General operating and other direct costs	89 578,32	89 578,32	89 578,32	33 377,46	56 200,86
<b>Subtotal</b>		<b>841 121,50</b>	<b>841 121,50</b>	<b>841 121,50</b>	<b>607 476,64</b>	<b>233 644,86</b>
8	Indirect support costs	58 878,50	58 878,50	58 878,50	42 523,36	16 355,14
<b>TOTAL</b>		<b>900 000,00</b>	<b>900 000,00</b>	<b>900 000,00</b>	<b>650 000,00</b>	<b>250 000,00</b>