

## UNDP and UNESCO Joint Programme ‘Addressing the urgent human insecurities in the Aral Sea region through the promotion of sustainable rural development’

### Annual programme narrative progress report

**Reporting period: 1 January – 31 December 2020**

<p style="text-align: center;"><b>Programme Title &amp; Project Number</b></p> <ul style="list-style-type: none"> <li>• Programme Title: UNDP and UNESCO Joint Programme ‘Addressing the urgent human insecurities in the Aral Sea region through the promotion of sustainable rural development’</li> <li>• Programme Number: 00123193</li> <li>• MPTF Office Project Reference Number: 00117259</li> </ul>	<p style="text-align: center;"><b>Country, Locality(s), Priority Area(s) / Strategic Results</b></p> <p>Country/Region: Uzbekistan, the Republic of Karakalpakstan, Takhtakupir district</p> <hr/> <p>Priority area/strategic results:</p> <ul style="list-style-type: none"> <li>- UNDAF Outcome 1: Equitable and sustainable economic growth through productive employment, improvement of environment for business, entrepreneurship, and increased innovations;</li> <li>- UNDAF Outcome 6: Rural population benefits from sustainable management of natural resources and resilience to disasters and climate change.</li> </ul>
<p style="text-align: center;"><b>Participating Organization(s)</b></p> <ul style="list-style-type: none"> <li>• Organizations that have received direct funding from the MPTF Office under this programme: UNDP, UNESCO</li> </ul>	<p style="text-align: center;"><b>Implementing Partners</b></p> <ul style="list-style-type: none"> <li>- The Ministry of Economy and Industry of the Republic of Uzbekistan (now the Ministry of Economic Development and Poverty Reduction)</li> <li>- The Council of Ministers of the Republic of Karakalpakstan</li> <li>- The State Committee on Forestry of Uzbekistan and its branch in Karakalpakstan</li> <li>- The Scientific Information Centre of the Interstate Coordination Water Commission of Central Asia (SIC ICWC)</li> <li>- The International Innovation Centre for the Aral Sea Basin under the President of the Republic of Uzbekistan</li> <li>- The Ministry of Employment and Labour Relations of the Republic of Uzbekistan</li> <li>- The Ministry of Agriculture in Karakalpakstan</li> <li>- The Ministry of Housing and Communal Services in Karakalpakstan</li> <li>- The Chamber of Commerce and Industry of Uzbekistan</li> <li>- Business Women’s Association</li> <li>- Youth Union</li> <li>- The State Committee of the Republic of Uzbekistan for Tourism Development</li> </ul>

<b>Programme/Project Cost (US\$)</b>
<b>Total approved budget as per project document: USD \$1,463,900</b>
<b>MPTF /JP Contribution:</b> by Agency (if applicable)
<b>Agency Contribution</b> • <b>by Agency (if applicable)</b>
Government Contribution (if applicable)
Other Contributions (donors) (if applicable)
<b>TOTAL:</b>
<b>Programme Assessment/Review/Mid-Term Eval.</b>
Assessment/Review - if applicable please attach <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Date: dd.mm.yyyy
Mid-Term Evaluation Report – if applicable please attach <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Date: dd.mm.yyyy

<b>Programme Duration</b>	
Overall Duration (months)	24
Start Date (dd.mm.yyyy)	26/08/2019
Original End Date (dd.mm.yyyy)	28/02/2021
Current End Date (dd.mm.yyyy)	31/08/2021
<b>Report Submitted By</b>	
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## LIST OF KEY ACRONYMS

BWA	Karakalpakstan Branch, Business Women’s Association of Uzbekistan ‘Tadbirkor Ayol’
CCI	Chamber of Commerce and Industry
CDP	Community Development Plan
COVID-19	Coronavirus Disease 2019
DWO	Drinking Water Organization
FGDs	Focus Group Discussions
HSU	Human Security Unit
MEI	Ministry of Economy and Industry (Ministry of Economic Development and Poverty Reduction)
MoA	Ministry of Agriculture
MPHSTF	UN Multi-Partner Human Security Trust Fund for the Aral Sea region in Uzbekistan
SIC ICWC	The Scientific-Information Centre of the Interstate Coordination Water Commission
TDK	Takhtakupir District Khokimiyat (District Municipality)
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme
UNESCO	United Nations Educational Scientific and Cultural Organization
UNFPA	United Nations Population Fund
UN JP	UN Joint Programme/Joint Project
UNTFHS	United Nations Trust Fund for Human Security
UNV	UN Volunteers

## EXECUTIVE SUMMARY

The UNDP and UNESCO Joint Programme (JP) ‘Addressing the urgent human insecurities in the Aral Sea region through the promotion of sustainable rural development’ addresses multi-dimensional problems in the areas of environmental and social securities in the Aral Sea region. During the reported period of its implementation (1 January – 31 December/2020), the JP accomplished the following achievements.

### Achievements:

- 5 infrastructure projects on water purification and supply of drinking water implemented in Takhtakupir district with total number of beneficiaries reaches 3,491 people in 5 rural communities;  
Training module on Water Sanitation and Hygiene (WASH) and brochures for the population “Water, sanitation and hygiene” were developed. 150 people were trained in WASH, sanitation and hygiene rules.
- 6 business projects (milk processing, soap production, forage production, production of reed slabs etc) supported, over 35 rural people to be employed and 5,537 people be indirectly benefiting; 25 people (52% women and youth) enhanced skills through training on value chain management at livestock sector and fundamentals of business planning and entrepreneurship development; 25 women and girls improved knowledge on basics of entrepreneurship and business development through organized training; 20 owners of SME were trained on strategy formulation, value-chain analysis and taxation which had positive impact on their business development; 62 tourism, nature and culture professionals as well as local communities, including women and youth, improved capacities on development of heritage-based sustainable tourism and development of hospitality industry through organized two trainings. Two research/assessment on development of the tourism sector, including eco-tourism, and hospitality industry in Karakalpakstan is being conducted, including elaboration of the new tourism destinations and products, set of recommendation in the respective fields is being formulated.
- Within the framework of measures for adaptation to climate change, through evidence-based afforestation initiatives, 2 scientific expeditions conducted to the dried bed of the Aral Sea by Scientific-Information Center of the Interstate Commission for Water Coordination of Central Asia (SIC ICWC) and the International Innovation Center of the Aral Sea region. As a result: more than 30 plant species from 1500 different points were identified, their planting on the dried seabed was recommended; Comprehensive report in the form of Book “Monitoring of dried bed of Aral Sea” developed in Russian and English to disseminate to Project partners and potential donors; Based on the carried-out assessment of the needs of the Takhtakupir forestry, 17 types of machinery and equipment was determined and most of them purchased and transferred for use. These measures helped to plant saxaul on over 3000 hectares of land on the dried bed of the Aral Sea and create a nursery on 49 hectares of land for growing seedlings from drought-resistant plants and 58 hectares of pasture areas. These measures will have positive impact on sand stabilization, decrease air pollution, improve agriculture and health condition of people and create more employment opportunities.

Overall, during the reported period, the project successfully implemented planned activities and managed to achieve majority of set targets in 2020.

This Joint Programme is funded by the MPHSTF for the Aral Sea region, which is generously supported by the Governments of Uzbekistan, Norway, Finland, the Republic of Korea, and the European Union.



## I. Purpose

The ultimate goal of the UNDP and UNESCO Joint Programme (JP) is to address the environmental, social and economic insecurities in the most vulnerable communities of the Aral Sea region, by formulating comprehensive solutions to address environmental issues, promote access to basic services, improve livelihoods through the development of sustainable tourism, and provide access to clean drinking water.

The JP's goal is in line with the government's policy that highlights addressing the negative consequences of the Aral Sea environmental disaster as a priority issue. The project seeks to improve the wellbeing of communities affected by the Aral Sea crisis through the following objectives, which fully align with the Multi-Partner Human Security Trust Fund (MPHSTF) Programmatic Framework and Results Matrix as they contribute to addressing the multiple insecurities of people living in one of the most vulnerable districts of Karakalpakstan. The JP has three outcomes:

- Outcome 1. Improving community resilience by ensuring access to clean drinking water.
- Outcome 2. Enhancing the social wellbeing of the rural population (including women/youth) through expanding income generation opportunities and promoting inclusive sustainable growth of tourism in Karakalpakstan.
- Outcome 3. Promoting climate change adaptation actions through evidence-based afforestation initiatives.

The JP results contribute to the attainment of UNDAF Outcome 1 (equitable and sustainable economic growth) and Outcome 6 (sustainable management of natural resources and resilience to disasters and climate change), while they also mirror the MPHSTF Results Matrix Outcomes. The first objective has a direct contribution to all three outputs of the MPHSTF Results Matrix Outcome 3 (security of local community access to affordable and healthy food and clean drinking water). The second objective contributes to the first two outputs of the MPHSTF Results Matrix Outcome 2 (an increase in employment and income generation opportunities for local communities). The third objective addresses all three outputs of the MPHSTF Results Matrix Outcome 1 (reduction of stress on local communities due to the deteriorating environmental situation).

The project's goal and objectives are fully aligned with the following policies and strategies of the Government of Uzbekistan for addressing the Aral Sea crisis:

- The State Programme on Development of the Aral Sea Region for 2017-2021<sup>1</sup>, which focuses on improving the environmental and socio-economic situation, the living conditions of the population, and the effective implementation of investment projects to mitigate the environmental disaster in the Aral Sea region;
- The Resolution of the Cabinet of Ministers of Uzbekistan<sup>2</sup> on 'Organizational aspects of establishing green areas and creation of protected forests on the dried-up areas of the Aral Sea' with planned afforestation on nearly 500,000 hectares of land in 2019;
- The Resolution of the Cabinet of Ministers of Uzbekistan on 'Measures for integrated socio-economic development of the Muynak District of the Republic of Karakalpakstan', which focuses on the development of the Muynak District, including its tourism sector;
- The Resolution of the President of the Republic of Uzbekistan<sup>3</sup> on 'Measures for integrated socio-economic development of the Republic of Karakalpakstan in 2020-2023'. This resolution

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<sup>1</sup> The State Programme on the Development of the Aral Sea Region for 2017-2021, Presidential Decree # 2731, dated 18 January 2017

<sup>2</sup> Resolution of the Cabinet of Ministers of Uzbekistan, # 132, dated 15 February 2019

focuses on the holistic development of the region through strategies including the improvement of water supply, education, health infrastructure, sport facilities, attraction of investments into the region, creation of industrial production entities, and support of youth and entrepreneurship.

## II. Results

### I) Key achievements

This report demonstrates the JP achievements and results attained for the period from 1 January to 31 December 2020. The JP geographically focuses on the Takhtakupir district of Karakalpakstan, which is one of the least developed districts of the Aral Sea region. As per survey results, 60.0% of respondents noted the lack of a water supply system, the highest level of dissatisfaction was in Takhtakupir district - 81.9% and only 52.3% is covered with piped water, and many of the existing water pipes in the remote communities are outdated and not functioning). JP also covers the Muynak and Chimbay districts in regards to supporting sustainable tourism development. During this period, the key activities undertaken contributed to the following outcomes of the project:

- Outcome 1. Improving community resilience by ensuring access to clean drinking water (UNDP).
- Outcome 2. Enhancing the social wellbeing of the rural population (including women/youth) through expanding income generation opportunities and promoting inclusive sustainable growth of tourism in Karakalpakstan (UNDP/UNESCO).
- Outcome 3. Promoting climate change adaptation actions through evidence-based afforestation initiatives (UNDP).

Overall, under **Outcome 1**, five infrastructure projects on water purification and supply of drinking water were implemented in the Takhtakupir district, for 3,491 beneficiaries in five rural communities:

1. The Tazakonis Community - 175 inhabitants
2. The Beltau Community Centre - 878 inhabitants
3. The Mulk Community - 1,178 inhabitants
4. The Marjankol Community - 525 inhabitants
5. The Janadarya Community - 735 inhabitants

The project has provided access to clean drinking water and has improved the relevant physical conditions of facilities which contribute to the overall improvement of the health and wellbeing of the local population in the Takhtakupir district of Karakalpakstan. Access to the clean water became more important during COVID-19 pandemic for people to improve hygienic and preventive measures.

A training module on WASH and brochures for the population on “Water, sanitation and hygiene” have been developed in Russian and Karakalpak. Electronic version of brochures disseminated to the heads of “Tazakonis” “Beltau”, “Mulk”, “Marjankol” and “Janadarya” communities for further dissemination among rural population. 150 people from five rural communities improved knowledge on WASH rules through organized online training. The project has enhanced the knowledge and skills of rural inhabitants of target communities on prioritizing needs and on the formulation of community development plans in organized trainings.

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<sup>3</sup> Resolution of the President of the Republic of Uzbekistan, # 4889, dated 11 November 2020

Under **Outcome 2**, JP created jobs and promoted entrepreneurship and tourism and enhanced social wellbeing of rural population. The JP has supported six business projects, including dentistry service development, milk processing, soap production, fodder production, halva/kozinaki production and reed slabs production businesses, with over 30 rural people now employed at these businesses. Over 60 women and youth have improved their entrepreneurship skills through series of trainings. Two trainings on development of heritage-based sustainable tourism and development of hospitality industry in Karakalpakstan. 62 tourism, nature and culture professionals, local communities, including women and youth, have been trained.

Two researches/assessments on development of sustainable tourism, including eco-tourism, and hospitality industry in Karakalpakstan have been carried out, including elaboration of new tourism destinations and products and formulation of set of recommendations in the respective fields.

Under **Outcome 3**, within the framework of measures for adaptation to climate change, SIC ICWC and the International Innovation Centre of the Aral Sea Basin under the President of the Republic of Uzbekistan (IICAS) have jointly conducted second scientific expedition to the dried seabed of the Aral Sea (first expedition was in 2019). As a result of these expeditions, more than 30 plant species from 1,500 different locations were identified, with recommendations to plant these on the dried seabed of the Aral Sea. Meanwhile a comprehensive report in the form of a book/publication ‘Monitoring of the dried seabed of the Aral Sea’ was developed in Russian and English for dissemination amongst project partners and potential donors. Based on assessment of the needs of the Takhtakupir Forestry Department, 17 types of machinery and equipment identified and most of which have been purchased and transferred for use by end 2020. These measures helped to plant drought-resistant saxaul plants on over 3000 hectares of land on the dried bottom of the Aral Sea and create a nursery on 49 hectares of land for growing seedlings from the plants and 58 hectares of pasture areas. Technical capacity of Takhtakupir forestry significantly being improved that increased efficiency of afforestation work, increased work volume in dried bed of Aral Sea and thus more income for the Forestry and more forestry employees were hired. Over 100 employees from 16 forestry departments increased knowledge on “Innovative methods of afforestation” in 2-day training organized jointly with IICAS. Obtained knowledge is to be disseminated among all forestry employees of the region.

A more detailed description of the project’s key results and achievements under each output is available below.

### **Outputs:**

Output 1.1. The water purification and distribution station at the Tazakonis community (in the Takhtakupir district) is fully functional (facility renovated and water purification equipment installed) (UNDP).

Output 1.2. The Beltau Community Centre in the Takhtakupir district has access to safe drinking water through the installation of water pipeline networks (UNDP).

Output 1.3. The Mulk community in the Takhtakupir district has access to safe drinking water through the installation of water pipeline networks (UNDP).

Output 1.4. Community-level capacities in the management of water purification and distribution stations improved through the establishment of a Drinking Water Association (DWA), and dissemination of knowledge and best-practices for upscale and replication.

**As Outputs 1.1, 1.2 and 1.3 have similar scope and sequence, the below is a consolidated description of key achievements:**

After meetings and consultations organized with the Takhtakupir district Khokimiyat and the District Water Supply Organization and community development plans developed initially three water projects identified and relevant estimation documents developed for water supply projects in Tazakonis, Beltau Community



Centre and Mulk communities. Based on Project estimation documents Bids conducted in early spring of 2020, contracted companies commenced the required construction works. In addition to the planned three water infrastructure projects, two water projects were implemented in Janadarya and Marjankol communities. All five infrastructure projects improved access to clean drinking water for 3,491 rural people, improved their health conditions. Photos 1 and 2 document the construction of the drinking water supply networks at the project site in the Beltau community. As reflected in the photos, the JP reconstructed existing water distribution facility, and installed 7,185 meters of water pipeline network which ensured an access of 639 rural people in 112 households to clean drinking water.



*Photos 1 and 2. Reconstruction of the water distribution facility and installation of the water pipeline network at the Beltau Community Centre*

Photos 3 and 4 illustrate the commissioning ceremony for the water cleaning plant and supply network of the Tazakonis community of another water infrastructure project. This initiative has provided access to clean drinking water for approximately 200 rural residents. The commissioning ceremony took place with the participation of a delegation which included the Permanent Representative of the Republic of Uzbekistan to the UN H.E. Mr. Bakhtiyor Ibragimov, the Permanent Representative of the Republic of Uzbekistan to UNESCO Mr. Umid Shadiev, the Permanent Representative of the Republic of Uzbekistan to the UN Office and other international organizations in Geneva Mr. Ulugbek Lapasov, and UNDP representatives in Uzbekistan. The procurement and delivery of artesian water purification equipment, and the reconstruction of the water purification compound was completed in late October 2020, resulting in 175 people in the Tazakonis community receiving access to safe drinking water by the end of 2020 and improvement of quality of their lives.



*Photos 3 and 4. Commissioning ceremony for the water cleaning plant and supply network of the Tazakonis community of the Takhtakupir district*

After installation of water pipelines at the Beltau Community Centre, 878 people have access to safe drinking water in Beltau. Currently rural community people consume safe and clean drinking water supplied by the water pipelines to households and women do not go far anymore to take/bring water to households.

Installation of water pipelines in the Mulk community improved lives of 1,178 people as their received access to safe drinking water.

**Output 1.4. Community-level capacities in the management of water purification and distribution stations improved through the establishment of a Drinking Water Association (DWA), and dissemination of knowledge and best-practices for upscale and replication.**

The establishment of the Drinking Water Association (DWA). Initially the project conducted a rapid, related analysis at the grassroots level. The project held three focus group discussions (FGDs) with community residents to compare their points of view on establishing the DWAs. The FGD findings noted that there are many factors such as the number of water consumers and collection fees, negotiations with the District Water Supply Department on ownership issues and deployment of department specialists in major maintenance works, and others, that require agreement between the DWA and respective local institutions. In-depth research on the establishment of the DWA was conducted. Based on the research analysis, establishing a DWA was considered to be impractical due to lack of wiliness to take ownership of water resources and management, with further technical maintenance of the water treatment facility which indicated sustainability of water supply is not secured and the function of the state water supply organization will be duplicated. Instead, it was recommended that financial resources utilized to realize additional water projects. As a result, two more sets of water purification equipment, with capacities of eight and ten cubic/meters per hour were purchased and installed at Marjankol community benefiting 525 people and Janadarya community benefiting 735 people directly.

Local specialists of district water distribution organization and community members (20 people) were trained who will carry on proper use, if necessary, maintenance of the installed water system, its effective use, and hygiene rules. Current approach will increase sustainability of the project.

Implementation of WASH procedures. 150 people from five rural communities were trained on proper sanitation and hygiene norms, while sanitation and hygiene materials were developed in Russian and Karakalpak (see photo 5) and disseminated to the five Village Council of Communities for further dissemination among rural population.



*Photo 5. Brochure on water sanitation and hygiene*

**Output 2.1. Six innovative small and medium enterprises established (led by rural youth and women) that produce marketable products for local and regional markets, while enhancing food security and strengthening economic security for the population of target communities (UNDP).**

Establishment of six innovative small and medium business projects created employment opportunities for rural youth and women, and enriched the local market with relevant products, which were not before produced and served locally. The project was affected by the COVID-19 pandemic and had some delays in implementing activities and procuring equipment. However, despite this fact, the project team continued to work and achieved the following results:

*Implementation of the new entrepreneurship development projects in a pilot district of Karakalpakstan through trainings and the provision of necessary equipment/machinery.* Six new income generation projects (three led by women) were selected for co-financing in a review committee meeting organized by JP. These included projects on fodder production, milk processing, straw mat/board production, soap production, halva-kozinaki production, and dentistry facility development. Procurements of necessary equipment for soap production and dentistry facility development were completed. Equipment for fodder production, milk processing, straw mat/board production and halva-kozinaki production projects is expected to be procured by the end of March 2021. Over 35 people are expected to benefit directly from new jobs and 5,537 people are expected to have access to goods produced and services provided.

*Enhancing rural entrepreneurs' management skills on value chain management, strategy formulation and taxation.* Twenty-five people (52 per cent women and youth) enhanced their skills through training on value chain management within the livestock sector and on fundamentals of business planning and entrepreneurship development. Twenty-five women and girls had training on the basics of entrepreneurship and business development. Twenty owners of SMEs in the Takhtakupir district had training on strategy formulation, value-chain analysis and taxation, while strategies were developed for five SMEs. A total of 70 people enhanced skills and those skills to be instrumental in developing businesses.

*Implementation of the new women's entrepreneurship development programme in the pilot district of Karakalpakstan through trainings for rural women from remote communities and the provision of necessary equipment/machinery.* Three business projects namely on soap production, halva-kozinaki production, and rural dentistry facility development led by women/girls. The three business projects are expected to create 15 new job places among women/girls. Relevant items of equipment for dentistry facility development and soap production projects were delivered at the end of 2020 (Photos 6 and 7). Equipment on halva-kozinaki production is expected to be procured by the end of March 2021.



*Photo 6. Dentistry income generation project*



*Photo 7. Soap production income generation project*

## **Output 2.2. Community-based tourism and eco-tourism in the Aral Sea region supported and piloted (UNESCO).**

Under this output, the project intends to strengthen the development of tourism in the region. The following activities were implemented in 2020:

*Building/developing the capacity of local communities and tourism professionals to adopt sustainable tourism production practices (using globally recognized sustainable tourism criteria).*

32 tourism, natural and cultural professionals, as well as representatives of local communities strengthened their capacities in the development of sustainable tourism in Karakalpakstan, based on natural and cultural heritage and trained by a leading international expert.

*Developing eco-tourism by building capacities of local communities and tourism professionals, and developing new tourist routes/destinations in Karakalpakstan.* Two research/assessment of the development of sustainable tourism in Karakalpakstan, including eco-tourism, carried out by national and international experts. Recommendations formulated and aimed at improving and developing both existing and new tourism, products and destinations in Karakalpakstan. They were also aimed to improve existing tourism infrastructure to meet international standards, marketing and management of the tourism sector in Karakalpakstan. Assessment results are expected to provide support to the tourism sector through various types of interventions (financial, institutional, legislative and regulatory) and related policies and measures across all different stages of the value chain (creation, production, marketing and participation).

An assessment of the potential of natural and geo-sites as tourism assets is being carried out by national experts. The assessment aims to strengthen the development of sustainable eco-tourism in Karakalpakstan based on natural heritage, including further recommendations for the establishment of geoparks in the region.

*Developing community-based tourism through the provision of consultations/development of recommendations for improving tourism infrastructure of existing hotels/home stays (guest houses, hostels, etc.) in Karakalpakstan, including of Muynak, Takhtakupir, Chimbay and other areas.*

Research/assessment of the development of the hospitality industry in Karakalpakstan is being carried out, including the elaboration of a set of recommendations for improving existing hotel service, management, and infrastructure, and development of new hotels, home stays, etc., that meet international standards while at the same time preserving the traditions of the Karakalpak people.

30 representatives of the hospitality sector (directors, senior managers, hotel business owners, and representatives from the State Committee for Tourism Development, including women and youth) increased capacities on the development of the hospitality industry in Karakalpakstan in organized five-day training.

*Raising awareness of the cultural and natural heritage of Karakalpakstan at the international level.*

The component on raising awareness about heritage and promotion of tourism in Karakalpakstan was delayed for implementation due to the COVID-19 pandemic in overall and because of the most of relevant specialists were affected. Current activity is to be implemented in 2021



*Photos 8 and 9. Development of tourism in Karakalpakstan (training and research)*

### **Output 3.1. Evidence base strengthened and international best practices applied to enhance the effectiveness of afforestation works on the dried Aral Sea seabed (UNDP).**

Under this output, the JP initiated two expeditions to the dried seabed of the Aral Sea to analyse the current situation, resulting in a set of practical recommendations presented in the form of a book (and a book summary), as well as technical support to local forestry institutions in their efforts to mitigate the negative environmental consequences of the crisis.

Monitoring the dried bottom of the Aral Sea (SIC ICWC and the International Aral Sea region Innovation Centre). The first complex expedition to the dried seabed of the Aral Sea region took place from 20 September 20 to 20 October 2019, and a second expedition was conducted in May-June 2020. The expeditions covered the southern part of the dried seabed, particularly the regions of Muynak and Adzhibay Bay (see Figure 1). The JP recruited a team of research experts and technical staff, comprised of one international and 12 national consultants, including ecologists, soil scientists, botanists, hydro geologists, and GIS and remote sensing specialists. The expedition travelled 5,350 km, collected 56 soil samples (Photo 10) and described 2,142 points on various surface classes. Figure 1 contains visual maps that present the expedition routes. Photo 12 shows land furrowing conducted for the further planting of desert plants in those territories.

The purpose of the expedition was:

- To determine state and dynamics of the area affected by drying, and the approximate classification of the landscape on the newly drained area using remote sensing observations;
- To assess the state of the landscape, soils, hydrogeological conditions, fauna and flora, and the state of vegetation, especially the artificial forest plantations of the entire drained territory;
- To determine the scale of development of desertification processes, changes in landscape classes and risk zones, in comparison with the state of the previous monitoring in 2005-2011;
- To develop recommendations for improving the ecological state and productive use of drained and reclaimed territory.



*Figure 1. Areas covered by the two expeditions*



*Photo 10. Soil surveys during the expeditions*



*Photo 11. Desert plants in furrows*

During the expeditions, more than 74 species of higher plants were identified (Photo 12) from over 2,060 different survey points of the dried bottom of the Aral Sea. These plants comprised 51 genera and 21 families, and represented the majority of vegetation cover.



Photo 12. Three of the 74 species identified during expedition vegetation surveys of the Aral Sea seabed

The key findings and recommendations of the two expeditions are provided in the book and a summarized version. A roundtable was organized to present and discuss the book on ‘Monitoring of the dried seabed of the Aral Sea’ with the participation of representatives of various organizations, scientists and experts in December 2020. Russian language versions of the book and the publication ‘A brief summary of the results of expeditions to the dry seabed of the Aral Sea in 2019-2020’ were printed. The cover pages of the book and its summary are presented in Figure 2 and Figure 3, respectively. English versions of the book and the summary are now being edited and proofread. When printing is completed, its distribution among partner organizations and donors will be organized.



Figure 2. Cover of the book ‘Monitoring of the dried seabed of the Aral Sea’

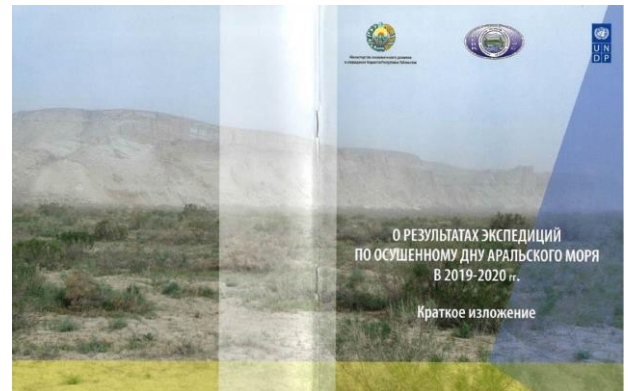


Figure 3. ‘A brief summary of the results of expeditions to the dry seabed of the Aral Sea in 2019-2020’

Over 100 afforestation specialists of the State Forestry Committee and its 16 branches improved knowledge on innovative methods of afforestation through organized, in cooperation with IICAS, a two-day training in December 2020 (held through the Zoom platform due to the COVID-19 lockdown). Based on identified needs on capacity building, afforestation specialists enhanced knowledge in the following four thematic areas:

- (i) Inventory of forested areas using GIS technology;
- (ii) Development and introduction of a system of measures for protecting the seeds of trees and shrubs against pests and diseases;
- (iii) Development of measures to promote the natural renewal of forestry crops in Tugai forests;
- (iv) Development and implementation of innovative methods of afforestation in drought prone areas.

Trained afforestation specialists are expected to share/disseminate knowledge on innovative methods of afforestation with local farmers, dehkans and pasture cooperative members among the districts. The project developed methodological guideline-brochures on: 1) Inventory of forested areas using GIS technology; 2) Development and introduction of a system of measures for protecting the seeds of trees and shrubs against pests and diseases; 3) Development of measures to promote the natural renewal of forestry crops in Tugai forests; and 4) Development and implementation of innovative methods of afforestation in drought prone areas in Russian and Karakalpak languages. Publication of those materials is expected in April-May 2021. See Figure 4 for draft versions of these brochures.



Figure 4. Brochures on afforestation

### Output 3.2. Technical and material capacity of relevant institutions involved in afforestation works improved in order to enhance the efficiency of work (UNDP).

The JP has worked to identify real needs for enhancement of technical and institutional capacity of relevant institutions in further improving afforestation measures in the Aral Sea area. As such, the project has compiled a list of the most essential machinery and technologies to create people-centred, favourable conditions to enhance the productivity, efficiency and effectiveness of afforestation works on the dried seabed. Based on assessment results the JP identified demand for 17 types of essential machinery and equipment, which included a mobile home to be used in remote areas during afforestation works, a welding machine on wheels, a bus truck, storage tanks on wheels for water and petrol, tents and sleeping bags. Bidding for procurement was completed in 2020. By the end of 2020, some of the machinery and equipment was delivered to the Takhtakupir Forestry Department, namely radio telephones for field communications, a truck for transporting seeds and seedlings, an excavator-bulldozer, mobile homes with diesel generators, heaters, air conditioning systems, and also tents, field ovens, tarpaulins and welding units on wheels. Food tanks on a trailer, a tanker trailer, a square baler, tractor trailers, tractors, long-base planner and excavation plows, are all expected to be delivered in April 2021.

These measures helped to plant saxaul in over 3000 hectares of land on the drained bottom of the Aral Sea against 100-150 hectares in origin, and create a nursery on 49 hectares of land for growing seedlings from drought-resistant plants against 2-3 hectares before. Additionally, 58 hectares of pasture lands were developed and 142 hectares are expected to be developed.

### Delays in implementation

During the reported period, the project encountered challenges associated with the COVID-19 outbreak and lockdown both within the country and globally, which affected the project implementation pace and caused a delay in delivering project activities. However, the project has proposed alternative options and modes of operation by proposing solutions for using online modes of work and adapting to the new lockdown situation.

## **Challenges:**

- The COVID-19 outbreak has rapidly spread to more than 100 countries. As observed, this pandemic has disrupted manufacturing and the global supply chain. Thus, in terms of the procurement of equipment and consumables in support of the project, some delays in delivering the activities and results have occurred;
- In spring and summer 2020 all field visits were cancelled and all offline/on-ground project activities changed to online modes of operation;
- Delays with identification of project sites due to the limited communication with potential beneficiaries and partners were common, especially at the beginning of the COVID-19 outbreak;
- The majority of project staff, as well as project partners, were affected by COVID-19 and were hospitalized (one project driver passed away);
- Delays occurred in vendor selection and contracting, as vendors were affected by the COVID-19 pandemic, with many having no experience or tools needed to sign contracts online. This caused a slowdown in the process of tasks such as obtaining commercial offers for services;
- Delays occurred in the procurement of equipment and items from abroad as the majority of equipment imported from sources including China and Turkey were stuck at the border at customs control points;
- Three contracts were extended/amended until the end of February 2021, due to the delay of services;
- Several capacity-building and awareness-raising activities on sustainable tourism development were postponed to 2021;
- Prices of some of the equipment and items increased due to transaction costs and additional transport costs;
- International expert trips on tourism development to Karakalpakstan were cancelled, with the activity having to be reorganized from an on-site to online format, including organization of trainings in the field of sustainable tourism development in the region.

## **Mitigation and adaptation measures taken by the project through the COVID-19 outbreak situation**

Facilitated some of project activities via an online remote mode:

- Conducted project trainings via Zoom;
- Coached document signers (contracted vendors and partners) to use digital instruments like DocuSign to sign contracts and other documents;
- Ensured that all PPE measures against COVID-19 were observed among project staff, and followed both in the office and in the project vehicles;
- Relevant project staff regularly communicated with vendors, and were updated on the status of the delivery of goods and services;
- Ensured proper communication with vendors on delays of services;
- The Project Board was informed of delays associated with the COVID-19 outbreak, and a proposal for the project to be extended until 31 August 2021 was supported and approved.



**Lessons learned:**

- Since Takhtakupir district is located in the most remote area water shortage remains the main problem in the district. Drinking water supply system and stations constructed in soviet era are worn out, more attention needed to be paid to providing access to quality drinking water;
- Project activity on the creation of the DWA has proved to be a duplication of the role of the District Water Department;
- To ensure the effective use of financial resources, the project conducted an assessment in regards to creating additional water projects;
- In accordance with recommendations, the project has transferred resources to the implementation of two water projects in the Janadarya and Marjankol communities, instead of the creation of the DWA;
- The majority of beneficiaries still lack access to the finance, premises and other infrastructure needed to launch entrepreneurship activities in rural areas;
- The programme/project duration (1-2 years) is not long enough to implement full scale entrepreneurship projects and ensure full ownership and sustainability of results;
- Monitoring of the results is needed.

**Best practices:**

- The Joint Programme applied an integrated and holistic approach to supporting the socio-economic and environmental needs of the Takhtakupir district by providing access to clean drinking water, creating income generation and employment opportunities, and supporting the Forestry Department in expanding afforestation works. This will increase the resilience of the Takhtakupir population to address their social, health, economic and environmental insecurities;
- Training on WASH was conducted online, enabling beneficiaries to participate remotely, thereby saving time while avoiding close gatherings of people during the pandemic. Electronic version of brochures shared with the heads of “Tazakonis” “Beltau”, “Mulk”, “Marjankol’ and “Janadarya” communities for further dissemination among rural population;
- 2-day training on Innovative methods of afforestation was conducted through Zoom platform without disruption of specialists from work in various parts of the region. Over 100 specialists enhanced knowledge in the four thematic areas, including usage of GIS technology in inventory of forested areas which was the first time among forestry specialist;

**Qualitative assessment:**

Overall, the project initiated all planned activities for 2020. Some results were achieved on time in 2020, but some activities had to be extended due to the impact of the COVID-19 outbreak. The project established sound partnerships with key stakeholders at regional, district and grassroot levels, and local communities have been fully engaged in implementing the project activities. This has been important for ensuring ownership of results, and ongoing local commitment and sustainability. Through its interventions at every stage, the project has promoted gender mainstreaming principles. When organizing initiatives, committees or panels, the project has ensured that the voices of the most vulnerable groups of the population, including that of women, youth and the elderly, were all represented and heard. Through community mobilization and target audience identification for entrepreneurship support and skill-building initiatives, the project engaged women and youth in communities. The One UN model was fully promoted through smooth coordination between UNDP and UNESCO, in terms of joint planning and implementation of activities.

## II) Indicator-based performance assessment

	Achieved indicator targets	Reasons for variance with planned target (if any)	Source of verification
<b>Outcome 1. Improving community resilience by ensuring access to clean drinking water (UNDP)</b>			Project estimation documents/prior to bids announcement. Purchase order (PO) contracts with subcontracted companies. Transfer documents.
Indicator 1.1. Number of functional Water Distribution Facilities (WDFs) in the Takhtakupir district. Baseline: 7 Planned target for 2020: 9	12		
Indicator 1.2. Number of the population with access to safe drinking water and improved sanitation service levels. Baseline: 20,644 Planned target for 2020: 22,875	24,135		Statistical data provided by the district municipality.
Output 1.1. The water purification and distribution station at the Tazakonis (Takhtakupir district) is fully functional (facility renovated and water purification equipment installed) (UNDP).			Community development plans/once per community project.
Indicator 1.1.1. Number of people with access to safe drinking water in the Tazakonis community. Baseline: 0 Planned target for 2020: 878 (Note: This number reflects the population of the Beltau Community Centre)	878		Semi-annual project progress reports. Field monitoring reports/once a month. Impact assessment reports/4 months prior to completion of project.
Indicator 1.1.2. Number of project estimation documents prepared for intended target projects. Baseline: 0 Planned target for 2020: 3	3		Annual reporting to Project Board. PO contract with Project Estimation Institute.
Indicator 1.1.3. Number of Water Distribution Stations fully renovated Baseline: 7 Planned Target for 2020: 9	10		Statistical data provided by the district municipality.
Indicator 1.1.4 Number of installed boreholes and repaired water cisterns for the water distribution station in Tazakonis community: Baseline: 0 Planned Target for 2020: - borehole: 1 - water cisterns: 2	1 3		Project estimation document. PO contract with subcontracted construction companies.

Output 1.2. The Beltau Community Centre in the Takhtakupir district has access to safe drinking water through the installation of water pipeline networks (UNDP).		Official statistical data provided by the district municipality.
Indicator 1.2.1. Number of people with access to safe drinking water in the Beltau Community Centre. Baseline: 0 Planned target for 2020: 175 (Note: This number reflects the population of the Tazakonis community)	175	
Indicator 1.2.2. Total metres of pipe laid in the community for water delivery. Baseline: 0 Planned target for 2020: 6,000	16,943	
Output 1.3. The Mulk community in the Takhtakupir district has access to safe drinking water through the installation of water pipeline networks (UNDP).		National consultants' reports.
Indicator 1.3.1. Number of people with access to safe drinking water in the Mulk community. Baseline: 0 Planned target for 2020: 1,178	1,178	
Indicator 1.3.2. Number of households of the community connected through the main water pipe. Baseline: 0 Planned target for 2020: 409	409	
Indicator 1.3.3. Number of public organizations with access to safe drinking water: including schools, kindergartens and rural health points. Baseline: 0 Planned target for 2020: - Schools: 3 - Kindergartens: 1 - Rural health points: 2	2 1 2	
Indicator 1.3.4. Number of Drinking Water Associations established. Baseline: 0 Planned target for 2020: 1	0	
		As per the result of assessment with community residents, Drinking Water Association is found to be impractical due to the lack of willingness of local people and it is likely to duplicate the functions of district water distribution organization. Instead, 2 more additional water projects implemented for the financial resources.

Output 1.4. Community-level capacities in the management of water purification and distribution stations improved through the establishment of a Drinking Water Association (DWA), and dissemination of knowledge and best-practices for upscale and replication.			Charter of DWA. Quarterly financial reports of DWAs. Training reports upon completion of each training.  National consultants' reports.  PO contract with publishing company.  National consultants' reports.
Indicator 1.4.1. Number of people trained on proper use of water system (proper maintenance of the installed water system, its efficient use, and recording of water consumption in target community Baseline: 0 Planned Target for 2020: 20	20		
Indicator 1.4.2. Number of people trained on proper sanitation and hygiene norms in target communities. Baseline: 0 Planned target for 2020: 150	150		
Indicator 1.4.3. Number of sanitation and hygiene booklets and information materials developed and distributed in the community. Baseline: 0 Planned target for 2020: 100	100		
Indicator 1.4.4. Number of articles and broadcasts produced that share project knowledge and best practices. Baseline: 0 articles, 0 broadcasts Planned target for 2020: 3 articles, 2 broadcasts	3 articles 2 broadcasts		
Indicator 1.4.5. Number of external stories on recognition achieved. Baseline: 0 stories Planned target for 2020: 4 stories	1		
<b>Outcome 2. Enhancing the social wellbeing of the rural population (including women/youth) through expanding income generation opportunities and promoting inclusive sustainable growth of tourism in Karakalpakstan (UNDP/UNESCO).</b>			Semi-annual project progress reports. Review Committee's meeting minutes. Project monitoring reports/monthly. Annual reporting to Project Board.
Indicator 2.1. Number of innovative small entrepreneurship initiatives supported in the Takhtakupir district. Baseline: 6 Planned target for 2020: 12	12		
Indicator 2.2. Number of job places created. Baseline: 30	35		

Planned target for 2020: 100			
Indicator 2.3. Percentage of jobs created for women. Baseline: 50 Planned target for 2020: 70 per cent	60		
Output 2.1. Six innovative small and medium enterprises established (led by rural youth and women) that produce marketable products in local and regional markets, while enhancing food security and strengthening economic security for the population of target communities while creating 70 job places (50 per cent are women and girls) (UNDP).			Semi-annual project progress reports. Training reports/upon completion of each training. Impact assessment reports - twice in project lifetime. Newly registered business entities' documents. Annual reporting to Project Board. Review Committee's meeting minutes.
Indicator 2.1.1. Number of unemployed people, including women and youth, selected for trainings. Baseline: 0 Planned target for 2020: 60	65		
Indicator 2.1.2. Number of thematic trainings conducted. Baseline: 0 Planned target for 2020: 3	3		
Indicator 2.1.3. Percentage of training participants who have initiated income generation opportunities based on acquired knowledge and skills within six months of training. Baseline: 0 Planned target for 2020: 30	20		
Indicator 2.1.4. Number of co-financed income generation projects. Baseline: 6 Planned target for 2020: 12	12		
Indicator 2.1.5. Number of new direct and indirect beneficiaries. Baseline: 0 Planned target for 2020: 70 direct and 1,000 indirect beneficiaries	42 direct 500 indirect		
Indicator 2.1.6. Number of new job places created for women and girls. Baseline: 0 Planned target for 2020: 35	7		
Output 2.2. Community-based tourism and eco-tourism in the Aral Sea			

region supported and piloted (UNESCO).			completion of each training. Communication materials- quarterly. Contracts with consultants and service companies. Articles and broadcast materials. Annual reporting to Project Board.
Indicator 2.2.1. Number of trainings conducted on tourism management. Baseline: 0 Planned target for 2020: 2	1		
Indicator 2.2.2. Number of Regional Tourism Development Committee staff and key stakeholders in tourism sector with enhanced tourism management capacity. Baseline: 0 Planned target for 2020: 60	32		
Indicator 2.2.3. Number of new tour routes developed in Karakalpakstan. Baseline: 0 Planned target for 2020: 2	0		
Indicator 2.2.4. Number of hotel and guest house managers and specialists trained in hospitality management. Baseline: 0 Planned target for 2020: 60	30		
Indicator 2.2.5. Number of new TV programmes and articles developed on cultural and natural heritage of Karakalpakstan: Baseline: 0 Planned Target for 2020: - TV program: 2 - article: 2	0 0		
<b>Outcome 3. Promoting climate change adaptation actions through evidence-based afforestation initiatives (UNDP).</b>			Bi-annual progress reports. Project monitoring reports. Training reports - upon completion of trainings. Annual reporting.  PO contract with vendors.
Indicator 3.1. Area of land afforested in desertified areas (ha) by the Takhtakupir Forestry Department. Baseline: 21,200 Planned target for 2020: 33,450	27,782		
Indicator 3.2. Area of lands (ha) in desertified areas afforested by three cooperatives in Takhtakupir district. Baseline: 0 Planned target for 2020: 3,750	3,607		

Indicator 3.3. Number of State Forestry Department representatives, pasture cooperative members, and local farmer and dehkans with enhanced knowledge and skills on innovative methods of afforestation. Baseline: 0 Planned target for 2020: 850	100 specialists trained. Knowledge disseminated to 700 farmers and dehkans.		PO contract with vendors.
Output 3.1. Evidence base strengthened and international best practices applied to enhance the effectiveness of afforestation works on the dried Aral Sea seabed (UNDP).			Project monitoring. Monthly reports. Mission monitoring report and laboratory analysis results upon study completion. Annual reporting to Project Board.
Indicator 3.1.1. Number of demonstration plots (forest plantation nurseries) set up by the Takhtakupir Forestry Department and three cooperatives to produce seedlings for 10,000 ha of plantation land. Baseline: 0 Planned target for 2020: 4	3		
Indicator 3.1.2. Area of land (ha) covered by demonstration plots (forest plantation nursery) by the Takhtakupir Forestry Department and three cooperatives. Baseline: 0 Planned target for 2020: 49 (Forestry Dept); 15 (in 3 cooperatives)	39 (forestry) 10 (cooperatives)		PO contract with vendors.
Indicator 3.1.3. Availability of research-driven data on soil composition of land on the dried seabed of the Aral Sea. Baseline: 0 Planned target for 2020: Full set of data including GIS mapping and remote sensing, as well as physical check results being available.	Book and summary publication with full set of data, GIS mapping and remote sensing.		Book and summary publication with full set of data, GIS mapping and remote sensing.
Indicator 3.1.4. Number of jobs created in established demonstration plots in cooperatives. Baseline: 0 Planned target for 2020: 20 (10 full time and 10 seasonal)	120 (18 full time)		
Output 3.2. Technical and material capacity of relevant institutions involved in afforestation works improved in order to enhance the efficiency of work (UNDP).			Baseline assessment report when project is initiated. Transfer of machinery and

<p>Indicator 3.2.1. Amount of machinery and equipment provided to the Takhtakupir Forestry Department and three pasture cooperatives (including mobile homes, mobile kitchen, special machinery, tree planting machine, furrow driller, excavation plows, tents, sleeping bags, and radio phones).  Baseline: 0  Planned target for 2020:  Two mobile homes;  One mobile kitchen;  Two special machineries;  Five tree-planting machines;  Ten furrow drillers;  Ten excavation plows;  Five tents;  Fifty sleeping bags;  Five radio phones.</p>	<p>2 1 2 0 0 2 6 11 4</p>	<p>As per result of the needs assessment conducted to improve technical capacities of Takhtakupir forestry, 17 types of machinery and items identified, which are slightly differ than in result matrix. Details can be found in the report.</p>	<p>equipment.  Field monitoring reports - once a month.  Impact assessments, delivered once.  Satisfactory survey report – produced by the end of the project.</p> <p>PO contract with vendors.</p>
<p>Indicator 3.2.2. Area of land (ha) with plantations supported by machinery and equipment.  Baseline: 0  Planned target for 2020: 1,500</p>	<p>3,822</p>		
<p>Indicator 3.2.3. Percentage of income increase for pasture cooperatives who have received support in the form of machinery and equipment.  Baseline: 0  Planned target for 2020: 20 per cent</p>	<p>25 per cent</p>		



### III) Specific stories

#### 1) Story on 'Access to clean drinking water'



The Tazakonis community is the most remote location of the Takhtakupir district. In this community, there was previously a water treatment plant built in the Soviet era that had since deteriorated and was no longer functional. Only one well was available, but its water contained a large amount of salt which did not meet human consumption standards, but was instead used for watering domestic animals. Local residents were forced to carry drinkable water from a neighbouring community where a water treatment plant had been established.

Within the UNDP/UNESCO JP, assistance was provided to residents of this locality. During community mobilization workshops, local residents unanimously identified the drinking water problem as being the highest priority, and approached the JP seeking practical assistance. The Beltau Community Centre had also experienced difficulties accessing clean drinking water. As part of the state programme, the existing water treatment plant at this locality had been reconstructed, but due to limited financial resources it was impossible to cover the entire territory of this locality with a pipeline, and many residents of more remote areas had to carry water from neighbouring streets. Local residents approached the JP with a request for its assistance in increasing the length of water supply lines in this locality.

The Village Council of Citizens (VCC) of the Mulk community is also in one of the remote localities of the Takhtakupir district. This VCC's community encompasses a large area with a great number of residents, many of whom have previously not had access to clean drinking water. During community mobilization workshops, residents asked the JP to assist in increasing the length of water supply lines to ensure access for all residents and rural citizens.

The JP studied the needs of local residents and decided to assist them in solving the priority problem of the lack of access to clean drinking water. Together with the district administration and local residents, a large-scale work programme was organized to implement water projects in these localities. Upon completion of tender selections, it was revealed that there were savings made while implementing these three projects. To meet the water needs of even more local residents, including those from other localities, the JP decided to provide two water treatment plants for the Janadarya and Marjankol communities of the Takhtakupir district. These communities were also included in state programs to ensure access to drinking water. In order to save the funds of the state programme, the JP proposed the delivery of water treatment plants at the

programme's expense, and the funds allocated for these installations should be used to enhance the scale of pipelines.

As a result, the JP successfully implemented five water projects instead of the three planned projects, thereby increasing the number of beneficiaries to 3,491 rural residents. In 2020, UNDP provided significant assistance in improving access to drinking water for residents of remote settlements of the Takhtakupir district, within the framework of the trust fund project. Rural women and their family members now have clean drinking water at homes, which saves much of time and energy than carrying from distanced area and improves health of people as well.

## 2) Story on 'Promoting the development of rural entrepreneurship initiatives'



Supporting women's entrepreneurial initiatives, as well as promoting gender equality through economic instruments under the concept of human security, has been the basis of UNDP's work in Karakalpakstan. Guided by this concept, the UNDP-UNESCO JP has supported the initiative of the 'Hurliman-Aru-Takhta' family enterprise to produce laundry soap. This business initiative was reviewed by the JP Selection Committee and was approved for co-financing. In December 2020 soap production equipment was delivered, and the workshop now produces over 600 units of laundry soap per day for residents of the Takhtakupir district, providing work for three young people and also the initiator of the business project.

The project initiator, Ms. Arukhan Seitmuratova, has described to us the production process and how she decided to engage in this entrepreneurial activity:

*"It all started with the fact that we were all unemployed, but also we had some experience in retail. From within our family, my husband, son, daughter and daughter-in-law had all been advised to open a family business and to launch a small level of production. We immediately opened the enterprise and named it after the female members of our family, plus the place where we live. That is why we ended up naming the enterprise 'Hurliman-Aru-Takhta',"* she said.

*"It was decided that, together with our family members, we would think about the product we would be producing. While we were thinking, life set everything in place. The outbreak of the pandemic pushed us to produce laundry soap, as on TV we were being told about the importance of washing our hands every 20 minutes. Plus, the local habits of the Takhtakupir district also proved beneficial to us, as here laundry soap is often used to wash both hands and our daily laundry. We quickly developed a project idea and submitted it to the contest of the UNDP Joint Programme, which we had heard about at a meeting at the khokimiyat."*

### 3) The two expeditions ‘key findings and recommendations’

The results of the needs assessment conducted in 2017 revealed that 46.9 per cent of respondents were dissatisfied with the environmental situation, with their main concerns being soil salinity (70.6 per cent), air pollution (12.7 per cent), water pollution (9.5 per cent), and drought (6.7 per cent). The assessment also determined that the main causes of environmental pollution included salt dust storms from the dried bottom of the Aral Sea, solid waste, pesticides and emissions from large enterprises. In turn, these processes had led to soil salinization and crop loss, and deterioration of the quality of drinking water.

Following from these findings, the project organized two expeditions. The first expedition took place during September and October 2019 and covered an area of 600,000 hectares. The second expedition took place during May and June 2020 and also covered an area of 600,000 hectares. These two expeditions therefore covered a total area of 1.2 million hectares of the southern part of the delta, including the territory from the Ustyurt Plateau Chink to the former Akpetka Archipelago and to the historic edge of the former sea. These expeditions were integrated and the expedition team included ecologists, soil scientists, hydrogeologists, dendrologists, botanists and GIS specialists. The expedition undertook several analyses of flora, soil and underground water conditions. The GIS remote sensing maps of the water surface, soil levels and landscape visualization incorporated physical analysis. The expedition report contained detailed results of the research. In terms of afforestation work planning, the expedition findings showed that most of the researched area from the Tiger's Tail to the Ustyurt Plateau Chink is often flooded, which creates an ecosystem for the natural renewal of tamarix, karabarak and other salt-resistant crop species.

The expedition findings have shown that, within the afforestation campaign, a vast amount of land furrowing should be conducted for further planting desert plants in those territories. The expeditions’ key takeaway recommendations to be applied during the implementation of afforestation works on the dried seabed of the Aral Sea included the following:

- The importance of delaying furrowing activities until the subsoil groundwater subsides and loamy soil formations appear, which will create a favourable environment for the development of the root systems of desert crops;
- If salt-resistant species are planted immediately after sand-accumulating furrowing, the premature planting on furrows with no accumulated sand will greatly reduce the survival rate of plants;
- The promising plant species that have been identified play a key role in sand and salt stabilization.

All findings and recommendations will be critical in organizing future work efficiently, including afforestation, in the dried bed of Aral Sea.

### **III. Programmatic revisions**

Programme applied for no-cost extension in the end of 2020 and was approved by MPHSTF for the extension period of 6 months from 28<sup>th</sup> February to 31 August 2021. The following outputs with planned targets for 2020 have been transferred to 2021:

- Output 2.1. Six innovative small and medium enterprises established (led by rural youth and women) that produce marketable products for local and regional markets (UNDP).
- Output 2.2. Community-based tourism and eco-tourism in the Aral Sea region supported and piloted (UNESCO).

- Output 3.1. Evidence base strengthened and international best practices applied to enhance the effectiveness of afforestation works on the dry Aral Sea seabed (UNDP).
- Output 3.2. Technical and material capacity of relevant institutions involved in afforestation works improved in order to enhance the efficiency of work (UNDP).

The project shifted around 25 per cent of overall targets initially planned for 2020 to the 2021 Annual Work Plan.