25 YEARS OF ACTIVITIES
INTERNATIONAL FUND FOR SAVING THE ARAL SEA AND NEW IMPULSES FOR DEVELOPMENT OF THE ARAL SEA REGION

AGENCY OF INTERNATIONAL FUND FOR SAVING THE ARAL SEA

Uzbekistan Kazakhstan Kyrgyzstan Tadjikistan Turkmenistan

AGENCY
OF INTERNATIONAL FUND FOR SAVING THE ARAL SEA FOR IMPLEMENTATION OF THE ARAL SEA BASIN AND GEF PROJECTS

25 YEARS OF ACTIVITIES OF THE INTERNATIONAL FUND FOR SAVING THE ARAL SEA AND NEW IMPULSES FOR DEVELOPMENT OF THE ARAL SEA REGION

2019

LIST OF ABBREVIATIONS AND ACRONYMS

ADB	Asian Development Bank
ASBP	Aral Sea Basin Assistance Program
BWO	Basin Water Organization
CA	Central Asia
CIS	Commonwealth of Independent States
EC IFAS	Executive Committee of the International Fund for Saving the Aral Sea
FAO	Food and Agriculture Organization of the United Nations
FS	Feasibility Study
GCF	Green Climate Fund
GGGI	Global Green Growth Institute
GIZ	German Society for International Cooperation
ICAS	Interstate Council on Aral Sea
ICSD	Interstate Commission on Sustainable Development
ICWC	Interstate Commission for Water Coordination
IDB	Islamic Development Bank
IFAS	International Fund for Saving the Aral Sea
IFI	International Financial Institutions
IWMI	International Institute for Water Management
IWRM	Integrated Water Resources Management
MM	Mass-Media
MPTF	UN Multi-Partnership Trust Fund for Human Security for the Aral Sea region in Uzbekistan
OSCE	Organization for Security and Co-operation in Europe
RCH	Regional Center for Hydrology
RGC	Rural gathering of citizens
RMC	Rural Medical Center
SDC	Swiss Agency for Development and Cooperation
SIC	Scientific Information Center
UN	United Nations
UNDP	UN Development Program
UNESCO	United Nations Educational, Scientific and Cultural Organization
Uzhydromet	Center of Hydrometeorological Service of the Republic of Uzbekistan
WB	World Bank
WHO	World Health Organization
WMO	World Meteorological Organization
WWF	World Water Forum

FOREWORD

Mismanagement based on the loss of human honor, morality and conscience is the main reason for ecological tragedy of the Aral Sea. The basis of the global environmental crises is not only the level and path of the national development, the society's ideology or religion, but, first of all, insufficient responsibility of mankind and society to nature.

The root of evil is that the environment was declared as a common property of people, i.e. a collective type of property. The life of society follows the economic (commercial) interests of the political elite. Mankind still considers the economic benefit as a priority and starts remembering the environment only when nature begins revenging.

The direct answer to the question, what caused the death of the Aral sea – is the development of agriculture and industrialization that are the main affecting factors resulting in the environmental crisis of the Aral Sea. Of course, doing those developments in 1930s-80s, the management of the Central Asian republics and the Soviet Union understood and knew that the Aral Sea would disappear if all water would be taken from the rivers. However, huge amounts of water have been taking from the two main rivers until 1990 (the last year of the Soviet era).

Taras Shevchenko. Schooners near Kos-Aral fort.
Watercolor on paper (20.6 x 30 cm). [Kos-Aral]. [6.X 1848 – 6.V 1849]

Possible death of the Aral Sea was first loudly announced in 1949 only A.Askoksky, Academician of the Academy of Sciences of Uzbekistan, who participated in the design of the Karakum Canal, wrote in the jubilee collection devoted to the 25th anniversary of the Uzbek SSR about the Amudarya flow use program under the Stalin's plan for nature restructuring in the USSR: «In time, the Aral Sea will disappear Due to such re-distribution of water in the Aral sea region. The regime of water sources will be changed by the upstream and midstream reservoirs, will have a positive effect on the climate. The sea surface, which evaporates use less water in the western part of the lowland, will move to the east, closer to the mountains, which should certainly moisten the climate of the foothill zone» (where the main population of the region is located).

The construction of the world's largest artificial Karakum canal and creation of huge irrigated areas throughout Central Asia – in accordance with the Stalin's plan for nature restructuring (approved by the USSR Council of Ministers on October 20, 1948) was declared as a victory over the desert! However, 40 years after, nature took revenge by creating new Aralkum desert.

Anthropogenic factors (the main of which include intensive irrigation and hydropower development), along with natural factors (aridity of the climate, i.e. combination of high air temperatures, high evaporation, and low precipitation) has resulted in the death of the Aral Sea. With the reduced flows of Amudarya and Syrdarya rivers into the sea, the latter was becoming shallow with fewer water amounts, and faster warming up, easier evaporation that has accelerated its drying.

The management of the USSR, under the pressure of the scientific community, tried to find a solution for saving the Aral Sea. To restore the dying Aral Sea in the 1980s, a project was developed to divert water from Siberian rivers, but these plans have not been implemented.

Since independence, the countries of Central Asia have abandoned the outdated socialistic economy and started to pursue a course towards the formation of a market economy based on sustainable principles and pay more attention to stabilizing the environment.

Convoy of ships

Storm at the sea

CRISIS OF THE ARAL SEA

The Aral Sea, being unique, beautiful and one of the largest inland water bodies in the world, has almost disappeared within one generation's life, resulted in unprecedented disaster and irreparable damage to the life of more than 60 million residents, the ecosystem and biodiversity of the Aral Sea region and adjacent territories.

The Aral Sea with its significant water surface (over 69,790 km²) and water volume of about 1080 km³, functioned until the mid-1960s as a climate control reservoir and mitigated acute weather fluctuations in the Central Asian region. Coming to the region, mainly from the west, the air masses warmed up in winter, and cooled in summer over the water aquatory of the Aral Sea. Due to this temperature regime, the moisture carried by air flows precipitated over the mountains of Tien Shan and Pamir in autumn-winter period, replenishing the snow cover and glaciers.

The average annual water balance of the Aral Sea calculated by A.E.Asarin for the period 1926-1969 (until dramatic level drop) is as follows:

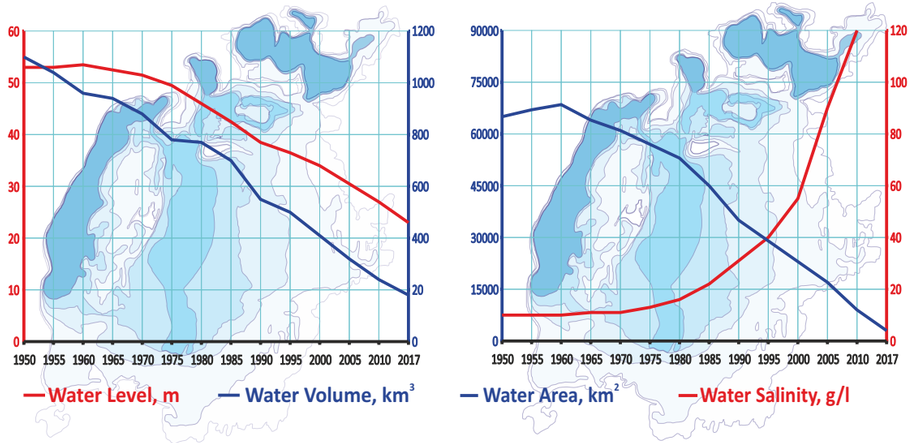
Inflow:	km³	mm
Precipitation	8,7	130
Surface inflow	54,5	820
Sea level fluctuations	0,6	9
Outflow:		
Water evaporation	63,8	955

Since 1960, due to intensive irrigation and hydropower development in the Aral Sea basin, the total water consumption in the Amudarya and Syrdarya basins has been rapidly increasing due to regulation and non-returnable intake of surface flow: 7.7 km³/year in 1961-1965; 17 km³/year in 1966-1970; 30 km³/year in 1971-1975 and up to 50 km³/year or more at the end of the 80s. Thus, since 1960, the negative sea water balance has become the norm and, in 1970-1990, the annual balance deficit exceeded 30 km³. The formation of such big sea balance deficit is also largely caused by climatological factors – in 1970s water availability in the Amudarya and Syrdarya rivers was 20-25% lower than normal values, and the total renewable water resources of the Aral Sea were less by 20-25 km³/year than before.

Water Balance of the Aral Sea, km³/year

Time period	Water inflow		Losses for Evaporation	Balance
	Rivers flow	Precipitation		
1911-1960	56,0	9,1	66,1	-1,0
1961-1970	43,3	8,0	65,4	-14,1
1970-1980	16,7	6,3	55,2	-32,2
1981-1990	3,9	6,2	43,7	-33,6
1991-1994	21,0	4,6	33,6	-8,0
1995-2002*	4,81**	3,5	28,6	-20,29

* Estimations of the Institute of Geography of Academy of Sciences of Kazakhstan;
** inflow to the Small Sea

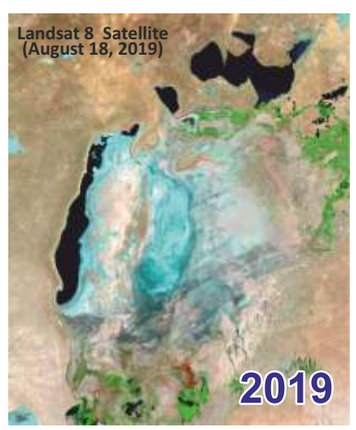


In 1989 the Aral Sea was split into the North and South as a result of water level drop and drying out of the Berg Strait. By late 1990s, the Great (Southern) Aral Sea turned into a hypersaline water body. Salinity in 1997 was 57 ‰ (ppm). In 1997, Barsakelmes island merged to land, in 2001 – Vozrojdenie island.

In 2003, the South Aral Sea was spilled into eastern and western parts connected by a narrow strait Uzun-Aral, located at 29 m asl. Such location does not allow water mixing from two water bodies. In 2004, the small lake Tuschibas, which was previously the eponymous of Gulf of the Aral Sea, was separated from the Eastern part. In 2005, the Small Aral Sea was separated from the Great Sea by the Kokaral dam in Kazakhstan. Both water bodies were finally separated.

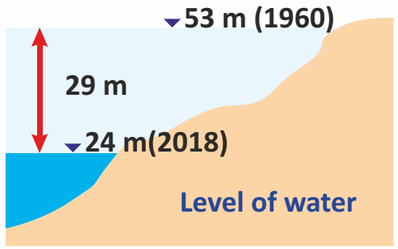
The Kokaral dam, crossing Berg Strait between the North Aral Sea (Small Sea) and the South Aral Sea (Big Sea), was designed to regulate water level in the Small Sea. The dam length is 13,034 m, width is 100-150 m. The height of the dam crest is 6 m (45.5 m asl), impoundment of the Small Sea is expected up to 42.2 m asl. Weir with nine spillways of 600 m³/s was built on the dam to release excess Syrdarya water to the South Aral.

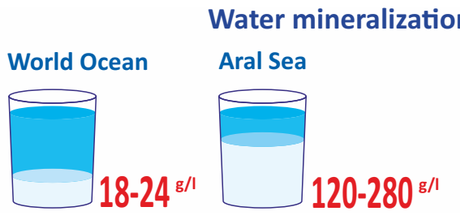
Kokaral dam with regulating structure (view from the south)

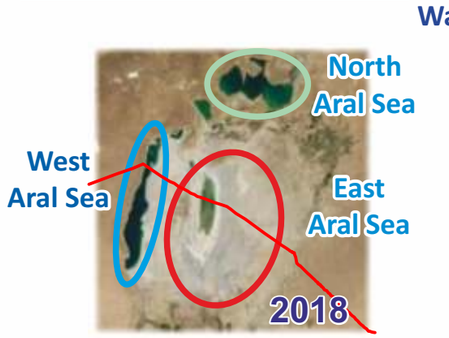


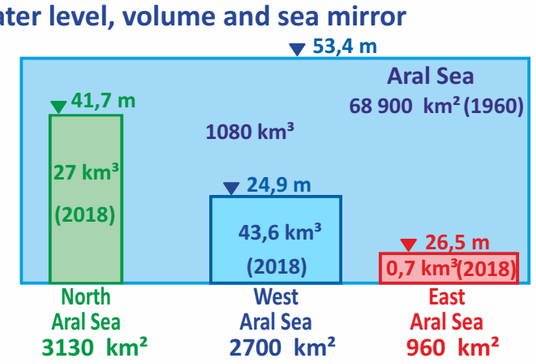
Today, the surface area of the remaining parts of the Aral Sea is less than 10% of the area in 1960. It is distributed between three water bodies – the Western Sea with area of 3,270 km2, the Eastern Sea with area of 0.960 km², and the Small (Northern) Aral with area of 3,400 km². Accordingly, the amount of water has reduced by almost 15 times.

For the full restoration of the Aral Sea, 1080 km³ of water (sea level in 1950s) plus about 50 km3 annually will be required to compensate evaporation losses. The total annual flow of the Amudarya and Syrdarya rivers is about 120 km3. Thus, to fill the sea until the initial level, all economic activities in the basin must be terminated for at least 30-40 years that is actually unrealistic!









At the time of the global climate change, the disappearance of the Aral Sea has resulted in fact that since 1980s the warming rate in the basin region exceeds the rate of global warming by more than twice. In general, it can be unequivocally said that climate change in the region has resulted in:

increased intensity of the dry hot period, in turn, resulted in increased evaporation in plains and foothills;

high variability of precipitation with an increased number of days with heavy precipitation.

increased frequency of extreme events, droughts and water deficiency.

Due to changes in the temperature regime, the structure of atmospheric moisture transfer over the territory of Central Asia has also changed. At the same time, precipitation has occurred mainly during the warm period of the year, resulted in a reduced area of mountain glaciers of the Pamir and Tien Shan (the rate is 0.2%-1% per year). Snow cover in the mountain river basins

of the region trends to be reduced, resulting in deteriorated available of water for agriculture.

The results of Uzhydromet's forecasts show that by 2050 the volume of river runoff in the Amudarya and Syrdarya river basins will be reduced by 10-15% and 2-5%, respectively. The number of dry years and the number of years with drought will grow with the loss of runoff as low as 25-40%. This will cause a drastic increase in water demand and aggravate water deficit. Meanwhile, This will require an increase of the irrigation rates by 5% in 2030, 7-10 % in 2050 and 12-16% in 2080. If water demand is not met, this can cause crop losses, which, considering the population growth, will represent a serious risk to food security and restrict sustainable development.

Drying of the Aral initiated desertification process in the center of the belt of great Kyzylkum and Karakum deserts, where new Aralkum desert was formed. The danger of this new desert includes the fact that the seabed, which in its natural state was a kind of desalination plant, now is acting as an artificial «anthropogenic volcano», emitting huge salt and fine dust masses o into the atmosphere. The pollution effect is enhanced by the fact that the Aral Sea is located, as it was already mentioned, on the route of a strong airflow from west to east. This contributes to the emission of aerosols into the high layers and their rapid distribution in the atmosphere.

Bed of the dried Aral Sea

Field surveys of the dried seabed show that the most developed soil is dehydrated mirabilite (easily weathered by wind) which formed as a result of dehydration of the former bed. Such soil covers about 250km2 of the dried area (i.e. more than 50%). The observations showed that 1.5–2 cm of this soil is deflated every year. At the same time instead of the blown hydrated lime new one is formed which is blown away by wind into the atmosphere.

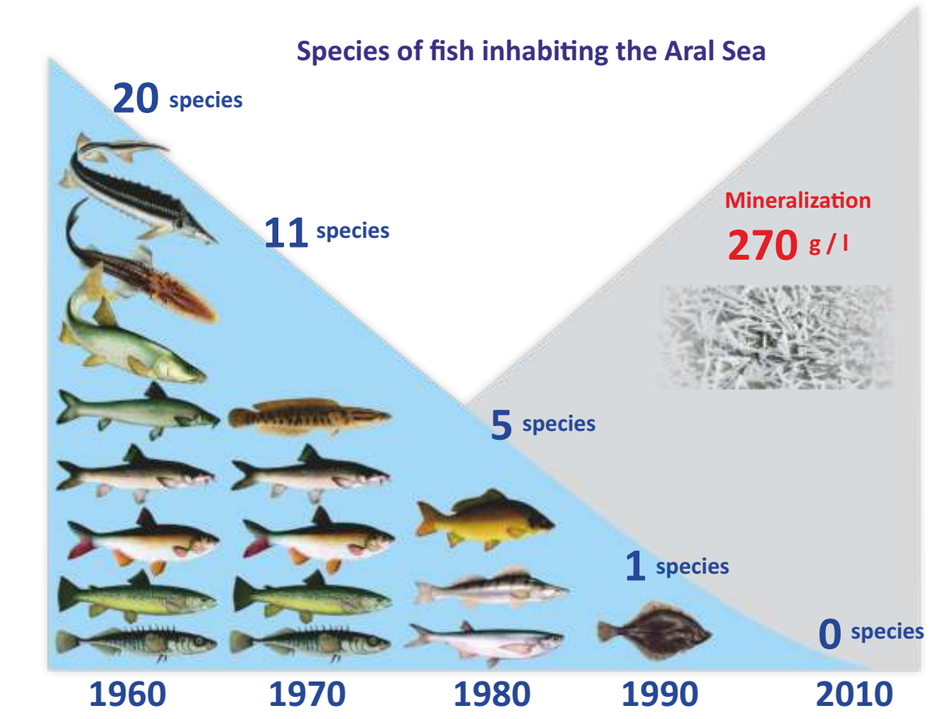
The Aral Sea Region was distinguished by unique variety of flora and fauna; the number of the only saiga reached 1 million heads, the floristic composition was 638 species of higher plants. However now, due to the disappearance of the sea and the degradation of its ecosystems, the number of plants growing here and the wildlife population are rapidly decreasing. 12 species of mammals, 26 species of birds and 11 plant species are almost disappeared.

Extinct species

Endangered species

Until the 1960s, the Aral Sea was the largest fishery basin in Central Asia with an annual catch of up to 40,000 tons of fish (mainly carps, but also sturgeons). For comparison: all water bodies in Uzbekistan (excluding fish ponds) annually produced in total about 8,000 tons of fish. Since 1980, the Great Aral has completely lost its commercial fishing importance.

Due to loss of the transportation importance of the sea, decay of fishing, livestock and other types of economy, reduction of pastures and decline of land productivity, dozens of thousands people have lost their traditional livelihood sources.



Pollution of water and a large amount of salt and dust emitted from the dried sea bed contribute to the growth of several serious diseases observed among the population of the Aral Sea Region such as anemia, kidney, blood, gastrointestinal, respiratory, cardiovascular, gallstone and other diseases. Children are heavily affected by a particularly negative impact of dangerous environmental situations. The dioxin content in the blood of pregnant women and milk of nursing mothers in Karakalpakstan is 5 times higher than in Europe.

According to WHO experts, about 23% of all diseases and 25% of all cancers are caused by environmental factors. The independent international humanitarian organization Médecins Sans Frontières surveyed 2001-2002 and found a high prevalence of multidrug-resistant tuberculosis in the Republic of Karakalpakstan (13% new and 40% of recurrent cases).

Photo: Alexander Gerst, USA

ISS image of the Aral Sea taken in July 2018

Photo: Guli Mina, Australia

Western Aral in November 2018

ACKNOWLEDGMENT OF THE ARAL SEA TRAGEDY AS A GLOBAL PROBLEM

Since the 1990s, Kazakhstan and Uzbekistan, as the most affected countries experiencing the disastrous consequences of the Aral Sea disaster, using a tribune of the United Nations and other international and regional organizations have constantly attracted attention of the world community to the Aral Sea problem and its close relationship with regional and global security issues.

In 1992, the President of Kazakhstan Nursultan Nazarbayev addressed to the leaders of Central Asian countries: *«The environmental disaster caused by the death of the Aral Sea is of a planetary nature, therefore Kazakhstan has come forward with the initiative to hold a respective conference of the Heads of State interested in eliminating the disaster».*

On August 28, 1992, the International Scientific and Practical Conference on the problems of the Aral Sea Region was held in Nukus, at which an appeal was made to the Presidents, parliaments and the public of Central Asian states and other CIS countries on the need to establish the International Fund for the Aral Sea problems and sign an agreement on the Aral Sea basin, legal and regulatory documents on water resources management.

Nursultan Nazarbayev, First President of the Republic of Kazakhstan, was elected as the President of IFAS.

At a meeting of the Heads of State of Central Asia in Kyzylorda on March 26, 1993, «Agreement on joint actions to resolve the problems in the Aral Sea region, environmental rehabilitation and ensuring the socio-economic development of the Aral region» was adopted, and the Regulation on the International Fund for Saving the Aral Sea (IFAS) was signed, which was the date of IFAS formation.

On July 13, 1993, at the first IFAS meeting in Tashkent, the «Concept of Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan on resolving the problems of the Aral sea region taking into account the socio-economic development of the region (main provisions)» was adopted. This document argued that «the full restoration of the sea up to water level of 53 m requires the annual supply of 65 km3 of water to the Aral Sea without taking into account the requirements of the delta. It is obviously difficult proposal to implement. But the restoration of the sea is not minimization of all troubles that have already affected the environment, and the desertification process is intensively going on, moving the sea more away from the settlements, thereby more affecting the economy and aggravating the difficult living conditions of the population».

Now, the most important task is to reduce the destructive impact of the Aral Sea crisis on the environment and the livelihoods of millions of people living in the Aral Sea region, including through the implementation of carefully elaborated, targeted and adequately financed projects.

Islam Karimov,
First President of the
Republic of Uzbekistan

At the 48th session of the UN General Assembly in New York on September 28, 1993, the first President of Uzbekistan, Islam Karimov, had a speech. In particular, he said: «*Considering the actually global scale of the disaster, Uzbekistan would welcome the creation of special UN Commission on the Aral Sea issued, which, in agreement with the governments of the region and through the capabilities of the UN, would attract international forces and resources to resolve this environmental tragedy*».

Upon the initiative of the first President of Uzbekistan Islam Karimov the Program of measures to eliminate the consequences of drying up the Aral Sea and prevent the disaster of ecosystems in the Aral Sea region was distributed as an official document of the 68th session of the UN General Assembly in September 2013, which included implementation of the following important measures:

1. Creating conditions for living, reproduction, and preservation of the gen fond in the Aral Sea
2. Improved management and rational use of water resources. Maintenance of the system of natural bodies in the Aral Sea;
3. Implementation of large-scale measures for forest plantations on the dried bottom of the Aral Sea and the prevention of desertification in the region;
4. Biodiversity conservation, restoration of biological resources, protection of flora and fauna;
5. Further improvement of the institutional framework and strengthening of cooperation of the countries of the region within the IFAS.

In April 2010, UN Secretary-General Ban Ki-moon, accompanied by the Prime Minister of the Republic of Uzbekistan, got acquainted with the environmental situation in the Aral Sea region.

In September 2015, at the 70th session of the UN General Assembly on the adoption of the development agenda, the President of Kazakhstan, Nursultan Nazarbayev, said: «*The problems of disappearing of the Aral Sea pose a threat not only to our region but to the whole world. As a result of its drying, the wind annually raises to 75 million tons of dust and poisonous salt, which are already found in Europe and Antarctica. With the support of the World Bank, we were able to restore the northern part of the Aral Sea. We are actively cooperating with the UN and the international community in the*

UN Secretary-General Ban Ki-moon, accompanied by the Prime Minister of the Republic of Uzbekistan Shavkat Mirziyoyev at a meeting with residents of Muynak (2010)

UN Secretary-General Ban Ki-moon (April 4, 2010):

«Having seeing the consequences of the environmental crisis in the region, I personally convinced of the complexity of environmental situation in the Aral Sea Region. This is a serious warning for all mankind. This global problem must be solved jointly by all states of the region».

rehabilitation of the former Semipalatinsk nuclear test site. Central Asian countries are awaiting assistance to tackle these environmental problems in the region».

In June 2017, UN Secretary-General António Guterres visited Karakalpakstan during his visit to Uzbekistan. On June 10, Guterres flew around the Aral Sea by helicopter, and also visited Muynak, where he talked with the local population.

On September 19, 2017, the President of Uzbekistan Shavkat Mirziyoyev spoke at the 72nd session of the UN General Assembly, talking about the key areas of domestic and foreign policy of Uzbekistan. Touching upon the complex and global topic of water resources, Shavkat Mirziyoyev once again emphasized the need for a compromise approach to this problem under the auspices of the UN, taking into account the interests of all countries in the region.

António Guterres, the United Nations Secretary-General (June 10 2017):

«Let the Aral Sea be a symbol of the destruction of the planet by humanity, and let this be a lesson for all of us to mobilize the entire international community in the implementation of the Paris agreement on climate ... that the tragedies, similar to that I saw in Uzbekistan, haven't repeated».

UN Secretary-General António Guterres, accompanied by the Prime Minister of the Republic of Uzbekistan Abdullah Aripov at a meeting with residents of Muynak (2017)

The President of Uzbekistan especially drew the attention of the world community to the tragedy of the Aral Sea, demonstrating a map of the dried sea for clarity. He called for continuing the program of assistance to residents of the region affected by this natural disaster, and jointly resolving the environmental problem that arose.

President of the Republic of Uzbekistan Shavkat Mirziyev on 19 September 2017 addressed the 72nd session of the United Nations General Assembly:

«I have a map of the Aral Sea tragedy in my hands. I think it speaks for itself. Remedial actions for preventing the sea drying require an active consolidation of international efforts»

INTERNATIONAL FUND FOR SAVING THE ARAL SEA

PLATFORM FOR SOLUTIONS

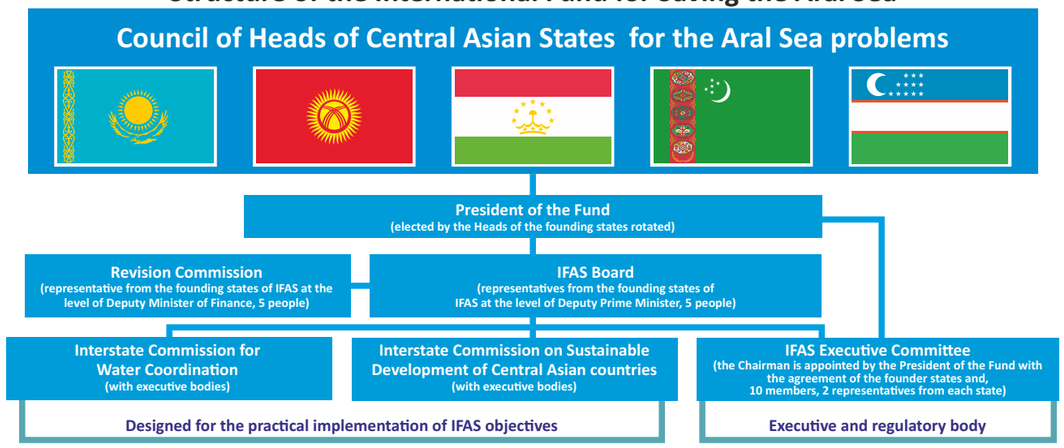
The International Fund for Saving the Aral Sea (IFAS) was established on March 26, 1993 at the meeting of the Heads of Central Asian States in Kyzylorda (Kazakhstan). The IFAS' structure was approved based on the Agreement between the Republic of Kazakhstan, the Kyrgyz Republic, the Republic of Tajikistan, Turkmenistan and the Republic of Uzbekistan on the status of IFAS and its organizations, Ashgabat (Turkmenistan) (signed on April 9, 1999).

Founding States of the International Fund for Saving the Aral Sea: Republic of Kazakhstan, Kyrgyz Republic, Republic of Tajikistan, Turkmenistan and the Republic of Uzbekistan

IFAS consists of six main subdivisions:

- Board of IFAS.
- Revision Commission.
- IFAS Executive Committee
- Branches of the Executive Committee of IFAS in Central Asian states.
- Interstate Commission for Water Coordination (ICWC), ICWC Secretariat, ICWC Scientific Information Center (SIC ICWC) and two Basin Water Organizations (BWOs) «Amudarya» and «Syrdarya».
- Interstate Commission on Sustainable Development (ICSD), ICSD Secretariat, Scientific Information Center at the Institute of Deserts of Turkmenistan (SIC ICSD).

Structure of the International Fund for Saving the Aral Sea



Council of Heads of the Founding States of IFAS

The Council is the supreme body of IFAS; meetings of the Council are held by agreement between the Heads of the founding states.

President of IFAS

IFAS is headed by the President elected among the Presidents of Central Asian states for 3 years. Over the 25-year history of the Fund, the Presidents have been elected as follows:

The President of the Republic of Kazakhstan Nursultan Nazarbayev (1993-1996)

The President of the Republic of Uzbekistan Islam Karimov (1997-1999)

The President of Turkmenistan Saparmurat Niyazov (1999-2001)

The President of the Republic of Tajikistan Emomali Rakhmonov (2002-2008), (his presidential period has been extended due to the refusal of the Kyrgyz Republic to accept the leadership of IFAS)

The President of the Republic of Kazakhstan Nursultan Nazarbayev (2009-2012)

The President of the Republic of Uzbekistan Islam Karimov (2013-2016)

since 2017, the President of Turkmenistan Gurbanguly Berdimuhamedov.

Location Executive Committee of IFAS

The President of the Republic of Uzbekistan Shavkat Mirziyoyev and the President of Turkmenistan Gurbanguly Berdimuhamedov at the meeting on March 6, 2017 noted:

«The need to restore the ecosystem of the Aral Sea basin, improve the socio-economic and environmental situation in the Aral Sea region, as well as the rational use of water resources and ensure a high level of environmental protection in the region».

IFAS Board

The Fund is managed by the Board, which includes the Deputy Prime Ministers of the IFAS founding states. The Board of the Fund meets at least twice a year. Founding States may propose additional meetings of the Board. The last meetings of the Board were held in Ashgabat on January 30 and August 23, 2018. Deputy Prime Minister Sukhrob Kholmuradov is member of the Board on behalf of Uzbekistan.

IFAS Revision Commission

The commission is entrusted with the function of verifying the financial activities of the Fund. However, due to the fact that the Fund does not accumulate the general funds of the founding states, and each founding state finances its projects as its contribution to the activities of the Fund, the Commission is still being created, but its meetings have not been held.

The Revision Commission is delegated by one representative from each of the founding countries at the level of deputy ministers of economy and finance, responsible for budget contributions to the Fund. In January 2018, Deputy Minister of Finance Anvar Karimov was appointed as a member of the commission on behalf of Uzbekistan.

The Executive Committee of IFAS (Executive Committee of IFAS) is a permanent body of the Fund and is created by the decision of the President of the Fund, and located on the basis of rotation in the country presiding in the Fund. The IFAS Executive Committee consists of 10 members – two representatives from each of the founding countries. The IFAS Executive Committee is managed by the Chairman, who is appointed by the President of the Fund in agreement with the Heads of the founding states.

At present, the Chairman of the IFAS Executive Committee is Guizgeldi Baijanov (before that, he was the Minister of Water Resources of Turkmenistan). Ilhom Zhurayev was appointed as member of EC IFAS from Uzbekistan (before that, he was Deputy head of the Uzvodremekspluatatsiya National Association under the Ministry of Water Resources).

Regulation on the Executive Committee of IFAS is approved by the decision of the President of the Fund. The main tasks of the IFAS Executive Committee are:

- practical implementation of decisions of the Heads of State;
- implementation of relevant projects and programs of the Aral Sea basin;
- coordination of the branches activities in the territory of the founding states;
- promotion of ICWC and ICSD activities;
- cooperation with international organizations, donor countries, environmental and other funds to enhance activities to address environmental issues;
- attract the funds for project and program management;
- preparation of documents and meetings of the IFAS Board, as well as conferences and meetings of the Heads of State on the problems of the Aral Sea.

The Executive Directorate of the International Fund for Saving the Aral Sea in the Republic of Kazakhstan is an international organization whose main goal is to solve the problems in the Kazakh part of the Aral Sea, advocating for positive changes in the life of the Aral Sea population by improving environmental and social conditions. The IFAS Executive Directorate in the Republic of Kazakhstan contributes to the implementation of projects in the water, environmental and socio-economic areas.

Agency of the International Fund for Saving the Aral Sea is a structural unit and working body of IFAS. In its activity, the Agency is guided by the «Regulation on the IFAS Executive Committee», approved by the President of the Fund, Decisions of the President of the Fund, the Board of the Fund, orders and decrees of the IFAS Executive Committee, as well as the legislation of the Republic of Uzbekistan. The Agency of IFAS is accredited by the Ministry of Foreign Affairs of the Republic of Uzbekistan as a representative of an international intergovernmental organization – the IFAS Executive Committee.

The Agency of IFAS together with the Nukus branch of the EC IFAS ensures the management of projects in the Aral Sea basin, implemented at the expense of all types of sources of financing and contributions coming at its disposal for these purposes, including those allocated from the budget of the Republic of Uzbekistan (as a contribution of the Republic of Uzbekistan to IFAS).

Regional Center of Hydrology – goals and objectives:

- Providing decisions of the IFAS Board on the problems of the Aral Sea basin;
- Improving the system of hydrological forecasting and data exchange between the National Hydrometeorological Services and strengthening regional cooperation;
- Implementation of measures to create a hydrometeorological monitoring network (stations, posts);
- Enhanced interaction with international organizations, donor countries, and other foundations.

The Interstate Commission for Water Coordination (ICWC) was created in accordance with the Agreement «On Cooperation in Joint Management and Regulation of the Use and Protection of Water Resources of Interstate Water Sources» dated February 18, 1992. ICWC is a regional body of IFAS for the joint resolution of issues on management, rational use and protection of water resources of interstate sources in the Aral Sea basin. The ICWC's executive bodies are the Syrdarya Basin Water Organizations (Tashkent) and Amudarya (Urgench), the ICWC Secretariat (Dushanbe), the ICWC Scientific Information Center (Tashkent) and the ICWC Coordination and Metrology Center (Bishkek).

During the meeting of the President of Kazakhstan Nursultan Nazarbayev and the President of Uzbekistan Shavkat Mirziyev on March 23, 2017 in Astana it was highlighted:

«Again we have reached a common opinion that the International Fund for Saving the Aral Sea is a key platform facilitating the solution of problems and cooperation between the countries».

The Interstate Commission on Sustainable Development (ICSD) – was created in accordance with the «Agreement on joint actions to solve the problems of the Aral Sea and the Aral Sea region, environmental recovery and ensuring the socio-economic development of the Aral region» of March 26, 1993 in Kyzylorda.

The main goal of the commission is to develop proposals for the improvement and socio-economic development of the Aral region, the social protection of the population living there, organization of scientific research, and the environmental cooperation among Central Asian states. The commission consists of 15 members – 3 from each Central Asian states (Ministers of environmental protection, Deputy Ministers of economy, representatives of science and other industries), appointed by the governments of the countries. The chairmanship of the ICSD is carried out by the ministers of environmental protection on a rotational basis for 2 years.

Chronology of Formation and key events of IFAS, as well as meetings of the Heads of Founding States

19.09.1988 Moscow (USSR)

Decree of the Central Committee of the Communistic Party of the USSR and the Council of Ministers of the USSR "On measures to radically improve the environmental and sanitary situation in the Aral Sea region, increase the efficiency of use and strengthen the protection of water and land resources in its basin".

A report of the Governmental Commission «Current Status and Proposals for a Radical Improvement of the Ecological and Sanitary and Epidemiological Situation in the Aral Sea Region and Downstream Amudarya and Syrdarya Rivers» has been published.

10.08.1992 Almaty (Kazakhstan)

The President of the Republic of Kazakhstan Nursultan Nazarbayev received the Secretary-General of the International Federation of the Red Cross and Red Crescent Society, Per Stenbek:

«The environmental disaster caused by the death of the Aral Sea is planetary in nature, so Kazakhstan has come forward with the initiative to hold an appropriate conference of the Heads of State interested in eliminating the disaster».

28.08.1992 Nukus (Uzbekistan)

International scientific-practical conference on the problems of the Aral Sea region.

Appeal to the Presidents, parliaments and the public of the countries of Central Asia and other CIS countries on the need to create an International Fund for the Aral Sea problems and sign an agreement on the problems of the Aral Sea basin, legal and regulatory documents on water resources management.

04.01.1993 Tashkent (Uzbekistan)

The meeting of the Heads of State: the President of the Republic of Kazakhstan Nursultan Nazarbayev, the President of the Kyrgyz Republic Askar Akayev, the Chairman of the Supreme Council of the Republic of Tajikistan Emomali Rakhmonov, the President of Turkmenistan Saparmurat Niyazov, the President of the Republic of Uzbekistan Islam Karimov.

Joint Communique of the Heads of Central Asian States.

The decision to create the International Fund for Saving the Aral Sea (IFAS).

Meeting of the Heads of the Founding States of IFAS (Tashkent, 1993)

26.03.1993 Kyzylorda (Kazakhstan)

Meeting of the Heads of State of Central Asia:

The Interstate Council on problems of the Aral Sea Basin (ICAS) was formed, including 25 persons (five from each state). ICAS has created a permanent working body – the Executive Committee (EC ICAS), located in Tashkent. Besides, the Commission on Sustainable Development (ICSD) and the Interstate Commission for Water Coordinating (ICWC) were formed at the ICAS.

The Regulation on the International Fund for the Aral Sea Saving was approved, the Board of the Fund including 10 persons (2 from each state) was formed and the President of the Fund, Nursultan Nazarbayev, was elected by the decision of the Heads of Central Asian states.

The agreement was adopted on joint actions to solve the problems of the Aral Sea region, environmental rehabilitation and ensuring the socio-economic development of the Aral region.

19.04.1993 Almaty (Kazakhstan)

The decision of the Board of IFAS.

IFAS Executive Directorate established in Almaty (Kazakhstan)

13.07.1993 Tashkent (Uzbekistan)

The first working meeting of the ICAS:

- *the structure and Regulation on the Executive Committee of the ICAS approved;*
- *«The main provisions of the concept of Central Asian states on solving the problems of the Aral Sea basin, taking into account the socio-economic development of the region.» approved*

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11.01.1994 Nukus (Uzbekistan)

The second meeting of the ICAS and the meeting of the Presidents of Central Asian states:

- *«Program on specific actions to improve the environmental situation in the Aral Sea basin in next 3-5 years, taking into account the socio-economic development of the region» (ASBP-1) approved;*
- *The Regulation on the Interstate Council on the problems of the Aral Sea basin approved;*
- *Ammanazar Ilamanov – Minister of Land Reclamation and Water Resources of Turkmenistan, was appointed as a Chairman of the Executive Committee of the ICAS for one year;*
- *Yuri Bobko was appointed as First Deputy Chairman of the Executive Committee of the ICAS – Technical Director;*
- *The issue of forming the funds of the International Fund for the Aral Sea Saving was considered.*

18.07.1994 Ashgabat (Turkmenistan)

The third meeting of the ICAS:

- *Terms of references (ToRs) for ASBP-1 for financing through donor assistance approved;*
- *The Regulation on the Commission on Sustainable Development approved.*

03.03.1995 Dashkhovuz (Turkmenistan)

The fourth meeting of the ICAS and the next meeting of the Presidents of Central Asian states on the problems of the Aral Sea:

- *The Joint Statement by the Presidents of the Republic of Kazakhstan, the Kyrgyz Republic, the Republic of Tajikistan, Turkmenistan and the Republic of Uzbekistan on equal and mutually beneficial cooperation on a multilateral basis was adopted;*
- *The decision was made to hold the International Conference on the problems of the Aral Sea on September 18-20, 1995 in Nukus with the support of the United Nations;*
- *Matkarim Rajapov – Deputy Chairman of the Cabinet of Ministers of Turkmenistan appointed as Chairman of the Executive Committee of the ICAS in combination for one year.*

18-20.09. 1995 Nukus (Uzbekistan)

UN International Conference on Sustainable Development of the Aral Sea Basin States with the participation of the Heads of State of Central Asia.

- *On September 20, 1995, the Presidents signed the Nukus Declaration of Central Asian states and international organizations on the sustainable development of the Aral Sea basin. In this document, the Presidents expressed the need for further development of the two commissions created at the ICAS umbrella, giving international status to the created structures dealing with the Aral Sea problem within the framework of the ICAS, and agreed to have a permanent Chairman of the IFAS Executive Committee.*

19.04.1996 Kyzylorda (Kazakhstan)

The fifth meeting of the ICAS. The following decisions were made at this meeting:

- *approved the prepared draft Agreement between the Governments of the Central Asian states "On the status of the ICAS, IFAS and their organizations". This project was then sent to the parliaments of the countries for consideration by the relevant commissions for subsequent signing by the governments of the Central Asian states;*
- *ssues on the work of the Commission on Sustainable Development, on the implementation of the «Program of Concrete Actions», on the activities of the ICWC for 1995, on the allocation of funds from the World Bank special grant for immediate assistance to the Aral Sea population, on the activities of the ICAS Executive Committee for the reporting period, on the formation of funds International Fund for Saving the Aral Sea, on approval of the structure of the Executive Committee of the ICAS, its budget and staffing for 1996;*
- *instructed by the Chair of the ICAS Zhanybek Karibzhanov to resolve the issue with the Heads of State on the nomination of the permanent Chairman of the Executive Committee of the ICAS;*
- *The draft of the International Convention on Sustainable Development of the Aral Sea Basin was considered;*
- *approved the Regulation on the Council of the Executive Committee of the ICAS and members of the Council.*

27.02.1997 Almaty (Kazakhstan)

The sixth meeting of the ICAS (the last as Council, further it will be IFAS) and the meeting of the Heads of State of Central Asia on the problems of the Aral Sea basin.

The following issues have been considered:

- *Draft Agreement between the Government of the Republic of Kazakhstan, the Government of the Kyrgyz Republic, the Government*

of the Republic of Tajikistan, the Government of Turkmenistan and the Government of the Republic of Uzbekistan «On Status of the Interstate Council on Problems of the Aral Sea Basin and the International Fund for Saving the Aral Sea and its Organizations»;

Activities of the Interstate Commission for Water Coordination;

Activities of the Interstate Commission on Sustainable Development;

Work of the Executive Committee of the IFAS for the reporting period;

Magazine «Bulletin of the Aral Sea».

At the same ICAS meeting, the report of the World Bank's Vice President Mr. Johannes Lynn on implementation of the Aral Sea Basin Program and the assistance provided by the donor community was presented, and future intentions were discussed.

It was decided to elect Islam Karimov, the President of the Republic of Uzbekistan, as the President of IFAS.

Rim Giniyatullin was appointed as a Chairman of the Executive Committee of IFAS.

The Almaty Declaration was signed to recognize the need for the development of a comprehensive environmental security program, including the Aral Sea problem, the creation of a nuclear-free zone in Central Asia and the fight against the leakage of nuclear technology and raw materials.

26.01.1998 Tashkent (Uzbekistan)

The decision of the President of IFAS – the President of the Republic of Uzbekistan:

Agency for implementation of the Aral Sea Basin and GEF Projects (IFAS Agency) was established in Tashkent;

Nukus branch of the Executive Committee of the IFAS in Nukus was established.

09.04.1999 Ashgabat (Turkmenistan)

Meeting of the Heads of State of Central Asia on the problems of the Aral Sea basin.

The decision on the election of the President of IFAS, Saparmurat Niyazov – President of Turkmenistan.

Tekebay Altiyev was appointed as a Chairman of the Executive Committee of IFAS.

The Agreement between the Governments of Central Asian countries. on the status of IFAS and its organizations was approved.

Ashgabat Declaration was adopted.

28.12.2001 Tashkent (Uzbekistan)

Meeting of the Heads of State of Central Asia on the problems of the Aral Sea basin.

Tashkent Declaration adopted by Central Asian Heads of State.

28.02.2002 Almaty (Kazakhstan)

Meeting of the Heads of State of Central Asia on the problems of the Aral Sea basin.

The decision to elect Emomali Rakhmonov, President of the Republic of Tajikistan, as the President of IFAS.

Sirojiddin Aslov was appointed as Chairman of the Executive Committee of IFAS.

06.10.2002 Dushanbe (Tajikistan)

Meeting of the Heads of State of Central Asia on the problems of the Aral Sea basin.

The decision on approval of the main directions of the «Program on specific actions to improve the environmental and socio-economic situation in the Aral Sea basin for the period 2003-2010 (ASBP-2).»

The decision on authority terms of office of the President of IFAS.

The Dushanbe Declaration was adopted.

25. 08.2008 Tashkent (Uzbekistan)

The decision of the Heads of the Founding States of IFAS «On the election of the President of the International Fund for Saving the Aral Sea»:

President of the Republic of Kazakhstan Nursultan Nazarbayev was elected as the President of IFAS.

17.10.2008 Almaty (Kazakhstan)

The decision of the President of IFAS – the President of the Republic of Kazakhstan Nursultan Nazarbayev:

Sagit Ibatullin was appointed as a Chairman of the Executive Committee of IFAS.

11.12.2008 New York (USA)

63rd session of the UN General Assembly.

The UN Resolution on granting IFAS the observer status to the UN General Assembly was adopted.

28.04.2009 Almaty (Kazakhstan)

Summit of the Heads of the Founding States of IFAS.

Joint statement by the Heads of State of Central Asia.

It was decided to develop an Action Program to assist the Aral Sea basin countries for the period 2011-2015 (ASBP-3).

4.04.2010 Muynak (Uzbekistan)

UN Secretary-General Ban Ki-moon visited the Aral Sea crisis zone.

Summit of the Heads of the Founding States of IFAS (2009)

31.07.2013 Almaty (Kazakhstan)

The decision of the Heads of the Founding States of IFAS "On the election of the President of the International Fund for Saving the Aral Sea".

The Chairmanship of the Fund passed to Uzbekistan – the President of the Republic of Uzbekistan Islam Karimov was appointed as the President of the IFAS.

2.08.2013 Tashkent (Uzbekistan)

The decision of the President of IFAS – President of the Republic of Uzbekistan Islam Karimov:

to appoint the Deputy Minister of Agriculture and Water Resources of Uzbekistan Shavkat Khamraev as Acting Chairman of the IFAS Executive Committee.

16.09.2013 New York (USA)

68th session of the UN General Assembly.

Upon the initiative of the first President of Uzbekistan I. Karimov the Program of measures to eliminate the consequences of drying up the Aral Sea and prevent the disaster of ecosystems in the Aral Sea region was distributed as an official document of the 68th session of the UN General Assembly in September 2013.

28-29.10.2014 Urgench (Uzbekistan)

International conference «Enhanced cooperation in the Aral Sea basin region to mitigate the consequences of environmental disaster.»

The Resulting Document was adopted.

1.08.2016 Tashkent (Uzbekistan)

The decision of the Heads of the Founding States of IFAS «On the election of the President of the International Fund for Saving the Aral Sea».

The Chairmanship of the Fund passed to Turkmenistan – the President of Turkmenistan Gurbanguly Berdimuhamedov was appointed President of the IFAS.

10.06.2017 Muinak (Uzbekistan)

UN Secretary-General António Guterres visited the Aral Sea crisis zone.

18.06.2017 Ashgabat (Turkmenistan)

The decision of the President of the International Fund for Saving the Aral Sea – President of Turkmenistan Gurbanguly Berdimuhamedov:

Guizgeldi Bayjanov was appointed as a Chairman of the Executive Committee of IFAS.

19.09.2017 New York (USA)

72nd session of the UN General Assembly.

Speech by the President of the Republic of Uzbekistan Shavkat Mirziyoyev.

7-8.06.2018 Tashkent, Muynak (Uzbekistan)

International conference «Joint actions to mitigate the consequences of the Aral disaster: new approaches, innovative solutions, investments».

The Tashkent resolution was adopted.

24.08.2018 Turkmenbashi (Turkmenistan)

Summit of the Heads of the Founding States of IFAS.

Joint Communique was adopted.

The draft ASBP-4 concept was approved.

The draft concept of special UN program for the Aral Sea was considered.

During the IFAS functioning, three programs were implemented to resolve the problems in the Aral Sea region.

FIRST ARAL SEA BASIN PROGRAM (ASBP-1)

The ASBP-1 was implemented in 1995-2003 under the umbrella of the International Fund for Saving the Aral Seaestablished in 1993.

During the first stage of ASBP-1, nine programs were implemented with technical and financial assistance of the World Bank:

1. Regional water management strategy.
2. Improved efficiency of water resources management and ensuring the sustainability of dams and reservoirs.
3. Hydrometeorological services and the regional environmental information system.
4. Water quality management, Drainage program in Uzbekistan.
5. Restoration of wetlands and regulation of the Amudarya and Syrdarya flows.
6. Clean water and health.
7. Water Management in the upper catchment.
8. Automation of water infrastructure.
9. Capacity building.

The total cost of these programs was 60.8 million US dollars, of which only 22.25 million US dollars were attracted and disbursed with the assistance of the World Bank.

As a second stage of the ASBP-1, a project on water and environmental management was implemented in 1998-2003, which was funded by the Global Environment Facility, the Governments of the Netherlands and Sweden.

The total project budget amounted to 21.5 million US dollars, including 4.1 million US dollars – due to the countries of Central Asia.

The project has implemented six components:

Component A «Water resources management and water and soil salinity control» – The goal of the component is to develop regional and national scenarios and strategies for sustainable water management and its alloca-

Table: ASBP-1 Implementation Progress (World Bank 1997)

Name of program	Total estimated cost	Actual allocated	Commi-tted	Outcomes
1.1. Regional Water Resources Strategy	8,000	1.745	1.445	Principal provisions of the Regional Strategy and WARMIS
1.2. Improvement of Water Management Efficiency 1.3. Dam Safety & Reservoir Management	2,000	0.300	-	Proposals for development
2. Hydrometereological network and Regional Environmental Information System	3,000	-	-	Proposals for development
3.1. Water Quality Management	7,500	0.675	0.675	Remote Sensing Technology
3.2. Uzbekistan Drainage Program	5,000	1.750	1.750	Proposals for development
4.1. Wetlands Restoration and Syrdarya Flow Control	6,700	3480	1640	Feasibility Study for Lake Sudoche Same for the North Sea
5.1. Clean Water & Health	13,000	5940	2930	Design of Water Supply System in Nukus, Dashhowuz, Kyzylorda
6. Upper Watershed Management	3,000	0.600	0.500	Proposals for development
7. Automation of Water Infrastructure	1,500	0.300	0.100	Prefeasibility Study for the automatization system
8. Capacity Building	9,100	5,700	5,700	
TOTAL	**60,800**	**22,250**	**16,780**	

tion with environmental consideration in the Syrdarya and Amudarya rivers basins and assist decision makers in five countries in preparation of the mid- and long-term water management agreements .

Component B «Public awareness» – The goal of the component is to assist in public awareness and understanding of the need to save water, raising respect for water and contributing to change consumers' attitude to water.

Component C «Dams and reservoirs safety management» – The goal of the component is to evaluate the safety of dams in the region; upgrading monitoring and warning systems on individual dams based on pilot projects; and drafting emergency measures on dam restorations.

Component D «Monitoring of transboundary waters» – The goal of the component is to build capacity for monitoring by independent bodies of qualitative and quantitative parameters of river flow on 37 transboundary water measuring structures.

Component E «Restoration of wetlands» – The goal of the component is to restore wetlands of Lake Sudoche, which is a nesting place of declining species of migratory birds.

Component F «Project Management Support»

Water and Environment Management Project was completed on October 31, 2003 by the decision of the Board of IFAS.

A large-scale project «Regulation of the Syrdarya River and Preservation of the Northern Aral Sea» (PRSSAM-1) was implemented in the Kazakhstani part of the Aral Sea region under the ASBP-1. The start of the project was in November 2002. The project was financed by the World Bank's loan amounting 64.5 million US dollars and co-financed by the Government – in the amount of 21.29 million US dollars.

As a result of the implementation of the PRRSAM-1 project, the following was achieved:

1. The flow capacity of the Syrdarya River increased from 350 to 700 m³/s.

2. Preservation of the northern part of the Aral Sea as a geographical and climate-forming object:

- the dried sea bed was covered with 870 km² of water (from 2414 km² to 3288 km²);
- the volume of water in the sea was increased by 11.5 km³ (from 15.6 km³ to 27.1 km³);
- water salinity was reduced from 23 to 17 g/l.

3. Improved water supply to the irrigation and lake systems.

4. Operational safety of Shardarya dam and stabilization of the operation mode of the Shardara hydroelectric power station (increased electricity generation in winter).

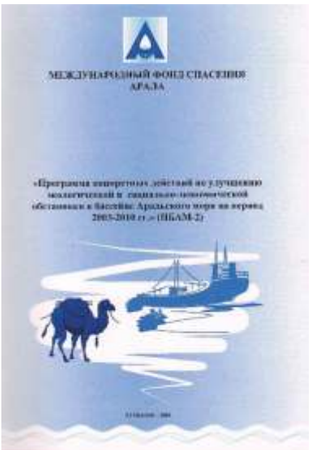
5. Improvied environmental and socio-economic situation of the region and the population of the Aral Sea region:

- the development of local fish species was increased and favorable conditions have been created for breeding sturgeon fish species;
- the volume of fish catch increased from 0.4 to 7.0 thousand tons, and in the future, an increase in fish catch is expected to reach 11.0 thousand tons.

6. Reliability of existing structures on the river, their service life has been increased, and the operational characteristics of hydroelectric facilities have been improved.

7. The restoration of biodiversity of the Kazakh part of the Aral Sea region.

SECOND PROGRAM (ASBP-2)



The ASBP-2 was developed in accordance with the Decision of the Heads of States made in Dushanbe on October 6, 2002. The period of implementation 2003-2010 and total cost of 1,993.9 million US dollars. The program was approved by the IFAS Board on August28, 2003. The program included the following fourteen priorities:

1. Development of agreed mechanisms for Aral Sea Basin integrated water management
2. Rehabilitation of water facilities and improved water and land use
3. Improvement of environmental monitoring systems
4. Program for disaster management
5. Assistance program for the solution of social problems of the region
6. Strengthening the material-technical and legal framework of multilateral organizations
7. Development and implementation of national environmental programs in watersheds
8. Development and implementation of regional and national programs on efficient water consumption in the economy of Central Asian countries
9. Development and implementation of an international program on sanitary-ecological improvement of human settlements and natural ecosystems of Aral Sea Region
10. Development of international environmental sustainability and biological productivity recovery program
11. The concept of sustainable development of the Aral Sea Basin
12. Regional Action Programme to Combat Desertification
13. Development of wetlands in the lowlands of the Amudarya and Syrdarya rivers
14. Rationalizing the use of saline drainage water.

According to the EC IFAS (Tajikistan) the second program was implemented only partially, mainly by the countries' efforts with total budget of about 50 million US dollars.

Republic of Kazakhstan: Executive Office of IFAS in Kazakhstan during 2002-2007 in the form of contributions received 687.95 million Tenge (about 4.9 million US dollars) from the budget. These funds were primarily directed to addressing priority environmental and social problems of the Aral and Kazalinsk districts of Kyzylorda Province. In 2002-2007 51 projects were implemented in the province.

Kyrgyz Republic: IFAS executive committee in the Kyrgyz Republic for 2002-2007 received total contributions of 8.3 million Soms or 230 thousand U.S.dollars.

Republic of Tajikistan: EC IFAS and its branches in the Republic of Tajikistan during 2002-2007 was allocated 2,272.30 Somoni, or 1.22 million US dollars by the government, which were aimed at the organization of nine IFAS Board meetings, four donors meetings, the maintenance of the IFAS EC, communications, e-mail, Internet, housing of IFAS EC members, transportation, publishing, public awareness, implementation of projects and programs on water supply, repair of water facilities, cleaning of drainage network, and charity. Grant funds in the amount of 182 thousand U.S. dollars from the World Bank, ADB, UNESCO, WMO, companies JNR LTD were directed to the organization of the activities of IFAS Executive Committee.

Turkmenistan: IFAS EC Dashoguz branch during 2002-2007 received the amount of 52,793.83 Manat (10.15 million US dollars) from the state budget which was directed to the support of the office and the implementation of social, economic and environmental programs and projects on Turkmen part of the Aral Sea Region.

Republic of Uzbekistan: Nukus branch of IFAS EC during 2002-2007 received 15.57 million US dollars from the state budget for its support and implementation of water, socio-economic and environmental programs and projects on the Uzbek part of the Aral Sea Region. One of the biggest project within this Program was initiated based on the order of the Cabinet of Ministers of the Republic of Uzbekistan No. 03 / 105-406 of April 10, 2002. In 2003, the UzGIP institute developed a «Feasibility study on the creation of small local water bodies in the Amudarya delta». As part of the Feasibility study, construction and reconstruction of the main facilities for the Mezhdurechensky, Muinak, Rybachsky reservoirs and the Dzhiltyrbas reservoir was envisaged. Implementation of work in 2004-2008 allowed to ensure the filling of the Mezhdurechensk reservoir up to 200 mln. m^3, the Dzhiltyrbas reservoir – up to 161 mln.m^3, to improve the water supply to the Muynak and Rybachye reservoirs. During 2000-2012, in the framework of the 1st phase, 11399.1 million Sums were allocated and spent from the state budget of Uzbekistan for the project implementation.

IFAS Executive Committee in Tajikistan in 2003-2008 allocated funds for the projects and programs of the total amount of 6.8 million US dollars. These projects were designed to support the water management at the regional level and the capacity building of basin organizations for the effective

management. The **Regional Centre of Hydrology** was established to improve forecasting systems and data exchange between the countries of the region. A model law on hydrotechnical structures safety and the draft regional agreement on safety of hydrotechnical structures were developed.

THIRD PROGRAM FOR THE ARAL SEA BASIN (ASBP-3)

On April 28, 2009, the Heads of the Central Asia states made a joint statement, highlighting the important role of IFAS in coordinating and addressing the fundamental aspects of cooperation to overcome the Aral Sea Basin crisis and strengthen the collaboration with the UN system institutions and other international organizations. It was decided that EC IFAS jointly with the Interstate Commission for Water Coordination, Interstate Commission for Sustainable Development of the IFAS with participation of national experts and donors to develop a Program of actions for the period 2011-2015 (ASBP-3).

The ASBP-3 was adopted based on a decision of the IFAS Board (December 10, 2010, Almaty). The ASBP-3 included the implementation of about 300 national and regional projects totaling more than 15.0 billion US dollars.

Uzbekistan has consistently made a significant contribution to the IFAS. Thus, according to the Decree of the Cabinet of Ministers of the Republic of Uzbekistan No.255 dated 29.08.2015 (as a contribution to the ASBP-3):

«Comprehensive program to mitigate the consequences of the Aral Sea disaster, restoration and socio-economic development of the Aral Sea region for the period of 2015-2018» is currently implemented.

The program includes 235 projects totaling 1920.8 million US dollars, including – 736.4 million US dollars – Uzbekistan's contribution from the state budget and 1184.4 million US dollars – loans from international financial agencies. Within this program, the projects are being implemented in the following areas:

- Improvement of the management system and economical use of water resources.
- Implementation of large-scale activities on afforestation of the dried Aral Sea bottom and prevention of desertification of the region.

- Creation of conditions for development, reproduction and conservation of the gene pool in the Aral Sea Region.
- Conservation of biodiversity, restoration of biological resources, protection of flora and fauna.
- Improvement of institutional arrangements.

Our partners in Kazakhstan also work within the framework of the ASBP-3 in many areas. Thus, in 2016, the President of Kazakhstan approved the «**Roadmap for the development of industries in the Aral region for 2017-2019**». It included 84 projects worth 114 billion tenges. Of these, 39 projects worth 11.4 billion tenges were implemented in 2017. In 2018, the implementation of projects amounted to 29.4 billion tenges. The construction of a soda ash plant continues. Half of all investments came in rural areas and was aimed at the development of industry, transport, education and health.

In 2017, 541 thousand tons of salt were produced, 206.4 thousand tons of iodized salt, 2.9 thousand tons of fish, 163 tons of meat, 644 tons of bread and bakery products, as well as 135.4 thousand tons of quartz sand were produced.

The second direction in Kazakhstan is the implementation of the project «Regulation of the Syrdarya River Channel and the Northern Aral Sea» (PRRSAM-2).

In 2018, the implementation of the second phase of the project was launched. The development of the second phase of the PRRSAM was supported by the World Bank, which, together with the Government of Kazakhstan, allocated funds for preparatory work on the project. After a thorough analysis of the state of the main waterway of the region – the Syrdarya, water protection facilities, the ecological situation of the region, eight components of PRRSAM-2 were proposed.

This is the restoration of the left-bank lock-regulator of the Kyzylorda hydroelectric complex, the straightening of the Syrdarya river channel in two sections, the construction of protective dams in two regions of the region, one road bridge, the restoration of the Kamyshlybash and Akshatau lake systems in the Aral region. Next, according to the plan, reconstruction and expansion of outgrowth ponds in the Tastak section of the Kamyshlybash hatchery and continuation of the reconstruction of the northern Aral Sea are continued. It is also planned to create a working center for water resources management in the Kazakhstani part of the Syrdarya river basin.

At the first stage, four components will be implemented for 9.5 billion tenges from the republican budget. These are the most significant areas of work for the population since they are related to ensuring the safety of citizens during the flood period. For example, the straightening of the Syrdarya river bed in the Korgansha and Turumbet sections, the construction of protective dams in the Kazalinsky and Karmakshy districts, and a road bridge near the village of Birlik.

World Bank specialists will visit the region, and carry out site investigations the need for implementation of other components of PRRSAM-2, and perhaps Kazakhstan will receive support from this international financial institution already in the framework of the new ASBP-4.

The third area is the contribution of the Republic of Kazakhstan to IFAS – through the implementation of the portfolio of projects of the Executive Directorate of IFAS in the Republic of Kazakhstan. The total project portfolio – a total of 32 projects – about 100 million US dollars.

Unfortunately, to this day there is no in-depth analysis of the results of the three programs (ASBPs) under IFAS. However, we can safely say that over the past 25 years, the provisions of the «Concept for Solving the Aral Sea Problems» of 1993 have practically become obsolete. Much has been done by countries to mitigate the consequences of the Aral Sea disaster, the socio-economic conditions in the countries of the region have changed, and the water management situation in the region has radically changed. In the Aral basin, like nowhere else in the world, the effects of climate change are being observed.

Many other factors also indicate that the time has come to change practices regarding building ecosystem resilience with economic growth.

A fish processing factory opened in the Aral region (Kazakhstan)

FOURTH PROGRAM FOR THE ARAL SEA BASIN (ASBP-4)

Upon the initiative of the Chair country of the IFAS (Turkmenistan), a new program is being prepared for implementation in the Aral Sea basin. On January 30, 2018, at a meeting of the IFAS Board in Ashgabat, it was decided to develop an action program to assist countries in the Aral Sea basin (ASBP-4).

Within the IFAS Summit – on August 23, 2018, at an extraordinary meeting of the Fund's Board, the ASBP-4 Concept was approved. The directions of the ASBP-4 are as follows:

- Integrated water resources management;
- Environmental direction;
- Socioeconomic development;
- Improved institutional and legal mechanisms.

These directions cover the whole spectrum of existing problems of the Aral Sea basin and logically follow from previous practices.

In this regard, the Cabinet of Ministers of the Republic of Uzbekistan adopted a special resolution No. 03/1-597 of September 11, 2018. Under the coordination of the Ministry of Water Resources of the Republic of Uzbekistan and the IFAS Agency, interagency consultations were held to prepare project proposals for inclusion in the ASBP-4 program.

As a result of the consultations, a package of documents was prepared, which includes 39 project proposals for implementation under the ASBP-4 for a total amount of 385.8 million US dollars. In February 2019, the Ministry of Foreign Affairs of the Republic of Uzbekistan submitted this package to the Executive Committee of IFAS.

Also in February 2019, the Executive Committee of the IFAS through the Ministry of Foreign Affairs of the Republic of Uzbekistan presented proposals for improving the organizational structure and the legal framework of IFAS.

On July 30-31, 2019 in Ashgabat, Turkmenistan, the second meeting of the Regional Working Group on the development of the «Program of Action for Assisting the Countries of the Aral Sea Basin (ASBP-4)» was held. The meeting was attended by representatives of the IFAS Executive Committee, members of the Regional Working Group for the development of ASBP-4 from

Kazakhstan, Tajikistan, Turkmenistan, Uzbekistan, representatives of the ICWC executive bodies, as well as consultants to the Regional Program «Transboundary Water Management in Central Asia» within the framework of the «European Dialogue» project Union in Central Asia».


Photo: Yu.Shkurin

Full consensus was reached on the composition of the ASBP-4 – 34 regional integrated projects were included, which will be elaborated in detail for submission to countries and donors for funding in November 2019.


Photo: Yu.Shkurin


Photo: Yu.Shkurin


Photo: Yu.Shkurin


Photo: Yu.Shkurin

UZBEKISTAN CONSISTENTLY MAKES ITS SIGNIFICANT CONTRIBUTION TO THE SOLUTION OF THE ARAL SEA BASIN PROBLEMS

The Presidential State Program of the Aral Sea Region for 2017 -2021

In February 2017, the President of Uzbekistan Shavkat Mirziyoyev approved the «Strategy of action on five priority areas of development of the Republic of Uzbekistan in 2017-2021».

The document points to the importance of taking systemic measures to mitigate the negative impact of global climate change and the drying up of the Aral Sea on the development of agriculture and human life. For this purpose, the President of Uzbekistan approved the State program for the development of the Aral Sea region for 2017-2021.

The program provides the implementation of 67 projects through the allocation and disbursement of more than 8.4 trillion UZSfrom all sources of financing, including budget allocations, trust funds, grant funds and loans of the main IFIs (ADB, WB, IDB, etc.). The objectives are as follows:

- implementation of comprehensive measures to create new jobs, employment, as well as increase the investment attractiveness of the region;
- development of the water supply system and increase of the level of provision of the population with clean drinking water, improvement of sewerage systems, sanitation and disposal of household waste;
- measures for further development of the health care system in the region and preservation of the population gene pool;
- further implementation of measures aimed at improving the living conditions of the population living in the region;
- development of transport, engineering and communication infrastructure of settlements in the region, improvement of irrigation network and introduction of modern energy-saving technologies.


Photo: nuz.uz

As a part of this Program the Government of Uzbekistan with Resolution No. PP-2754 dated February 2, 2017 approved the proposal of the Council of Ministers of the Republic of Karakalpakstan, the Uzbek Agency «Uzcommunkhizmat» and JSC «Uzbekistan Temir Yullari» on implementation of the project «Construction of the water conduit «Kungrad-Muynak» with water distribution structure. The construction of the structure amounting 26.6 billion UZ Sum and 101 km long was carried out for five months (from February to July 2017.).

More than 25 thousand people from Nukus, Beruniy, Muynak, Kungrad and Karauzyak districts are now provided with clean drinking water. The ceremony of launch of the conduit with the daily supply capacity of 7000 cubic meters in the Muynak town was attended by the First Deputy Prime Minister of Uzbekistan Achilbay Ramatov and Chairman of Zhokargy Kenes of Karakalpakstan Musa Erniyazov.


Photo: Maksad Khabibullaev, UzA

MULTI-PARTNER TRUST FUND FOR HUMAN SECURITY FOR THE ARAL SEA REGION
aral.mptf.uz

On November 27, 2018, a special high-level United Nations assembly was held at the UN headquarters in New York on the theme “Promoting regional and international cooperation towards comprehensive strategies in support of sustainable development”. During this assembly, a presentation and launch of the Multi-Partner Trust Fund for Human Security for the Aral Sea region was held.


Photo: aral.mptf.uz

The goals and objectives of the Trust Fund:

- Development and implementation of the Unified Strategy for Assistance to the Aral Sea Region in cooperation with donor organizations based on needs assessment in the region.
- Increased regional and international dialogue between donors and the Government on solving the problems of the Aral Sea region to a qualitatively new level, which will lead to increased interest of the partners to the Aral problem;
- Mobilization and increase of funds under the umbrella program, as well as strengthening coordination between donor organizations;

· The introduction of a universal and effective regime for the selection and approval of projects;

· Ensuring transparency of financial transactions and increasing the confidence of international financial institutions to partner organizations in the Republic of Uzbekistan;

· Increasing the capacity of national organizations in the development of quality project documents, their implementation according to international standards;

· Constant monitoring, evaluation and verification of reports on all activities of the Fund and on each project in accordance with international and national requirements and legislation.

The funds of the MPTF will be formed by the funds of international donors and financial institutions, the Government of the Republic of Uzbekistan, individual donations, business community contributions, etc. The generated funds will be allocated for implementation of projects/programs under the Unified Development Strategy of the Aral Region.

On 8 January 2019 the President of Uzbekistan signed Decree № 4099 On Support Measures to the Multi-Partner Trust Fund for Human Security for the Aral region. According to this decree, the Government of Uzbekistan and the UN have completed the institutional arrangements for Trust Fund and adopted a Road Map supporting the Fund's activities.

On 1 March 2019 Uzbekistan has made its contribution to the Trust Fund (first tranche in the amount of 2,0 million US dollars). On 28 March 2019 the Government of Norway allocated 1,1 million US dollars for the Trust Fund.

Under the leadership of the State Investments Committee of Uzbekistan, Target Group was established to negotiate with 17 active donor countries on the mobilization of the financial contributions to the Trust Fund

On July 15, 2019, Head of the Uzbekistan Mission to the European Union, Dilyor Khakimov, met Ms. Riina Kionka, the Chief Foreign Policy Adviser to the President of the European Council. Mrs. Riina Kyonka highlighted the EU's interest in supporting the UN Multi-Partner Human Security Trust Fund for the Aral Sea region in Uzbekistan. In this regard, it was decided to allocate 5 million Euro to finance projects under this fund.

Economic security

- Establishment of a sewing workshop by investing in rural women's initiatives
- The computer center development project in Muynak district
- Muynak district rural women support the project
- Business project to create a craft center


Photo: aral.mptf.uz

Food security

- Beekeeping development project in the «Kipchak» Rural Community of the Amudarya district
- Establishment of a small bakery in Shumanay district
- Business project site on milk processing in Kanlikul district
- Irrigation water access project in the village of «Shege» in the Muynak district


Photo: aral.mptf.uz

Health security

- The project on capacity building of the health care personnel of the «Kattagar» Rural Healthcare Facility in Nukus district
- Project on provision of drinking water to the village of «Nogay» of the «Beskopir» Rural Community of the Kanlikul district
- Project on installation of the solar panel system in the Rural Health Facility «Shagirlik» in the Muynak district


Photo: aral.mptf.uz

Environment security

- The project on sustainable development of forestry in the Lower Amudarya Biosphere Reserve


Photo: aral.mptf.uz

Cooperation with Global Green Growth Institute (GGGI)

The President of Uzbekistan Shavkat Mirziyoyev on November 27, 2018 in Tashkent met the former United Nations Secretary-General Ban Ki-moon, who now is the head of the Assembly of the Global Green Growth Institute and the Ethics Commission of the International Olympic Committee.

Mr. Ban Ki-moon supported the initiatives of the Head of Uzbekistan to create a Multi-Partner Trust Fund for Human Security, which was launched on the same day at the UN headquarters in New York, and the International Innovation Center of the Aral Region.

Delegation of the Republic of Uzbekistan led by First Deputy Foreign Minister Ilhom Nematov visited the Republic of Korea on December 21-22, 2018 to discuss cooperation with the Global Green Growth Institute and the Global Adaptation Commission, which is chaired by Ex-UN Secretary-General Ban Ki-moon.

«*At a recent meeting in Tashkent, we with the President of the Republic of Uzbekistan Shavkat Mirziyoyev discussed a wide range of issues, including attracting the efforts and resources of the international donor community to combat the consequences of the Aral disaster,» Ban Ki-moon said. «We welcome the interest of Uzbekistan in establishing cooperation with the Institute for Global Green Growth and the Global Adaptation Commission*».

In February 2019, Uzbekistan joined the Agreement on Establishing the Global Institute for Green Growth (GGGI).

On 2-9 April, 2019, GGGI experts have visited Uzbekistan to assist in attracting the financial resources from the United Nations, Green Climate Fund and other international financial institutions. At the initial stage the Uzbek side proposed 13 projects to be implemented jointly with GGGI with a total amount of more than 250 million US dollars.

Uzbekistan plans to involve experts of the GGGI in the organization of the International conference “Aral sea region is a zone of environmental innovations and technology” (scheduled in October 24-25, 2019), and establish cooperation with the International Innovation Center for the Aral Sea Region.

Cooperation with Green Climate Fund

On August 19, 2019, the delegation of the Republic of Uzbekistan led by the First Deputy Minister of Foreign Affairs Ilkhom Nematov visited the Green Climate Fund Global Programming Conference in Songdo, Republic of Korea, and held talks with the Deputy Executive Director of the Green Climate Fund (GCF) Javier Manzanares.

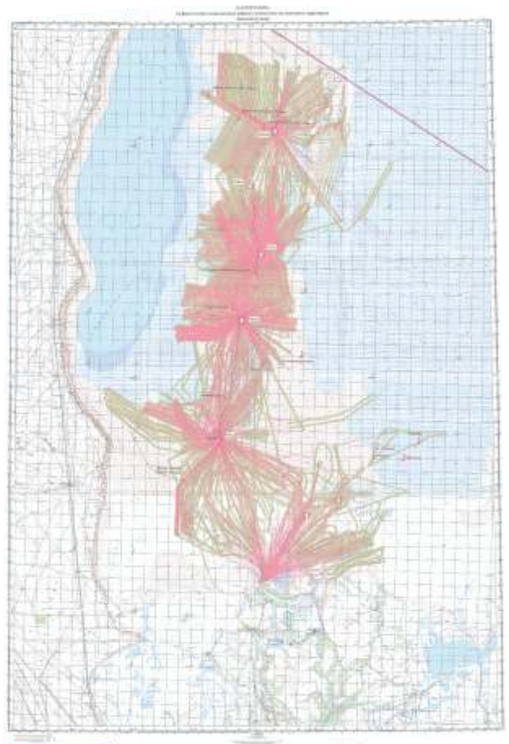
Deputy Executive Director of the GCF positively evaluated the results of work with Uzbekistan in 2017-2019. In particular, it was noted that in recent years, Uzbekistan, together with organizations accredited to the GCF, has sent several very feasible and relevant projects to the Fund to attract grant funds. As noted, one of them was a joint project of Uzbekistan, Tajikistan and the World Bank «Adaptation and mitigation of climate change in the Aral Sea basin» for 19 million US dollars.

The parties exchanged views on the progress of consideration and approval of the new projects «Improving the Disaster Risk Management System and Responding to Adaptation to Climate Change in Uzbekistan» and «Development of Agrometeorological Services to Ensure Climate-Resistant Fruit and Vegetable Production in Uzbekistan».

New Initiatives of the President of the Republic of Uzbekistan

In December 2018, the President of Uzbekistan Shavkat Mirziyoyev visited Muynak region and initiated additional actions to change the situation to better. As a result of that visit Cabinet of Ministers of the Republic of Uzbekistan released Resolution No. 37 of January 16, 2019, which approved «Comprehensive Development Program of the Muynak District of Karakalpakstan 2019-2021».

The Program includes 75 projects for implementation during 2019-2021 with a total cost of UZ Sums 26 974 827 million (about 3,2 Billion US dollars).



Cartogram of forest plantations at the bed of Aral Sea in the period January-March 2019

President of Uzbekistan insisted to accelerate actions to create «Green Cover» at the dried bottom of the Aral Sea.

For the afforestation at dried seabed in 2019 there were allocated funding in the amount of 400 billion UZ Sums from the state budget of Uzbekistan. In December 2018, work began with the goal to cover by the end of 2019 more than 1 million hectares of the bottom of the dried Aral. More than 530 tractors, tracks, excavators and two «An-2» aircraft are mobilized.

1532 tons of Saxaul seeds and 73 tons of Karaburak were prepared.

Afforestation cartogram on the dried seabed in January – March 2019

By April 1, 2019 the area 451,600 of 500,000 ha has been covered by the works, as follows.

323 150 ha were planted using two «An-2» aircraft.
119,440 ha were planted with agricultural machinery.
3,000 ha were planted with hang gliders.

8,108,450 salt-tolerant plants were planted on the total area of 15 473 has, including 4 855 100 saxaul transplants, 2 495 600 Tamarix transplants and 759 750 saline transplants. Additionally, 8 154 250 saxaul transplants were prepared for planting.

To stabilize the sandy relief, mechanical reed protection 85.7 km long was established.

On the Aral Sea area there are 15 units for drilling of hydrogeological wells. Drilling and construction of 27 wells 300-350 m deep have been completed. Mineralization of groundwater is from 1.4 to 25 g/l, which are used for irrigation and technical needs. By the end of 2019, it is expected to drill and build additionally 23 similar wells.

These measures allow creating favorable conditions for restoring the biodiversity of the plant world and developing a base for livestock breeding, as well as preserving the unique fauna that is on the verge of extinction.

The draft Decision of the Government has been prepared on the dismantling and demolition of buildings of the former field research bio laboratory on Vozrojdenie Island, followed by the creation of a «green cover» in the area.

Forest plantation at the bottom of the Aral Sea (2019)

ON AUGUST 24, 2018, THE SUMMIT OF HEADS OF STATES OF IFAS FOUNDERS WAS HELD IN TURKMENISTAN

Due to active work of the International Fund for Saving the Aral Sea, in 2018, two meetings of the Fund's Board were held and in August the first IFAS Summit of the Heads of the Founding States of IFAS was held in August, which gave new impulses to solving the problems of the Aral Sea.

Summit of Heads of States of IFAS founders (2018)

The President of the Republic of Uzbekistan, Shavkat Mirziyoyev suggested several important initiatives that, if they are implemented, will be able to: – «***dramatically improve the unfavorable environmental situation in our region***». For this: – «***decisive and non-standard measures are needed***».

The first initiative of the President of Uzbekistan is to declare «Aral Sea region – as the Zone of Environmental Innovations and Technology». This suggests that we are fundamentally changing the ideology of solving the Aral catastrophe: we do not just draw attention to the ecological crisis to reduce its negative consequences, but create a mechanism to eliminate it.

Much has been done by the countries to mitigate the consequences of the Aral Sea disaster, the socio-economic conditions in the regional countries have changed, the water situation in the region has changed dramatically. In the Aral Basin, as elsewhere in the world, the impacts of climate change are observed. Many other factors also indicate that it is time to change practices regarding the creation of ecosystem resilience with economic growth.

On October 16, 2018 the President signed Resolution No. PP-3975 On formation of the International Innovation Center of the Aral Sea region under the President of the Republic of Uzbekistan, with the scientific and technical support from the Islamic Development Bank and the International Center for Bio-farming in Saline Areas (ICBA).

The main objectives and rights of the International Innovation Center for Aral Sea Basin:

- improving the productivity of agroecosystems on the saline soils of the dried bottom of the Aral Sea and adjacent territories of the deltas of the Aral Sea basin to improve the well-being and incomes of the population living in this region;
- creating experimental demonstration pilot sites for testing various salt-drought-resistant and frost-resistant crops and shrubs on saline soils and degraded pastures, developing and introducing innovative technologies and approaches in collaboration with international organizations aimed at restoring and increasing the productivity of water and land resources in Aral sea Region;
- promotion and presentation of innovative technologies and approaches, including the sustainable use of water resources, including marginal categories, the afforestation of desert sandy arrays of the dried bottom of the Aral Sea, agroforestry and the organization of desert-pasture forage production and animal husbandry, improving the fertility of saline degraded land, diversification and widespread adoption new and unconventional salt and drought-resistant, improvement of the issues of their selection, the technology of their cultivation and seed new products; as well as the improvement and introduction of alternative systems for the introduction of agriculture on saline soils, the mobilization of plant material from natural pastures for the sustainable use of medicinal, technical, ornamental and other plants of the Aral basin;
- development of measures and institutional approaches for managing and improving pasture productivity, restoring and improving the genetic quality of animal breeds, including the processing of animal products, marketing and export;
- development of a set of measures and a national action plan to prevent and mitigate the effects of drought and adaptation of local people to climate change;
- development of public-private partnership to eliminate the negative environmental and social consequences of the process of draining the Aral Sea;

- development of a set of measures and approaches to improve the environmental situation, life, income and welfare of the population of the Aral Sea basin, conducting scientific, practical and innovative research;
- assistance to research institutions in researching the Aral Sea region;
- participation in the development of international scientific and technical cooperation, the implementation of scientific, technical and innovative projects with foreign partners, including with the involvement of grants from international programs and funds.

The concept of the Aral Sea Area Zone of Environmental Innovations and Technologies is one of the effective mechanisms for the implementation of the Sendai Framework for Disaster Risk Reduction 2015-2030 in the Aral Sea basin.

The second initiative of the President of Uzbekistan is to promote growing of desert and forage plants. «With proper coordination, we will be able to cover the whole dried sea bottom with forest plantings within the 10-12 years». On the dry bed of the Aral Sea and the territory in the southern Aral Sea region, there is still about 2 million ha suitable for forest plantations and for fixing mobile dunes.

The third proposal of the President of Uzbekistan is to create in the Aral Sea zone transboundary protected areas. «Biodiversity conservation should be our common goal». The President proposed to find a common regional approach to preserve the unique fauna of the region (endangered species of animals such as Kulan, Saiga and others) should be saved in the Aral Sea transboundary protected natural territories.

Today, eight reserves, two national natural parks, one Lower Amudarya State Biosphere Reserve, the Republican Center for the Breeding of Rare Animal Species – Jayran, seven nature monuments have juridic status in Uzbekistan. It is planned to create a national park «Central Kyzylkum», with total area of 1.1 million ha, natural complex «Preserves of the Aral Sea region», nature reserve «Guldzhuktau» with the area of174.2 thousand ha. In summer of 2018, documents were prepared to give legal status to the Saygachy complex landscape reserve, the main purpose of which is to preserve the Ustyurt saiga population. Also in the Republic, «Program for the creation of a network of protected natural territories» was launched, within the framework of which it is planned to expand the system of protected natural territories from 2.3 million to 8.1 million ha (about 17% of the territory of Uzbekistan).

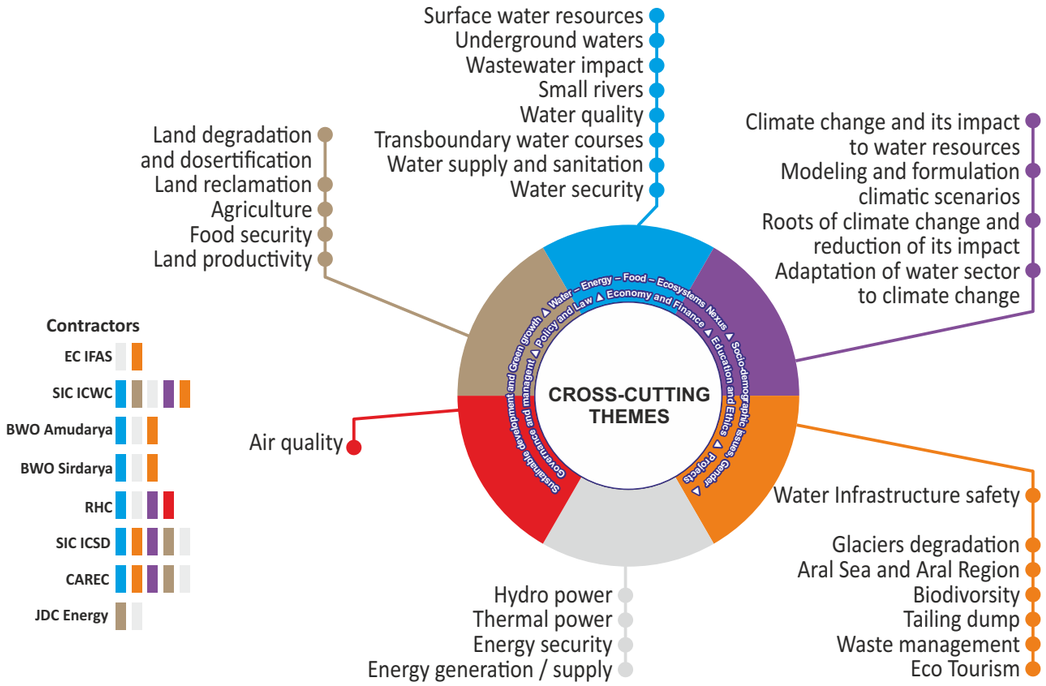
The fourth proposal of the President of Uzbekistan: «I*t is necessary to drastically increase the level of regional cooperation in water conservation, management and rational use of transboundary water resources*». To this end, the President proposed to adopt a Regional Program for the Rational Use of Water Resources in Central Asia.

Over the past 5 years, Uzbekistan has introduced new water-saving technologies on only 207 thousand hectares of irrigated land (5% of the total area of the irrigated land). On November 1, 2018, the President of the Republic of Uzbekistan signed a special decree according to which in the next five years Uzbekistan plans to cover almost 30% of the irrigated area with modern advanced water-saving technologies (which is more than 1 million. 200 thousand hectares).

Irrigation technique	2018	2030
Furrow irrigation by alternating between rows (through the furrow)	724,7	0
Irrigation through shortened furrow	2561,6	520,48
Irrigation through furrow shielded by plastic film	58,9	850,72
Furrow irrigation using flexible hoses	164,1	1148,04
Irrigation by overlapping (alfalfa and fourage cultures)	232,4	872,9
Irrigation by flooding (rice)	307,8	55,9
Drip irrigation	34,9	860,1
Other	207,1	0
Total irrigated area in Uzbekistan	4291,0	4308,14

The joint focus of countries on water conservation will lead to a gradual decrease in the cost of water per hectare, per person, per unit of production. For this, it is also necessary in the framework of the ICWC to implement the water release schedules and distribution plans, which is an important and necessary indicator of common interests to save water.

The fifth proposal of the President of Uzbekistan is to develop effective scientific cooperation. The President of Uzbekistan said: – «*In this regard, we consider it important to organize joint interdisciplinary research, using for that the platform of Scientific Information Centers of the Interstate Commission for Water Coordination and the Interstate Commission for Sustainable Development*».



Conducting collaborative multidisciplinary research

To effectively implement the initiatives of the President of the Republic of Uzbekistan, the Decree of the Cabinet of Ministers of the Republic of Uzbekistan No. 965-f dated November 16, 2018 was adopted. The decree approved the Practical Action Plan («Road Map») to ensure the implementation of the initiatives and proposals of the President of the Republic of Uzbekistan, voiced at the Summit of the Heads of the Founding States of IFAS.

Under the coordination of the Ministry of Innovative Development of Uzbekistan, an Interdepartmental Working Group is functioning represented by many ministries and agencies, and the deputies of the Oliy Majlis of the Republic of Uzbekistan and the International Innovation Center for the Aral Sea Region under the President of the Republic of Uzbekistan.

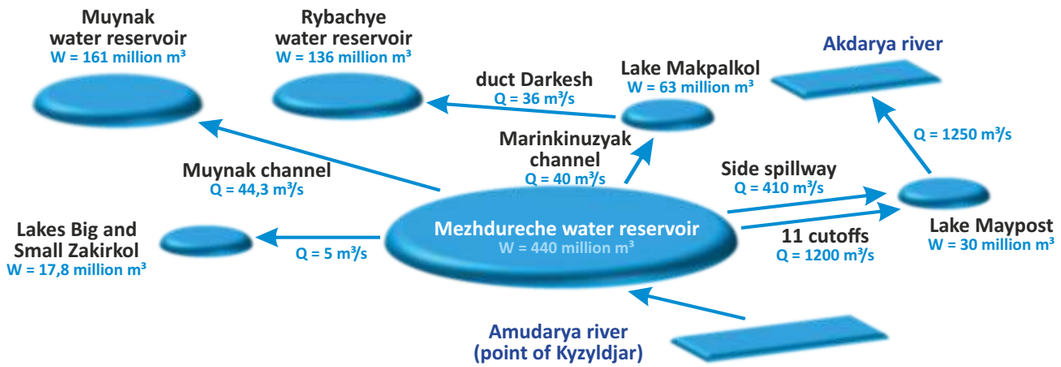
The group developed the Concept «Aral Sea Region is – a Zone of Environmental Innovations and Technologies», which was distributed through the Ministry of Foreign Affairs of the Republic of Uzbekistan on April 14, 2019 by the Central Asian countries for discussion and its subsequent adoption under the auspices of IFAS.

With the coordination of the State Committee for Ecology and Environmental Protection of the Republic of Uzbekistan and the Ecological Party of Uzbekistan, preparations have started for holding in October 2019 of a high-level international conference in Uzbekistan on the theme: «Aral Sea Region is – Zone of Environmental Innovations and Technologies».

On April 26, the President of the Republic of Uzbekistan Shavkat Mirziyoyev met UN Secretary-General Antonio Guterres in Beijing. At the meeting, it was noted that following the upcoming International Conference on the development of environmental innovations and technologies in the Aral Sea region on 24-25 October, 2019, Uzbekistan intends to initiate a special resolution of the UN General Assembly on declaring this region the «Zone of environmental innovations and technologies».

In August2019, the President of the Republic of Uzbekistan Shavkat Mirziyoyev visited the Republic of Karakalpakstan to get acquainted with the progress of the reforms. Upon arrival in Muynak district, President Shavkat Mirziyoyev visited Mezhdurechensk reservoir area and got acquainted with the ongoing works to create small water reservoirs in the Amudarya River Delta. The project is to be implemented in 2019-2022 and intended to improve the socioeconomic situation in the district through the efficient water resources management and creation of complex of engineering structures in the Amudarya delta and artificially irrigated landscape ecosystems, adjacent territories of the dry bottom of the Aral Sea, so t hat to restore the natural ecological regime within the whole South Aral Sea region.

Water distribution scheme in the central zone of the delta of Amudarya river



At a meeting held on August 21, 2019 in Nukus, chaired by the President of Uzbekistan, five priority areas for the further development of Karakalpakstan were identified.

1. Industrial development, the organization of large and small production enterprises in all sectors.
2. Creating favorable conditions for the development of entrepreneurship.
3. The widespread introduction of advanced technologies in agriculture, increasing production volumes, increasing yields and expanding the variety of products.
4. Creation of a modern, convenient infrastructure for production and population.
5. The adoption of comprehensive measures to improve the level and quality of life of the Aral Sea population.

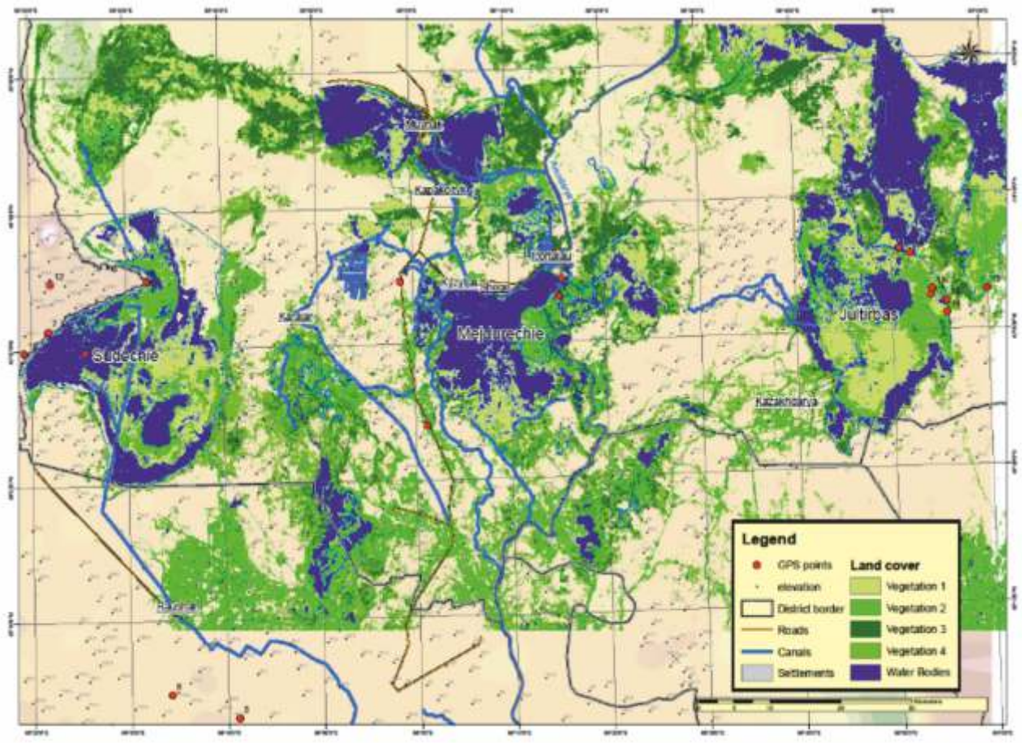
Recommendations on the orientation of each administrative district of Karakalpakstan are given, taking into account their specificity and capabilities:

The Karauzyak region will be specialized in the production of building materials, the Beruni, Khojeyli, Nukus districts – in fruit and vegetable growing, Takhtakupyr – livestock, Shumanai – poultry farming, Ellikkala – viticulture and tourism, Muinak – fish farming and livestock, Kegaili – livestock and paper processing industry, Kanlykul – growing legumes and rice. Kungradsky district – for the petrochemical industry and animal husbandry, Chimbaysky region – for the cultivation and processing of licorice, Turtkul – the production of glass and food products, Amudarya district – gardening, textile and silk production, the city of Nukus – for pharmaceuticals and electrical engineering, as well as turning the Takhiatash region into industrial zone.

PROJECTS IMPLEMENTED BY IFAS AGENCY AND THE NUKUS BRANCH OF EXECUTIVE COMMITTEE OF IFAS

The key to solving the main problems in the South Aral Sea region is the stable provision of the region with water resources.

The South Aral Sea Region covers the northern part of the Aral Sea delta of Amudarya River and adjacent dried part of the Aral Sea, from the Ustyurt plateau in the west to the Kyzylkum desert in the east. The total area of the dried sea bed within Uzbekistan exceeds 3,34 million hectares.



Amudarya Delta

So far, this territory does not have the required stable amount of water resources. Unstable water availability does not allow to stabilize ecosystems and socio-economic developments in the Aral Sea Region. The following is observed here:

- Degradation of the aquatic ecosystems in the South Aral Sea Region and the desiccation of the Aral Sea has undermined the reserves of bioresources and the fishery, the base of the hunting industry.

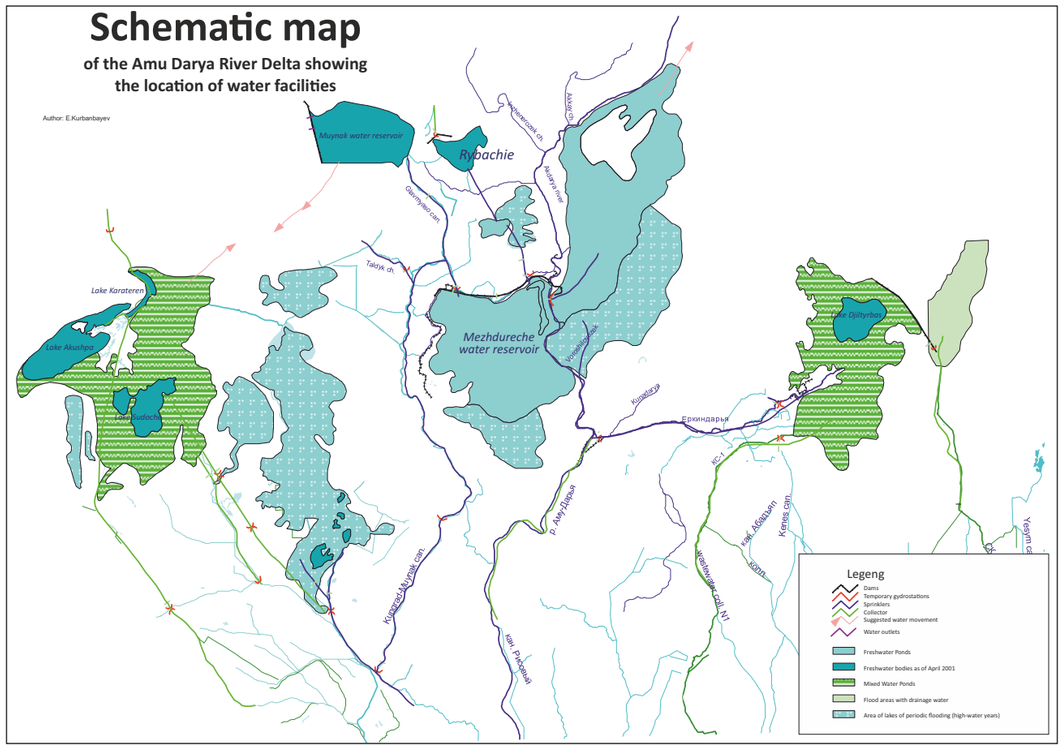
- The areal of coastal-water and water submerged vegetation have decreased.
- Serious changes are occurring in water ecosystems: the transformation of biohydrocenoses, their structure and functioning takes place.

Existing water bodies in the Amudarya delta can be divided into 3 zones:

1. Left-bank zone – the territory commanded by Raushan Canal system, KKS and GK collectors. The main water bodies are Sudochye wetland lakes – Akushpa, Tile, Karateren, Big Sudochie and Begdulla-Aydin, and the lakes of the Karadzhar system – Mashankol, Khodjakol, Ilmenkol.

2. The central zone is the territory commanded by the main Amudarya channel, Glavmyaso and Marinkinuziak canals. The main water bodies are Mezhdurechensk reservoir, Rybache and Muinak Gulf, Makpalkol lake.

3. Right-bank zone – the territory, commanded by Kazakhdarya channel, KS-1, KS-3, KS-4 collectors. The main water body is Giltyrbas Bay.



Water flows (m³/s) and amount (mln. m³) required to maintain the existing coastal and delta lakes (preliminary estimate)

Zone	Water Surface, ('000 ha)	Annual average (m³/s)	Flow (km³)
Left-bank	96.0	35.0	1.1
Central-Amudarya	122.0	99.3	3.14
Right-bank	64.7	32.4	1.03
Total	282.7	166,7	5,27

To solve these problems, the project «Creation of Small Local Water Bodies in the Amudarya Delta» is being implemented.

The project was initiated based on the order of the Cabinet of Ministers of the Republic of Uzbekistan No. 03 / 105-406 of April 10, 2002.

In 2003, the UzGIP institute developed a «Feasibility study on the creation of small local water bodies in the Amudarya delta».

As part of the Feasibility study, construction and reconstruction of the main facilities for the Mezhdurechensky, Muinak, Rybachsky reservoirs and the Dzhiltyrbas reservoir was envisaged.

Location of the project area

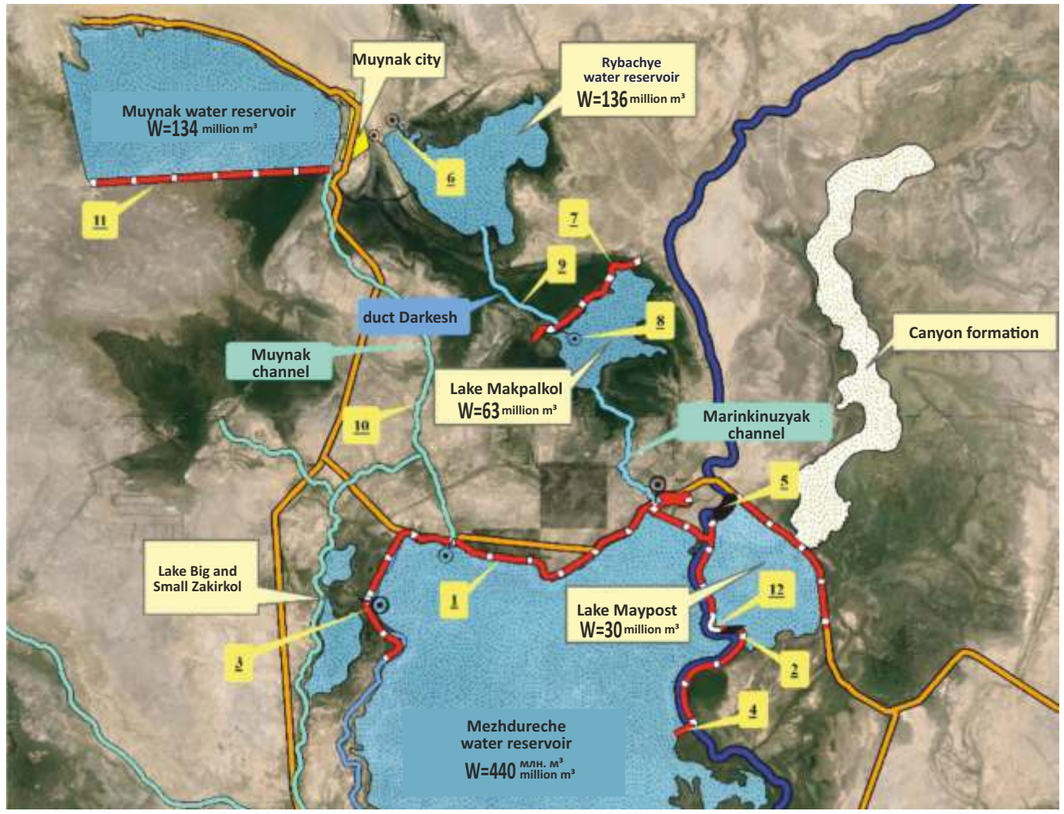
Phase I of the project allowed the creation of engineering-regulated reservoirs with a water surface of about 70 thousand hectares with a total capacity of 810 mln. m³.

Implementation of work in 2004-2008 allowed to ensure the inundation of the Mezhdurechensk reservoir up to 200 mln.m³, the Dzhiltyrbas reservoir – up to 161 mln.m³, and improve water supply to the Muynak and Rybachye reservoirs.

In 2000-2012, in the framework of the 1st phase, 11399.1 million UZ Sums were allocated and disbursed for the project implementation.

The list of facilities of Phase II:

1. Completion of restoration and reconstruction of the Northern dam.
2. Completion of reconstruction of the Eastern dam of the Mezhdureche reservoir, taking into account measures to ensure the capacity of 11 outlets.
3. Construction of outlet for flooding of lakes Small and Large Zikirkol and for feeding Taldyk channel
4. Reconstruction of the Shuak dam
5. Reconstruction of the dam – the road along the Maypost lake with water spill structure and measures to prevent the development of canyon-forming processes in the Domalak lake.
6. Completion of the construction of diversion canals and downstream strengthening of the outlets in the Rybachie reservoir.
7. Construction of a protecting dam of the Makpalkol lake.
8. Construction of outlet from the Makpalkol lake
9. Reconstruction of the Darkesh channel
10. Reconstruction of Muynak canal (Glavmyaso) with flow capacity 44 m³/s.
11. Construction of the South dam of Muynak reservoir.
12. Construction of side spillway from Mezhdureche reservoir 600 m long.



Northern dam of Mezhdureche reservoir

Mezhdurechensky reservoir is a structure for water supply regulation and management to Muynak and Fishing reservoir and Maypost lake and Akdarya river.

To accumulate water in the Mezhdurechensk reservoir up to 440 mln.m³ at the full supply level (FSL) of 57,0, the crest of the Northern and Eastern dams is at the level of 59,0.

The Eastern dam of the Mezhdureche reservoir

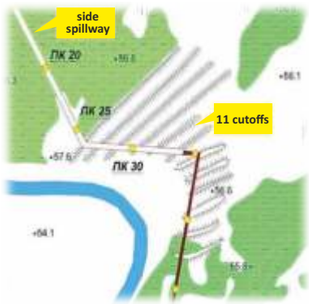
The Eastern dam is located along the right bank of the Akdarya river and separates the Mezhdureche reservoir from the Maypost lake basin. The main part of it runs from North to South and has a length of 8.26 km.

To maintain the FSL of the Mezhdureche reservoir at 57.0 and ensure its trouble-free operation at the highest water level of 57.5, it is necessary to reconstruct the dam.

The following cross-section design parameters of the Eastern dam are accepted:

- Upstream side slope m=7,0,
- Downstream side slope m=3,0;
- Dam crest width – 8.0 m

11 cutoffs



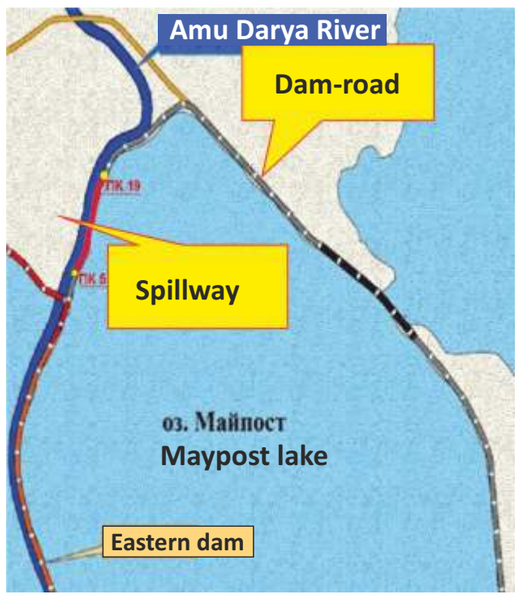
In the section from PK23 to PK41 of the Eastern dam there are 11 cutoffs, which are functioning as spillways from the reservoir. They are open earth channels, through which water is diverted from the reservoir to Maypost depression and further into Akdarya river.

The length of cutoffs is 1200÷200 m, width – 63÷112 m. The present flow capacity of the cutoffs is 661 m³/s, after reconstruction it will be 1200 m³/s.

Under «Comprehensive program to mitigate the impacts of the Aral disaster, rehabilitation and socio-economic development of the Aral Sea region for 2015-2018», approved by Resolution of the Cabinet of Ministers of the Republic of Uzbekistan No.255 dated August 29, 2015, 18,728.825 million UZ Sums were allocated and disbursed for implementation of the project in 2016 -2018 .

In recent years, in the Amudarya Delta there has been an enhanced process of canyon formation. The reason is the water level drop in in the Aral Sea and water supply features in the Amudarya, when long periods of actually completely zero water inflow into the Delta are alternated by the flow of 2800 m³/s.

Canyon-forming processes in Amu Darya Delta



Currently, all water entering the Amudarya Delta flows through the Mezhdurechensk reservoir, Maypost lake and Domalak lake. As a result, the channels of flows crossing the lakes were formed, and the process of their erosion is observed during the passage of floodwaters along these channels. So far, the most dangerous canyon has reached the location of the damaged bridge on R-175 road, about 2 km from the dams of the Mezhdurechensk reservoir.

To prevent further development of the canyons in this direction, it is planned to block the channel of the canyon by a dam-road along the Maypost lake, and the construction of a discharge facility (spillway) from the Maypost lake directly in the direction of the Amudarya (Akdarya) corridor.

To implement the measures within the framework of the project, the Decree of the President of the Republic of Uzbekistan No. 3874 of 07/19/2018 was adopted. The work is being carried out for «Reconstruction of the dam – the road along the Maipost Lake with the installation of a spillway structure in the channel of the Amudarya River (Akdarya) with measures to prevent the development of canyon-forming processes in Lake Domalak».

The total cost of these works is 50.0 billion UZS. According to the contract agreement between the Nukus branch of Executive Committee of IFAS and the «Kuprikurilish» trust unitary enterprise, in 2018, these funds were used to build up 2 sections of the dam-road.

According to visit results of the President of the Republic of Uzbekistan Shavkat Mirziyoyev to Muinak in December 2018, the project «Creating small local water bodies in the Amudarya delta» has received an additional support. Decree No. PP4081 of President of the Republic of Uzbekistan dated December 26, 2018 was adopted. The Decree approved the financing of the project in 2019 amounting 55 billion UZ Sums financed by the Government and EU grant amounting 40 million Euro.

In January 2019, contracts were signed between the Nukus branch of EC-IFAS and the contractor «Kuprikkurilish» trust for the project «Reconstruction of the dam – road along the Maipost Lake with construction of spillway structure to Amudarya (Akdarya) River with canyon development preventive measures in Domalak Lake». Design Institute UzGIP is a project designer.

The dam-road is designed to maintain water in Maypost Lake, forming a reservoir with the capacity of up to 30 million m^3 at FSL of 55.0 m, and reducing the risk of downstream erosion of 11 cutoffs the flood discharges from the Mezhdurechensk reservoir. The structure is located at the 4P-175 road section. For the time being, it is not operated due to numerous erosion during the floods.

Reconstruction of the dam-road includes removal of the topsoil from the upstream slope and widening the dam crest up to 6 m at the level of 56.5. The dam embankment constructed using loamy-sandy soil with compaction up to 1.6 t/m^3. The upstream side slope is 1: 3.5, covered by impervious blanket bentonite clay 20 cm thick. To protect against the wave impact, rubble stone 50 cm thick is placed along the slope with underlying crushed stone filter 20 cm thick above the geotextile.

To pass the flood discharges from the Mezhdureche reservoir through Maypost Lake to the Amudarya, a spillway will be constructed at the section from PK5 to PK19 of the dam road. The estimated flow rate of the spillway at the flood probability 1% is 1250 m^3/s, the spillway sill s adopted at the level of 55.0m.

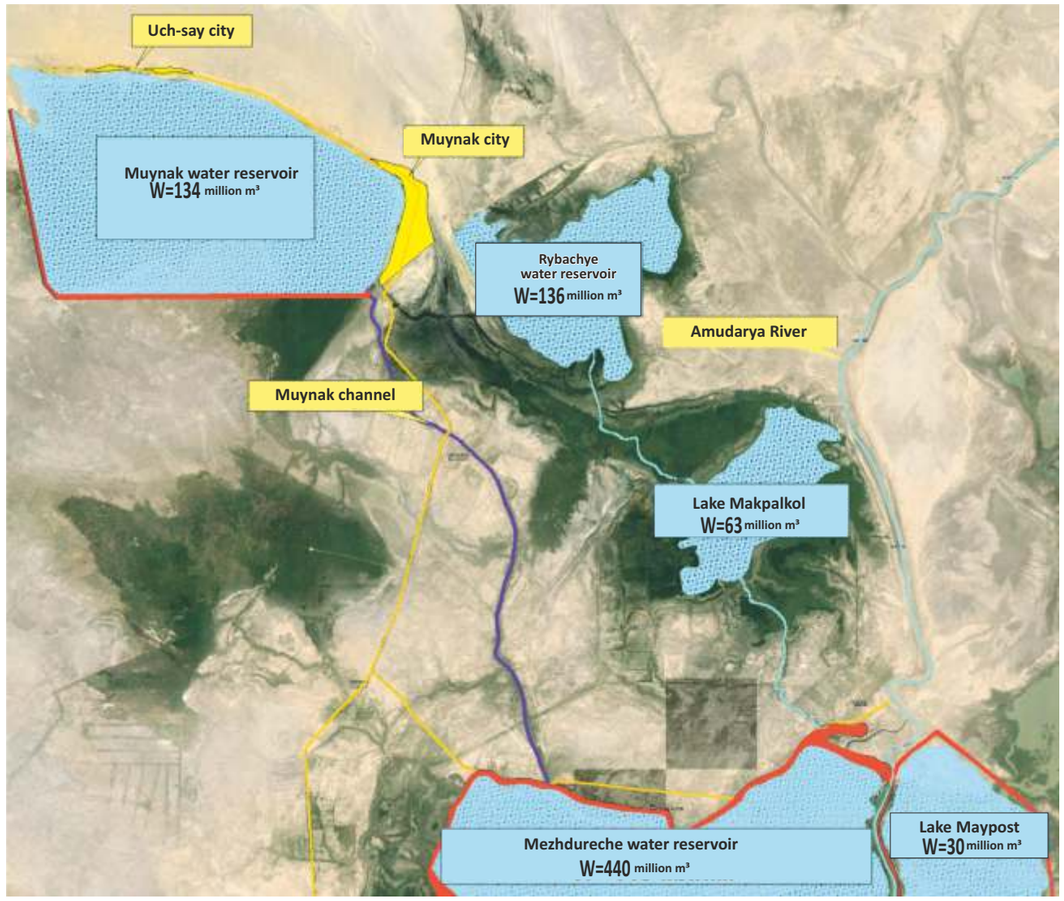
The spillway structure represents weir dam with a flat longitudinal slope of face section, i = 0.33. The width of the spillway front is 1040 m. The upstream water level at the maximum flow of 1250 m^3/s goes up to 55.90, the spillway head is 0.9 m. Metal Larssen sheet pile 8-m long is placed on stilling basin cutoff l to enhance the structure's stability.

For organized and concentrated water supply, intake canal to the structure

will be constructed from Maypost Lake. The diversion canal connects the structure with the Amudarya (Akdarya) river. The project will also provide the construction of a flow guide dam, which will protect Porlytau settlement from flooding during discharges through the structure.

Also, Resolution №37 of the Cabinet of Ministers of the Republic of Uzbekistan dated January 16, 2019 was adopted «On measures for the integrated socio-economic development in the Muynak district of the Republic of Karakalpakstan».

Within the framework of this decree, the Nukus branch of the Executive Committee of IFAS is implementing a project that is part of the FS «Creating small local water bodies in the Amudarya delta. Phase II» – «Reconstruction of Muinak Canal».



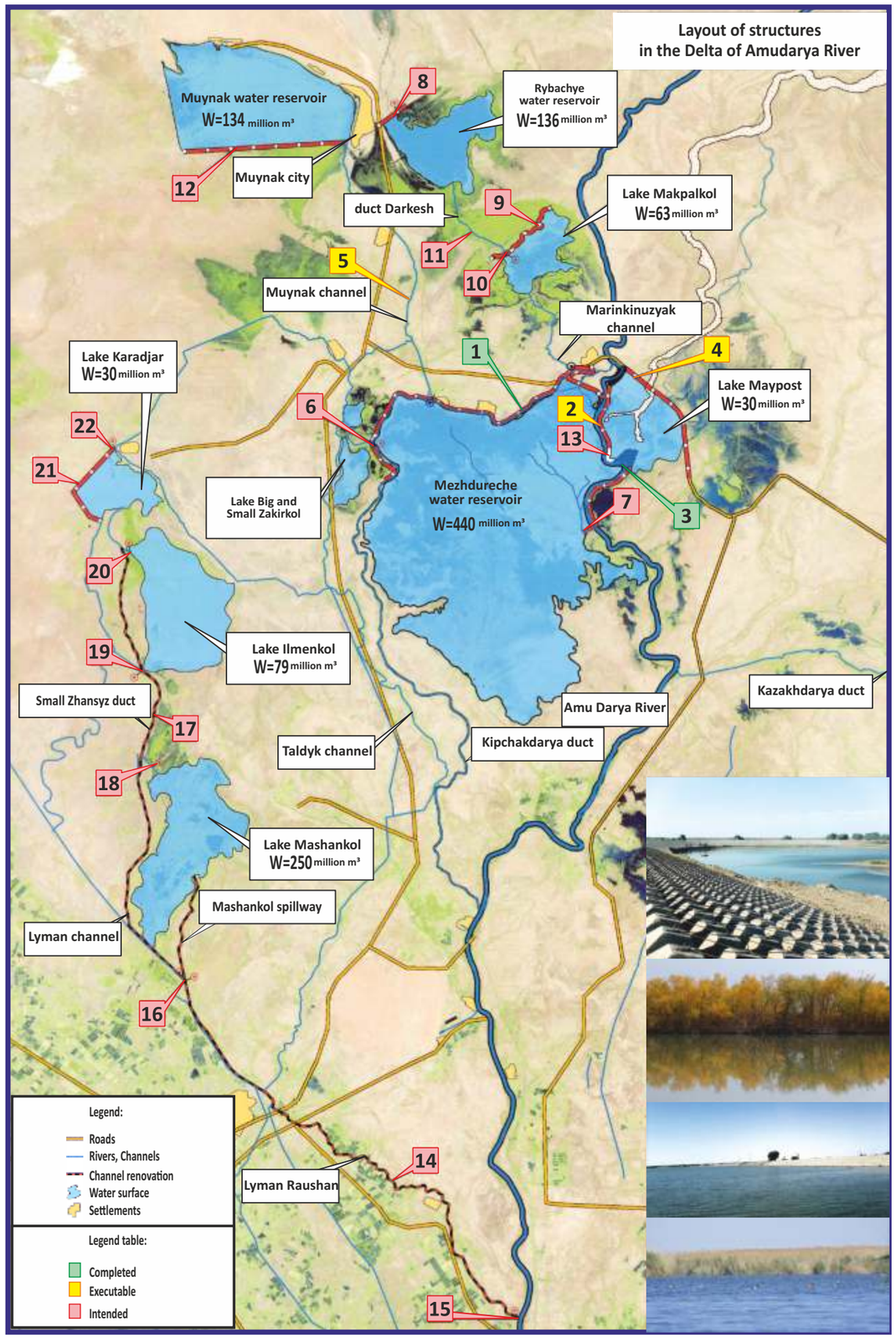
The main purpose of the Muynak canal is to deliver water from the Mezhdureche reservoir to the Muynak reservoir, as well as to provide water to the cities of Muynak, Uchsay and other small settlements. The existing

Muynak canal (Glavmyaso) starts from the Mezhdurechensk reservoir near the Kyzyljar village. Measures along the Muynak canal provide reconstruction of the existing earthen channel at a total length of 21.3 km, the cross-section of which does not meet the design requirements, as well as the construction of a new section 3 km long, to increase water discharge up to 44.3 m³/s.

In 2019 the Ministry of Finance of Uzbekistan has allocated 8346.678 million UZS for the project implementation, including 7676.400 million UZ Sums for construction and installation work. Based on this financial document, a contract was signed between the Nukus branch of the Executive Committee of IFAS and the state unitary enterprise «Zarafshanmakhssussukurilish».

In 2019, construction and installation work is carried out on excavation of the canal bed under «Reconstruction of the Muinak Canal» the project. The site works involve 5 machineries and 10 workers.

Construction of spillway structure from Maypost Lake to the Amudarya River



Creation of small local water bodies in the delta of Amudarya

Within the framework of the obligation of the Republic of Uzbekistan, the project passport «Creation of small local water bodies in the delta of Amudarya».

The composition of the objects of this project (designer – institute of UzGIP) includes:

Phase II structures

1. Completion of restoration and reconstruction of the Northern dam of the Mezhdureche reservoir.
2. Completion of reconstruction of the Eastern dam of the Mezhdurechensk reservoir
3. Account measures to ensure the capacity of 11 outlets.
4. Reconstruction of the dam – the road along the Maypost lake with water spill structure and measures to prevent the development of canyon-forming processes.
5. Reconstruction of Muynak canal (Glavmyaso).

Phase III is a partial continuation of Phase II and the further development of the project.

The main objective of phase III is to complete the construction and reconstruction of facilities that were provided for in the second phase but not funded, as well as new facilities that were originally envisaged in the feasibility study. Among the latter are the restoration of the Mashankul-Karadzhar system of lakes and associated irrigated lands, as well as the flooding of near-lake territories. Phase III includes the following structures:

Structures not complete in Phase II

6. Construction of outlet for flooding of Small and Large Zikirkol lakes and augment of Taldyk canal
7. Reconstruction of Shuak dam
8. Completion of construction of diversion canals and downstream strengthening of the outlets of Rybachie reservoir
9. Construction of protection dam of the Makpalkol lake
10. Construction of outlet from the Makpalkol lake
11. Reconstruction of the Darkesh channel
12. Construction of the South dam of Muynak reservoir
13. Rehabilitation of side spillway from Mezhdurechensk reservoir to Maypost-Domal lakes system.

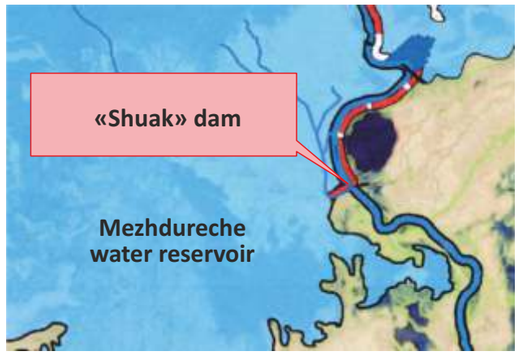
Phase III structures (new)

14. Reconstruction of Raushan canal, 42 km long and flow capacity of 150 m³/s, Liman canal (10 km, 10 m³/s) and Mashankul spillway (8.3 km, 60 m³/s).
15. Reconstruction of headwork on Amudarya River to Raushan canal with the discharge of 150 m³/s.
16. Reconstruction of outlets from Raushan canal to Liman canals (10 m³/s) and Mashankul spillway (60 m³/s).
17. Cleaning of Big Zhansyz offset canal, 20.2 km long.
18. Outlet from Mashankol lake to Small Zhansyz offset canal with the discharge of 30 m³/s.
19. Outlet from Small Zhansyz offset canal to Ilmenkol lake with the discharge of 20 m³/s.
20. Outlet from Ilmenkol lake to Small Zhansyz offset canal with the discharge of 10 m³/s.
21. Construction of protection dam on Karadjar Lake, 10.25 km long.
22. Construction of outlet with the discharge of 10 m³/s from Karadjar Lake

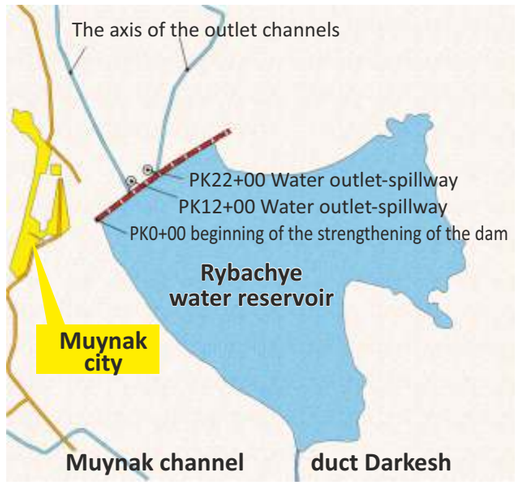
Structures not complete in Phase II

Construction of outlet for flooding of Small and Large Zikirkol lakes and augment Taldyk canal.

Construction of water outlet is expected in the northwest part of the Northern Dam (PK 20+00) of the Mezhdurechensk reservoir, from which it will possible to supply water to the Bolshoi and Small Zakirkol lakes with discharge of 5 m3/s. This flow was calculated based on sufficient inundation of the lakes system within several months and maintain their level considering the evaporation rate.



Reconstruction of the «Shuak» dam. «Shuak» dam is located at the end of the East Dam of Mezhdurechensk reservoir. It is a blind earth dam on Akdarya river. In order to increase the stability of the dam, it is proposed to widen the dam up to the crest width 13-20 m at the level of 59.0. This will involve a compacted embankment downstream the dam.



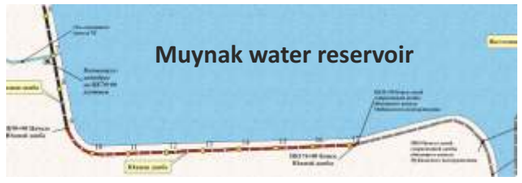
Completion of the construction of diversion canals drainage channels and downstream strengthening of the outlets fixing of the lower water outlets of the Rybachie reservoir. The diversion canals from Rybachye reservoir are located in the northwestern part of the dam and serve to divert water downstream the reservoir so that to establish flowage and divert excess water towards the Aral Sea. The flow capacity of both structures is 30m³/s.

Construction of protection dam on Makpalkol lake [1]. Makpalkol lake is filled with Amudarya water from the Mezhdurechensk reservoir through Marinkinuzak canal. Drawdown from the lake is carried out by gravity through the Darkesh canal towards Rybachye Gulf (at high water levels in the lake).

Construction of outlet from Makpalkol lake [2]. At PK 18+90 of the barrage dam of Makpalkol Lake, the water outlet to Darkesh canal is expected to be constructed. After the reconstruction of Darkesh canal, the outlet in the body of the barrage dam will be able to convey water downstream to Rybachye reservoir.

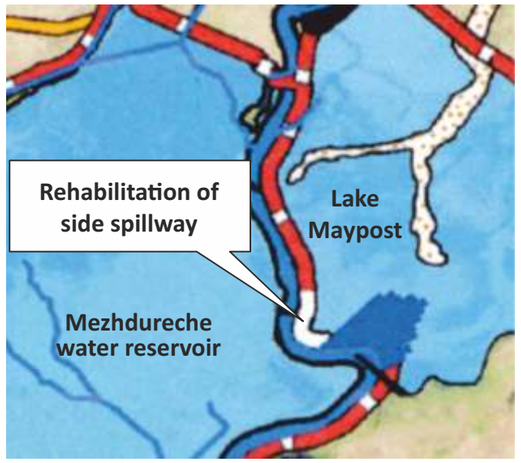
Reconstruction of the Darkesh canal [3]. Under existing conditions, through Darkesh canal, which is one of the ex-left bank channels of Amudarya River, unregulated flood flow from Makpalkol Lake is conveyed to Rybachye reservoir. The project will widen the existing bed up to 20m from the right bank.

Construction of the South Dam of Muynak reservoir.



In order to increase the capacity of Muynak reservoir and ensure its stable operation, it is required to construct the South dam. The beginning of the South protection dam's route is located on the existing Muinak-Uchsay road. The route is straight, from the northwest to the southeast until the PK 90+00. The construction of the South Dam will ensure the increased normal maximum operating level of the reservoir from 51.5 to 52.5 with the impounding amount up to 161 million m3 and complete the construction of the hydraulic structures' system of Muynak reservoir.

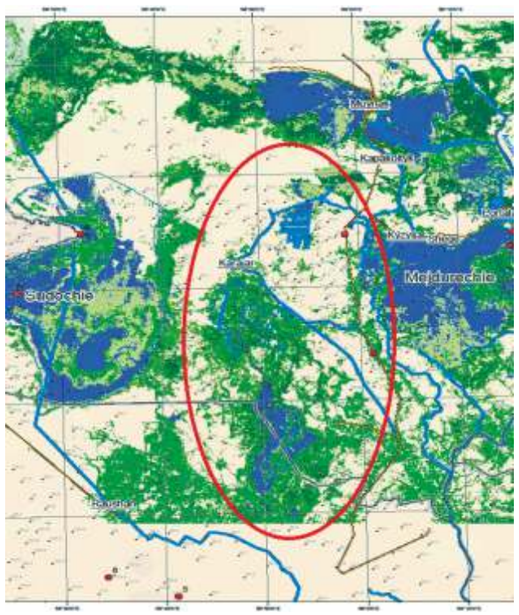
Rehabilitation of side spillway from Mezhdurechensk reservoir to Maypost-Domal lakes system.



Side spillway will be designed for the discharge of 410 m³/s. The side spillway will be located at the East Dam site from PK 17+00 to PK 23+00. The side spillway crest corresponds to the normal maximum operating level 57.0 that makes possible to maintain the water level without erodible cofferdams. Considering that the upstream and downstream ground levels are higher, and also taking into account the measures to maintain the downstream water level (Maypost Lake) at 55.0, reinforced concrete lining of the upstream slope and spillway face have been reduced.

Spillway. Piling sheet pile into the base

New Structures for the Phase III



Mashankul-Karadjar lakes system is located on the left bank zone of the Amudarya delta. Previously it included 21 lakes with total area of more than 70,000 ha. By the late 1960s fishing industry was 1000 tons. According to satellite imagery of 1992, the system was represented by group of lakes with total humidification area of 24,000 ha. In terms of fisheries, the most productive lakes were Koptinkol, Chazhakol, Kanbakly, Zhaungikrkol, Ilmekol, and Keuser. The system is formed by alternating beaded lakes of a different area with numerous connecting streams. Khozhakul, Ilmenkol and Keuser lakes have the most distinctive boundaries. Khozhakul lake is located 25 km northeast to Kungrad. Its formation is closely related to the development of Mashankul lake formed in 1934. The lake receives water through Raushan Canal and combines a number of water bodies forming the Mashankul system, which includes Khozhakul lake with the adjacent water bodies Sazyrkul, Kultykkul, etc.

In general, the Mashankul-Karadjar system has a mixed recharge, including Amudarya water, conveyed to the system through Suenli, Raushan canals, and wastewaters of the Ustyurt collector. The average depth of lakes is more than 1.5 m (2.5-3 m). The maximum depth (11 m) is in Kantakly and Keuser lakes. Fish fauna of the system includes up to 18 fish species.

This system has mostly preserved its natural appearance and biota diversity as compared to other water bodies of the Amudarya delta zone. It should be noted that in the Mashankul-Karadzhar lake system, the second priority is the inundation of pastures in Mashankul, Ilmenkol and Karadzhar lakes area, while the total area of inundated pastures will be 10,000-15,000 hectares.

According to the project, after rehabilitation, the system will comprise 3 main water bodies: Mashankul (7,400 hectares), Ilmenkul (5,200 hectares) and Karadjar (2,020 hectares). Besides, about 3,000-5,000 hectares of pastures and a natural complex, the area of which will be finally defined during the cost-benefit analysis, will be restored.

For restoration of those water bodies, the project will provide the reconstruction of previously existing water supply system through Raushan canal and water distribution system using Small Zhansyz canal; construction of barrage dam and outlet structure nearby Karadzhar settlement. After reconstruction of Raushan canal, water to Mashankul lake will be conveyed

through the Mashankul spillway, which, if required, will be also reconstructed, and through Liman canal for the irrigation of the system's command area.

Water from Mashankul Lake will be supplied through Small Jansyz canal to Ilmenkul and Karadjar lakes. Water supply and water levels are expected to be regulated by 3 hydraulic structures located on Small Zhansyz canal.

Terms of Reference given to the design Institute UzGIP for Feasibility Study and Cost Calculations on the new structures within the project «Creation of small local water bodies in the delta of Amudarya» – Phase III

List of main data and requirements	Content of requirements and data
Project rationale	Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated May 3, 2018 and Order of the Cabinet of Ministers of the Republic of Uzbekistan No. 965-F dated November 16, 2018.
Project title	Feasibility Study «Creation of small local water bodies in the delta of Amudarya» – Phase III
Project Initiator (Client)	Nukus branch of the Executive Committee of IFAS Nukus, A.Dosnazarov str. 64A Republic of Karakalpakstan Tel: 0361, 222-78-05, fax 222-90-96
Name of design Institute	Design Institute UzGIP in accordance with Order of the Cabinet of Ministers of the Republic of Uzbekistan No. 965-F dated November 16, 2018.
Total Project Cost	129500 billion UZ Sums (in prices as of 01.01.19. including VAT)

According to the project implementation results, the stable water level will be provided in water bodies of the South Aral Sea Region

This will make it possible to obtain a stable growth of vegetation (reeds, forbs, pastures) used as fodder for cattle and other fauna in the region (fish), which in turn will bring additional income to the local population. The number of livestock and the number of farmed fish will also increase.

Structure	Water surface elevation, m	Dam top elevation, m	Surface area, km²	Capacity, Mio. m³	Dam length, km
Muinak reservoir	52,5	54,0	97,4	162,2	19,3
Rybachye reservoir	52,5	54,0	62,4	134,2	8,0
Mezhdureche reservoir	57,0	59,0	267,4	421.2	53,33
Dzhiltyrbas	52,0	53,5	353,0	372,4	39,0
Sudochie	52,3		350	700	
Total			**1130,2**	**1790**	**119,63**

Economic effect of water bodies establishment project in South Aral Sea Region

Net present value, “000 US Dollars	48 432,59
Internal rate of return, %	28,33
Discounted payback period, years	9,60
Payback period, years	8,60

Forest plantation at dried bed of the Aral Sea

Effective method for preventing salt and dust transportation, as well as for sand stabilization, localizing the negative impact on the environment, ecological situation rehabilitation, creating in the future a stable base for distant pasture, is the protection planting of local brushwood and ligneous plants capable to grow in heavy soil and climatic conditions of deserts with scanty rainfall.

Saxaul planting at the Aral Sea bed

According to observations of specialists, the wind speed under annual plants is reduced by 20.5%, biennial plants – by 34.6%. At the age of 4-5 years, the natural grassland vegetation appeared under the canopy of forest plantations, as well as natural re-growth of saxaul and saltwort, will cause a sharp reduction of the wind speed and deflation. Along with that, plantations are accumulating sand.

Tree and shrub vegetation, accumulating sand and, which are intended to be as a buffer, release oxygen and absorb carbon dioxide. As the study showed, saxaul features the maximum absorption of carbon dioxide of 1159 kg/ha and the release of oxygen of 835 kg/ha at the age of 4 years. At the same age, saltwort has its maximum ability to absorb carbon dioxide – 1548 kg/ha, and release oxygen1166 kg/ha. Planting desert species, absorbing carbon dioxide and releasing oxygen, although to a lesser extent than coniferous and deciduous tree species, is the only efficient barrier to the

Alectoriscnukar

Vulpes corsac
Photo: Goncharov G.F.

Джейран (Gazella subgutturosa)
Photo: Sorokin A.V.

movement of shifting sand, creating around a favorable microclimate for the development of flora and fauna in the protection zone.

In order to improve the environmental situation in the Aral Sea Region and the ecological rehabilitation of the Aral Sea basin, the countries are carrying out significant work to restore a biodiversity and delta ecosystem, in particular, plantation of local brushwood and arboreal plants, the area of which for the past 20 years has reached 483,000 ha, i.e. 9.4% of the total area of the Aral Sea dried bed. Forest plantations are carefree and due to the natural spread of seeds, the vegetated areas are continuously expanding. This area needs only protection from logging, carried out by state forestry organizations (Leshoz). Currently, the processes of blowing salts and sand into the atmosphere in the zone of planting have stopped; and now there appeared different kinds of wild animals – pheasants (PhasianusColchicus), partridge (Alectoriscnukar), bustards (Otididae) hares (Leporidae), corsacs (Vulpes corsac), foxes (Vulpes), wolves (Canis lupus L.), saigas (Saiginae), gazelles (Gazellasubgutturosa), there are also kulans (Equushemionus).

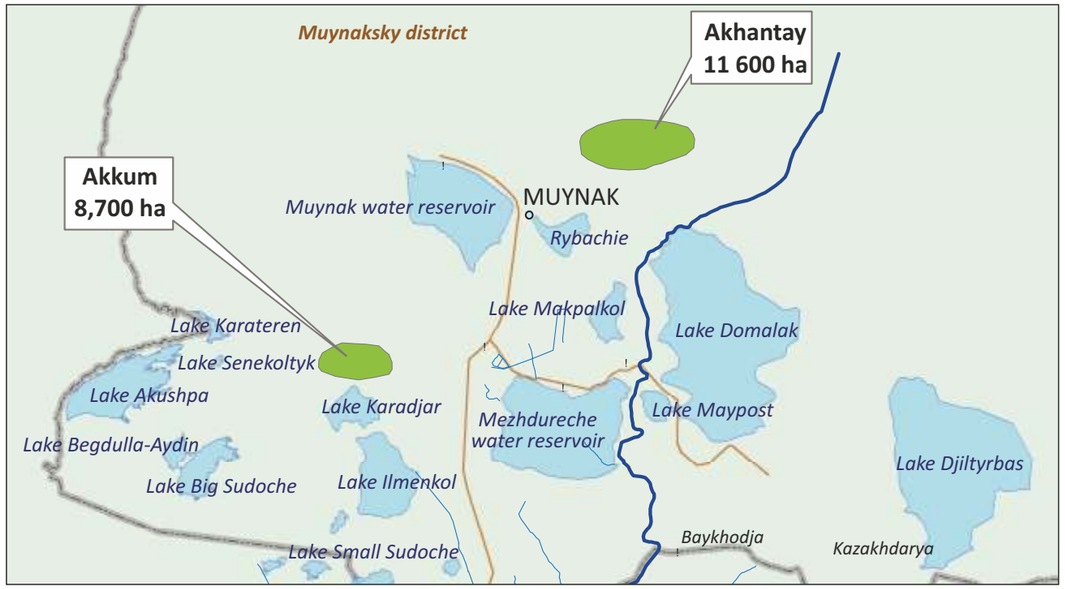
The forest plantations and stabilization of sands on the dried Aral Sea bed within the territory of Uzbekistan have been carrying out since 1980. Since 2000, the international organizations, in particular, German Development Cooperation Agency (Deutsche Gesellschaft fur Internationale Zusammenarbeit (GIZ), International Fund for Saving the Aral Sea, World Bank, Global Environment Facility (GEF), Japan Environmental Fund, Embassy of Japan, etc. has joined this work. Thus, due to various

sources of financing, the Republic of Uzbekistan afforested an area of 350,700 ha in the last 17 years. Forest improvement at the area of 321,800 ha was financed by the Government, at 27,000 ha – by GIZ (Germany), at 1,500 ha- by the Kofutis NGO (France), and at 11,000 ha by IFAS.

There is also about 1,5 million ha suitable for forest plantations and stabilization of sands on the dried Aral Sea bed and the adjacent territory in the South Aral Sea Region.

The Integrated Program for 2015-2018 also includes two projects «Development of protective forest plantations of local trees and shrub plants on Akhantay site and Akkum ridge of the Aral Sea dried bottom».

Scheme of afforestation in the framework of the Comprehensive Program for 2015-2018.



The objectives of the project are as follows:

Akhantai site: reduced wind erosion, stabilize moving sands and prevent salt and dust entering Muynak city, and surrounding settlements and farming areas.

Akkum site: reduced wind erosion, stabilize moving sands and prevent salt and dust entering Karadjar settlement and Sudoche Lake.

At Akhantai site the project will provide the development of protective forest plantations of local trees and shrubs at the area of 11660 ha on the Aral Sea dried bed.

This includes:

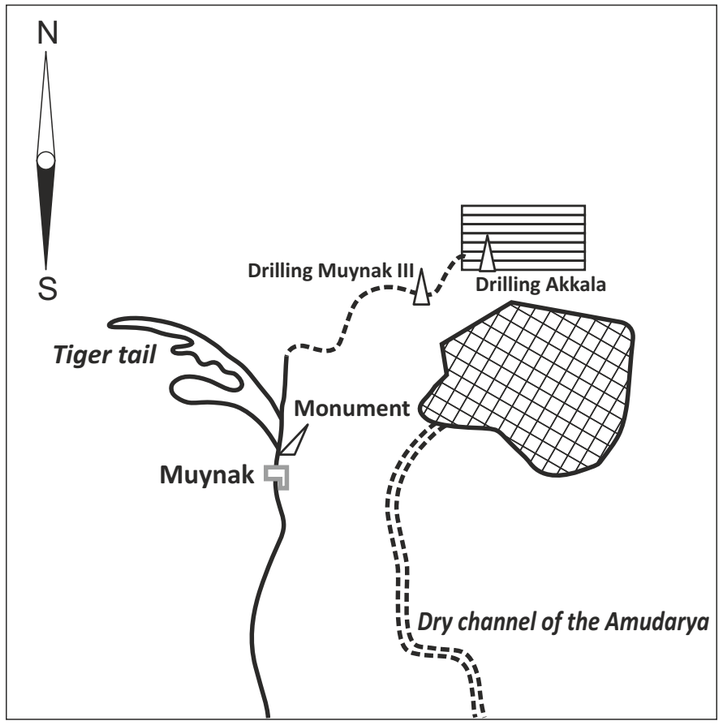
- afforestation of territories without terrain fixation on sandy plains by arranging sand-accumulating furrows every 10 m with seedlings of black saxaul and Richter's saltwort planted on them, while on the degradation, fixed hilly sands, inaccessible for machines and mechanisms and machinery, manual seeding of saxaul black;

- sand stabilization and afforestation with terrain fixation, performed on barkhan sands elevations by arrangement of ordinary sheltered mechanical protection on 2/3 of the shallow slopes every 3 m, planting along saxaul seedlings and Kandym cuttings in the spring.

The Project implementation period is 2017 to 2019.

The Government's contribution is 1663.4 million UZ Sums.

Growing transplants on «Akhantay» site



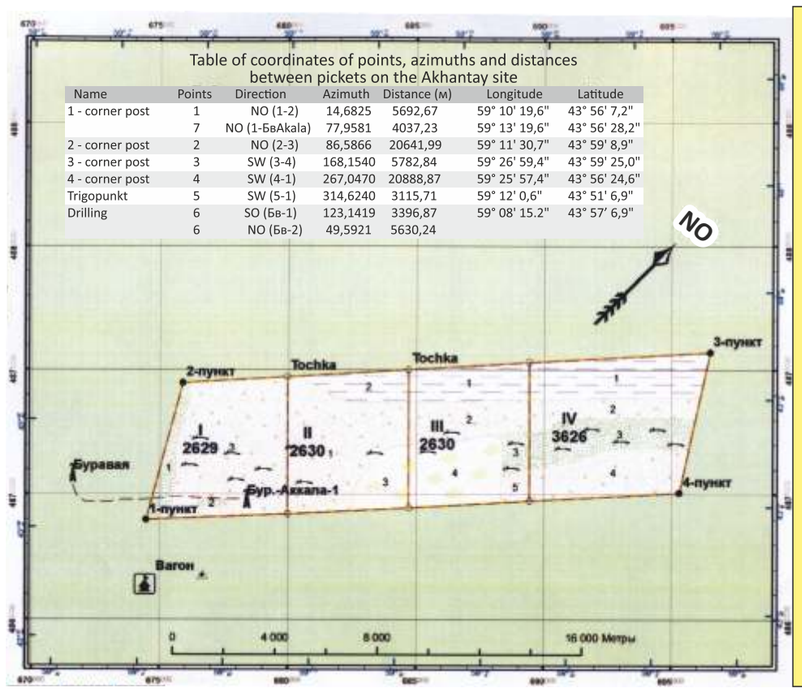
Layout of «Akhantay» site

Legend

- Activities site
- Crops and planting of Muynak forestry
- Drilling
- Monument
- Settlement
- Asphalt road
- Earth road
- Dry channel of the Amudarya

Table of coordinates of points, azimuths and distances between pickets on the Akhantay site

Name	Points	Direction	Azimuth	Distance (м)	Longitude	Latitude
1 - corner post	1	NO (1-2)	14,6825	5692,67	59° 10' 19,6"	43° 56' 7,2"
	7	NO (1-БвАkala)	77,9581	4037,23	59° 13' 19,6"	43° 56' 28,2"
2 - corner post	2	NO (2-3)	86,5866	20641,99	59° 11' 30,7"	43° 59' 8,9"
3 - corner post	3	SW (3-4)	168,1540	5782,84	59° 26' 59,4"	43° 59' 25,0"
4 - corner post	4	SW (4-1)	267,0470	20888,87	59° 25' 57,4"	43° 56' 24,6"
Trigopunkt	5	SW (5-1)	314,6240	3115,71	59° 12' 0,6"	43° 51' 6,9"
Drilling	6	SO (Бв-1)	123,1419	3396,87	59° 08' 15.2"	43° 57' 6,9"
	6	NO (Бв-2)	49,5921	5630,24		



WORKING DRAFT

to create protective forest stands on the site «AKHANTAY» of the drained bottom of the Aral Sea from local tree-shrub plants

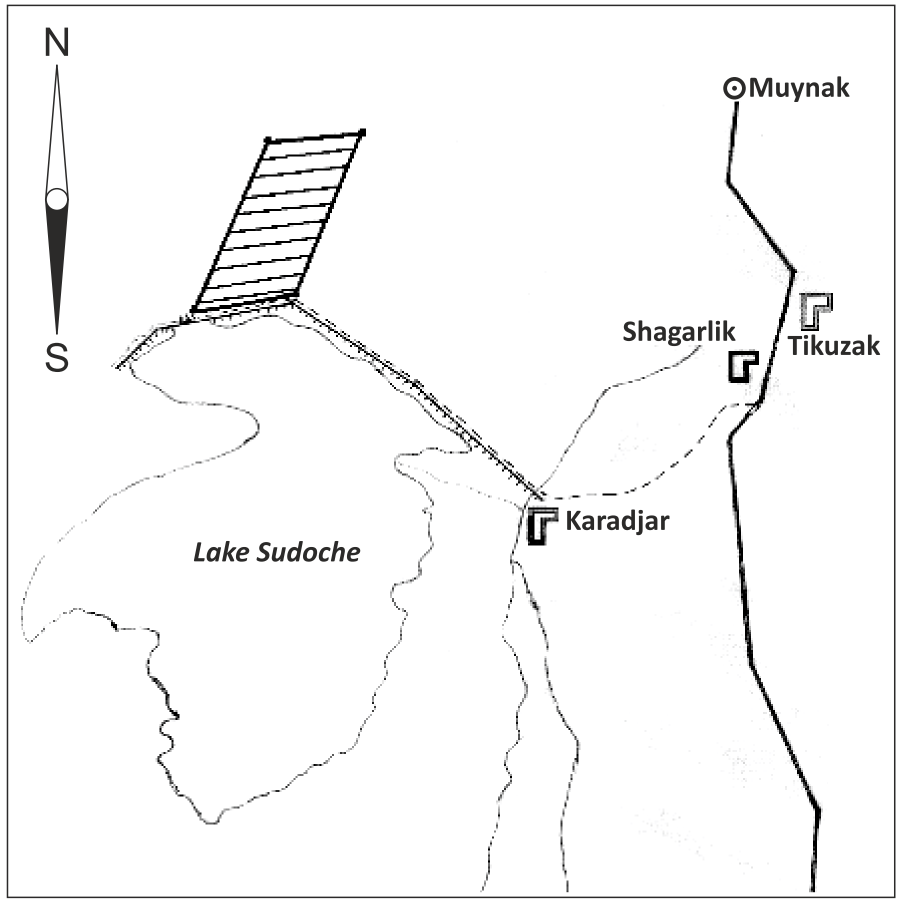
Legend

- Sample Points
- Boundary Boundaries
- Quarter tables
- Railway carriage
- Drilling
- Trig. point
- Barkhan
- Saxaul
- Road
- Highlighted

N

Scale 1:150 000

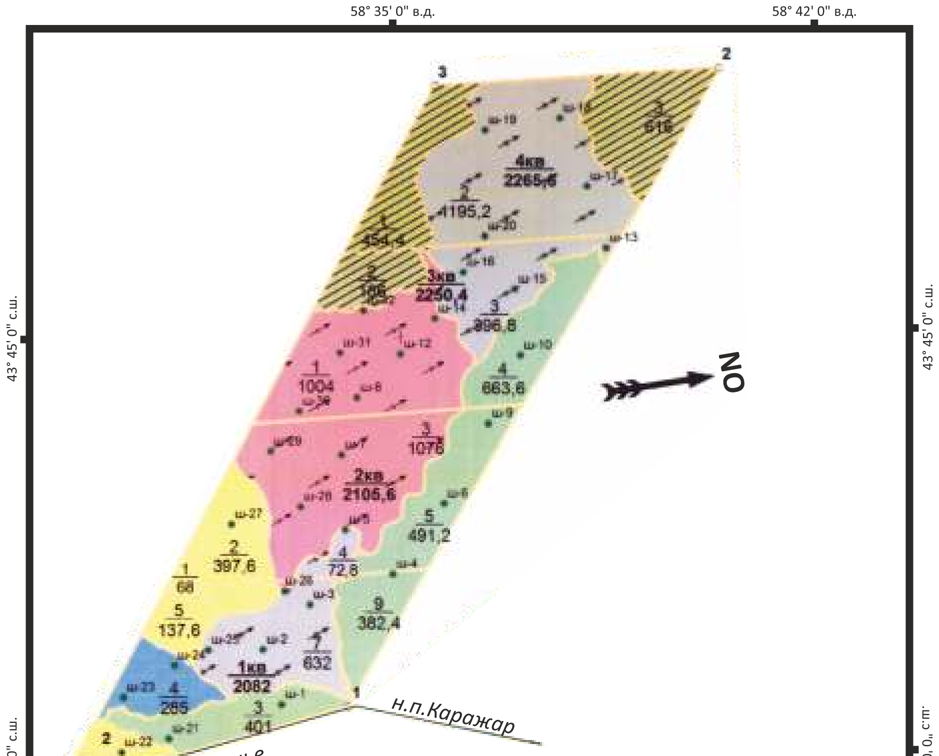
Growing transplants on «Akkum» ridge



Layout of «Akkum» site

Legend

- Muynak District Center
- Settlements
- «Akkum» structure
- Dam
- Activities site
- Earth road
- Asphalt road
- Collector



WORKING DRAFT

to create protective forest stands on the site «AKKUM» of the drained bottom of the Aral Sea from

Legend

- Control point
- Boundary Boundaries

Land

- Barkhan
- Hrb
- Bush
- Low dune
- Other
- Plain
- Saline

Масштаб 1:100 000

Table of coordinates of points, azimuths and distances between pickets on the Akkum site

Name	Points	Direction	Azimuth	Distance (м)	Longitude	Latitude
1-corner post	1	NO (1-2)	30	16500	58° 34' 2,65"	43° 40' 34,7"
2-corner post	2	SW (2-3)	266,5	6360	58° 40' 24,6"	43° 48' 11,4"
3-corner post	3	SW (3-4)	208,5	17778,8	58° 35' 41,2"	43° 48' 4,64"
4-corner post	4	NO (4-1)	74,5	6700	58° 29' 10,0"	43° 39' 40,3"

Akkum ridge project will provide 8703.6 ha of the protective forest plantations of local tree and shrub plants on the Aral Sea dried bed. The project implementation period is 2017 to 2019. The Government's contribution is UZS759.3 million.

Seedlings sprout on the ridge «Akkum»

Photo: M.Ganiev

Construction of water intake structures with desalination plants in Takhtakupyr district of the Republic of Karakalpakstan

The aim of the project. Installation of two desalination plants to provide drinking water to settlements «Karabayli» and «Orkendiaul» of Takhtakupyr district of the Republic of Karakalpakstan.

Within the framework of the project, water intake structures have been constructed in each settlement, including:

- water well with pumping unit;
- reservoirs for source and desalinated water with a capacity of 50 m^3;
- buildings for desalination plant with the capacity of 6 m^3/h and pumping station of the second stages lift;
- water tower with the capacity of 25 m^3;
- site communication networks;
- power supply;
- improvement of the territory, etc.

After completion of the project, of «Karabayly» and «Orkendi» settlements in Takhtakupyr district with a total population of 812 habitat have been provided with high-quality drinking water sanitary and the epidemiological situation has been improved. The Project cost is 2474.34 million UZ Sums.

Under the project, one well was drilled in each settlement up to 500 m deep, and desalination equipment was installed. Water supply network w 11.5 km long and more than 10 distribution points of desalinated water have been constructed.

The desalination plants constructed made possible to reduce the salinity of water supplied to settlements from 2 g/l to 0.52 g/l.

On January 3, 2015, these structures have been officially opened. The opening ceremony was attended by Acting Chairman of the Executive Committee of IFAS Shavkat Khamraev, Chairman of the Council of Ministers of the Republic of Karakalpakstan Bahadir Yangibaev and representatives of the public of the Republic of Karakalpakstan, as well as media representatives.

Desalination plant and pumping station building, water tower (25 m^3), 50 m^3 water tower

Desalination plant and filter

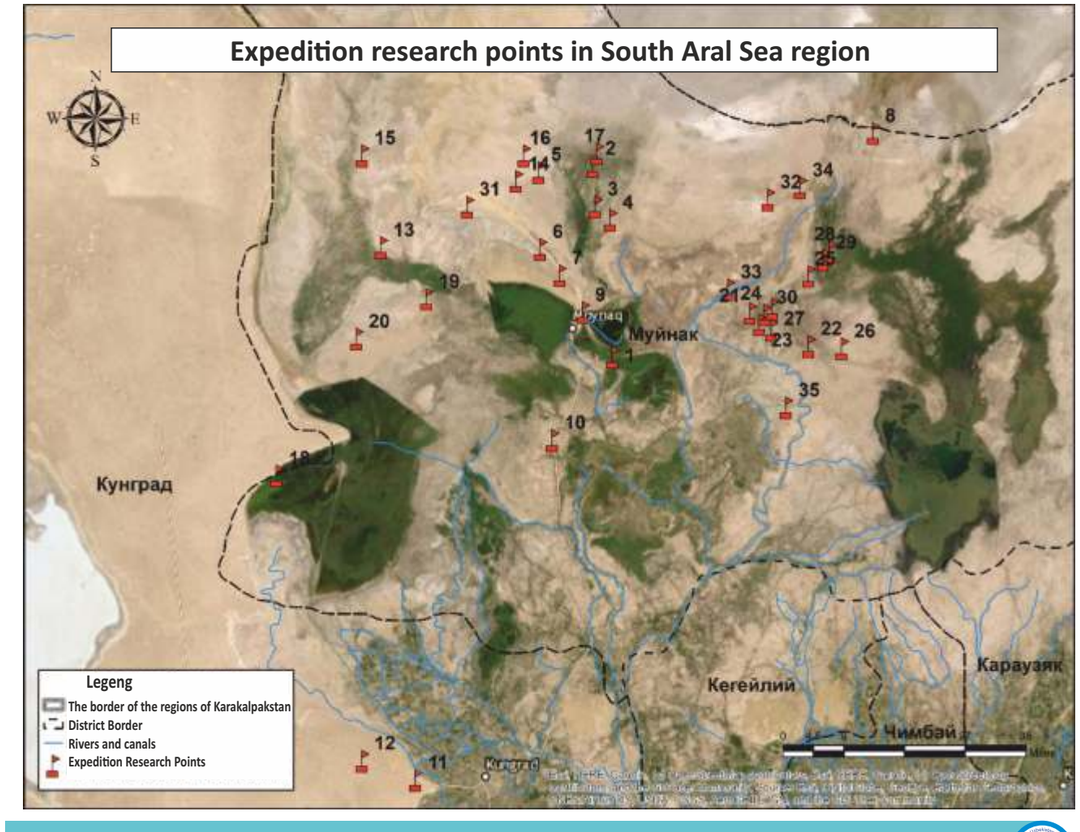
Water pumping units

Monitoring of biodiversity of the wetlands in the South Aral Sea Region

The implementation of the project «Monitoring of biodiversity in wetlands of the South Aral Sea region» is carried out in accordance with the Decree of the President of the Republic of Uzbekistan dated January 18, 2017. No. PP-2731 and Order of the Cabinet of Ministers of the Republic of Uzbekistan dated February 14, 2017 No. 131-f and financed by the grants of donors and financial institutions.

The objective of this project is to conduct monitoring of wetlands in the South Aral Sea region, which has a special environmental value, on Sudochye, Domalak and Rybachy lakes. The data obtained during the monitoring on the availability and number of biota species in the region make possible to assess the current state and conduct retrospective analysis and trends in their changes.

The agreement was signed between IFAS Agency and OSCE Project Coordinator in Uzbekistan on 07.07.2019 for the implementation of this project. In 2019, the project is also implemented with the funds of OSCE in Uzbekistan involving the scientists and specialists of the Karakalpak Research Institute of Natural Sciences of the Karakalpak branch of the Academy of Sciences of the Republic of Uzbekistan.



Birdlife Lake Sarbas (Rybache)

Red fox

Reeds

Pink flamingos on Sudochye lake

Ornithological monitoring of water bodies in the South Aral Sea region

The objective of the project is to study and assess the ecological state of delta reservoirs, components of biodiversity through the organization of ornithological expeditions twice a year (during nesting and migration) by specialists of the Society for the Protection of Birds of Uzbekistan and the Institute of Biology of the Karakalpak Branch of the Academy of Sciences of the Republic of Uzbekistan.

For the implementation of the project, IFAS attracted grant funds from the OSCE in Uzbekistan and GIZ.

The main objectives of the observation are:

- collection of data on the species and quantitative composition of the aqua-fauna in wetland systems;
- identification of the main threats to the habitat by species;
- training and advanced training of young specialists – biology students of the Karakalpak State University.

The study is mainly focused on rare and biome species, as well as to large concentrations of waterfowl. Accounting is carried out using optical tools. Based on the results of the expeditions, by the end of 2019, a report on the state of flora and fauna will be prepared, recommendations will also be given on improving the environmental situation in the South Aral Sea region.

In total, during the observation period in 2015-2019, more than 230 bird species were recorded on Sudochye Lake, including 12 species that are under the global threat of extinction, as well as 3 species included in the Red Book of Uzbekistan. During migrations, waterfowl of 20 species form clusters of up to 86 thousand individuals on the lake. Sudochye Lake is a source of rich food for many species of migratory birds.

In recent years, the number of pink flamingos has increased significantly that rest and nest during flights on Sudochye Lake. In May 2014, a colony of 7 thousand pink flamingos and about 3 thousand nests was recorded in the eastern part of the lake. This is the largest colony in Uzbekistan, it makes up 1.4% of the global flamingo population. Colonies of pink flamingos are noted in many places of Karakalpakstan, such as Renaissance Island, Muynak, West Karateren Lake, Shegekul (Mezhdureche Reservoir), Sarykamysh Lake, Zhaltibars, and the right bank of the Amudarya.

Flamingos on Sudochye Lake

Swans on Lake Mashankul

Coot on Lake Sudoche

Sudoche Lake

Organization of social assistance to the population of the Aral Sea region

The Project of the Nukus branch of the Executive Committee of the International Fund for Aral Sea «Organization of social assistance to the population of the Aral Sea region»

In 1998 -2013, Nukus Branch of the Executive Committee of the IFAS was implementing «Social Assistance to the Population of the Aral Sea Region in Adaptation to Market Conditions in the Zone of Environmental Crisis» Project financed by the Government. The project has financed 6165 subprojects on repayment basis with the total amount of UZS 13,063.1 million, and 9,239 new jobs have been created.

In July 2013, according to the Minutes No. 02-08/5-07/463, dated 02.07.2013 of the Coordination Council for the Aral Sea Region Problems under the Council of Ministers of the Republic of Karakalpakstan, the Project was suspended in light of the issued in 2010 Law on Microcredit Organizations, which states that only licensed organizations can provide the microcredits. The Nukus Branch of EC IFAS has no license required. To date, the project funds after full return to the deposit account amount to UZS 2.2 billion.

In March 2017, the Coordination Council for the Aral Sea Region Problems under the Council of Ministers of the Republic of Karakalpakstan prepared Protocol «On the Resumption of «Social Assistance to the Population of the Aral Sea Region» Project of the Nukus Branch of the Executive Committee of the International Fund for Saving the Aral Sea to create new jobs in the Republic of Karakalpakstan. The Nukus Branch of the Executive Committee of the IFAS was assigned to implement the project based on special terms and conditions in the agreement with Agency of IFAS.

The objectives of the project are to extend microfinancing activities of the organization by providing microcredits, micro leasing and microloans in selected regions of the Republic of Karakalpakstan, i.e., Muynak, Takhtakupyr, Kegeli, Kungrad, Kanlykul, Shumanay, Karauzyak, Chimbay, Khodjeyli, Nukus and Nukus.

The project is expected to finance at least 90 business projects involving microcredit and micro-leasing with the condition of creating at least 200 new jobs intended to:

- establish, develop and extend small and medium-sized industries, family entrepreneurship, centers of paid domestic, medical, veterinary and agrotechnical services;
- establish private structures to improve the quality of life of the population: manufacturing of furniture, car routine maintenance and repair, home appliances and office equipment;
- arrange small-sized production of agricultural and local raw materials, building materials, develop traditional folk crafts;
- develop small-sized and private agro-business in rural areas (trade, cattle breeding, farming, small-sized production and services)
- establish new and upgrade existing industries of organic, import-substituting food and beverage production;
- restore old and organize new fish production in internal water bodies and its processing to provide the population with light animal proteins;
- arrange and develop entrepreneurship in the trade sector, rendering commercial services to the population.

Also microcredit organization is supposed to provide microfinance services in the form of microloans for at least 97 individuals to meet their requirements in borrowing for household management (including microbusiness) and personal needs (treatment, training, tourism, events, for small business owners, acquisition and re-equipment of vehicles and household appliances, etc.).

IN TOTAL in 1998-2019, Agency of IFAS, jointly with the Nukus branch of the Executive Committee of IFAS, has implemented the projects with total amount of 65,265,000 US dollars.

ARAL SEA REGION DEVELOPMENT PROSPECTS

The survey of the western deep-water part of the Aral Sea showed that microalgae are growing here in large amounts due to an excess of nutrients and microelements in seawater.

Artemia sinica

Such a favorable nutrient medium allowed the development of a large number of Artemia crustaceans. In recent years, mining of Artemia cysts has been actively developing in the Aral Sea, based on which products are produced that have prospects for widespread use in various sectors of the economy – both in the Republic of Uzbekistan and in foreign markets. Products based on cysts of the Aral Artemia are completely new – innovative for the economy of the Republic of Uzbekistan.

This area of activity provides significant prospects for resolving several socio-economic issues of the Aral Sea population in terms of creating new jobs, substantial budget revenues and increasing the export potential of the Aral Sea region.

In 2017, in accordance with the Decree of the President of the Republic of Uzbekistan PP-2803 dated February 28, 2017, the Association of Producers and Processors of Artemia Cysts of the Aral Sea was established in Muynak District, which includes several enterprises working in this direction.

At the same time, several systemic problems have matured in this area that hampers the effective use of the natural resources of the Aral Sea Artemia. The presence of these problems can lead to the irretrievable loss of all positive economic and social benefits from the further use of the unique biological resource of the Aral Sea Artemia.

There are prospects for the industrial cultivation of Dunaliella microalgae (Dunaliella spp.), which will allow the production of β-carotene and vitamins B and C for export. You can arrange the production of various cosmetic and therapeutic ointments and creams from oily sludge. You can also create a therapeutic and recreational resort area. There is a technology for

cultivating a commercial culture-licorice, by washing salts from solonchaks in certain areas of the dried sea day using mineralized waters. On this basis, the industrial production of glyceric acid can be established.

Liquorice

In some places, under the patch of the Ustyurt plateau, placers of valuable minerals of zircon, ilmenite, titanium, and others have been discovered. Additional geological exploration is necessary to justify the industrial mining of these rare metals. On the former island of Lazarev, geological exploration of limestone-shell limestone was carried out with a total reserve of up to 2.5 million m3. These are raw materials for the production of wall blocks, cladding plates, building lime and lime flour for the preparation of animal feed.

Thickets of reeds and reeds in the created system of small local reservoirs in the southern Aral Sea region reach industrial proportions and can become raw materials for the production of paper and chipboard.

Wetlands of South Aral Region

In 2016, the State Unitary Enterprise «Muynak Aqua Sanoat» was created under the Khokimiyat of the Muynak region, which is intended to develop the fishing industry in the Aral Sea region to provide the population with high-quality fish products. The territories adjacent to the water areas of the Zhaltyrbas, Sudochye and Rybachye lakes are allocated to this enterprise for organizing hatcheries and incubation workshops. The State Unitary Enterprise «Muynak Aqua Sanoat» is currently engaged in stocking these reservoirs with bringing the number of fish to 2.5 million pieces per year. It is supposed to bring fish production to 3.5 thousand tons per year. Currently, SUE «Muynak Aqua Sanoat» is looking for sponsors for the construction of a fish processing workshop and the production of semi-finished products with an annual capacity of 375 tons, as well as the construction of refrigerators with a capacity of 300 tons.

In April 2019, the Agency of IFAS and the Consulting Center "ECOSERVICE" submitted a joint application to the MPTF for implementation of the project **«Scientific fundamentals for ecosystems recreation around the Western part of the Aral Sea and pre-feasibility study for promotion of eco-tourism in this area».**

Goal and Objectives: organize experimental station on the Western Aral for monitoring of real and changing situations, testing ecological innovations and technologies for their wider practical implementation, and support eco-touristic services.

Proposed project program

Based on own long-term experiences with piloting innovative technologies and experience of Israel in Dead Sea, Great Salt Lake in the USA and other international experiences in similar conditions to organize experimental station on the Western Aral for testing those innovations and technologies addressing to increase the productivity of existing natural recourses in this area.

First, for better understanding of the real situation, it is proposed to hold integrated monitoring of natural recourses of the Western Aral and adjusted territories, using remote sensing approaches. This will include the following directions:

- Investigation of hydrochemistry, hydrobiology, morphometry, water regimes, stratification of salt and temperature on lake profile;
- Investigation of salt aerosols, brain water and bottom mud quality, their impact to human health, comparing indexes with international standards;
- Investigation soil structure and salinity, plant coverage, hydrogeological state of subsurface water and its salinity in littoral zone of the lake, where are forming main salt deposits impacted to wind blows;
- Investigation of plant and animal biodiversity in Chink of Usturt plateau and drinking water sources;
- Investigation of anthropogenic impact of soil and plant degradation and wind blow activity, under chaotic movement of transport, geological activity, chemical soda plant and natural gas processes plant for polymer materials, destroying wells for water supply on Plateau Usturt

For those works there will be organized Project field camp on the Western Aral (trailer with all necessary field kit, equipment, etc.). The needed experts (from Tashkent and Nukus) will come to work 5 times (10 days each time) during 18 months period (ones per each three months/season). Technicians will be recruited from local people in Muynak.

Second. For those conditions, several innovations and technologies will be tested for wider practical implementation. The following could be suggested:

- construct pilot flumes for testing three species of valuable microalgae Dunaliella spp. using brine water from the West Aral, supplying them by optimal regimes of feeding materials, trace elements, aeration and temperature for increasing their productivity;
- construct 4-6 pools for investigation of settle valuable salts: KC, $MgSO_4$, Na_2SO_4 , MgCl2 using sunny evaporation and vacuum evaporator;
- test technology of condensation water from air, using ancient sardoba (closed well) constructed in cylindrical form covered with ceramic cupola. The construction will create whirlwind and cold condense water from air in summer (hot) period;
- to test technology for greening and increasing productivity of degraded pastures on Usturt plateau by creation «oasis irrigation» for cultivation of desert and high productivity fodder crops, irrigated by stationary sprinkler. Water for irrigation could be used from pumped shaft-wells mixed with rainwater, harvesting on takir soils, which will be preliminary leveled and covered by polymer films;
- to construct greenhouse with area 0.2 hectares to organize a nursery for selection of desert plants and different halophytes and vegetables by organic method.

Greenhouse will be heated by innovation methods:

1) using sun ponds with brine water accumulating hot water near bottom with temperature -90°C;

2) using heat pumps using differences of temperature in deep groundwater and air.

For those works there will be used the same Project field camp on the Western Aral (trailer with all necessary field kit, equipment, etc.). There will be permanently one Senior supervisor and one technician in the camp. Needed experts (from Tashkent and Nukus) will come to work in accordance with agreed time-table. Technicians will be recruited from local people in Muynak.

Third. As this area is subject for eco-touristic interests, we are proposing to undertake Feasibility study and prepare the recommendations on development of touristic-recreation complex in the Western Aral Sea along Great Silk Road.

For those works field expedition will be organized around the Western Aral and Usturt Plateau. The required experts (from Tashkent and Nukus) will be

involved in accordance with agreed project schedule. Technicians will be recruited among the residents in Muynak.

Fourth. It is proposed to organize several study trips abroad to bring innovations and technologies to the Project area:

Russian Federation:

St. Petersburg – to bring in experience from the Institute of Galurgy on evaporation from the brine water of Western Aral and processing salt reserves in the Barca-Kelmes salt marsh (17 billion tons);

Moscow State University and Institute of Plant Physiology – possibility of cultivating drought and salt-tolerant varieties of amaranth and its processing; experience with cultivating halophyte seedlings on the dried bottom of the Aral Sea; cultivation of microalgae Spirulina, Dunaliella and others, and their processing;

Volgograd – experience with sprinkler installations;

Astrakhan experience using halophytes to combat land salinization in Agricultural Institute, and experience in combating desertification in Kalmykia.

Israel:

experience in using the natural resources of the Dead Sea for the rehabilitation of patients and obtaining valuable products; cultivation of microalgae and production; air-conditioning of drinking water.

Germany:

Experience in cultivation of microalgae in closed tubes;
Experience in use of aquaculture using marine fish;
Natural methods of wastewater treatment.

United Arab Emirates:

Experience in use of halophytes and salt-resistant forage crops, combating salinization of land using biological drainage

Fifth. To achieve proper results and outputs, as well as for efficient organization of all fieldworks during and after the project interventions, the Project will organize field camp on the Western Aral, and purchasing of equipment and necessary tools and goods, which will be needed in line with project activities.

Sixth. The Project will organize a number of workshops (minimum four) to discuss and disseminate the results and publications. Also, respective public

awareness campaign in mass media will be organized

The Agency of IFAS signed a memorandum with Mainsocket Co. Ltd. from South Korea on cooperation in resolving the environmental problems and improving the social and environmental problems of the Aral region in Uzbekistan, environmental education of the population, and informing the public about environmental issues.

Mainsocket Co. Ltd., in partnership with Daesung Measuring Co., Ltd, based on an agreement with the Uzstroymaterialy Association, intends to launch a plant in Jizzakh for production of electronic water , gas and electricity meters in 2019. According to the above memorandum, the Korean side will pay one percent of its income to a special account of the Agency of IFAS for implementation of joint programs in the Aral Sea region. A business plan for using the funds of this special account is under preparation.

According to the terms of the memorandum, all activities for the use of these funds in the Aral Sea region will be carried out using the logo with the image of Teddy Bear and Saigak, which personifies purity and kindness.

Mainsocket Co. Ltd. launched a public relations campaign to draw attention to the initiative of the business community in South Korea, and according to their information, several serious companies in Korea have expressed their willingness to contribute (donations) to the Taddybear (Teddy Bear) and Saigak subsidies.

Agency of IFAS partners

Executive Committee of the International Fund for Saving the Aral Sea

The Executive Directorate of the International Fund for Saving the Aral Sea in the Republic of Kazakhstan

Food and Agriculture Organization of the United Nations

Regional Centre of Hydrology

Nukus Branch of Executive Committee of IFAS

unicef

UNRCCA

UNECE

World Health Organization

OSCE

UNESCO

UNDP

WORLD WATER COUNCIL

AWC Asia Water Council

Asia-Pacific Water Forum

Global Water Partnership

ICID • CIID

carec

IWMI International Water Management Institute

ADB

THE WORLD BANK

JICA

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Agency for Development and Cooperation SDC

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

TIKA

SOCKETby

AFD

DAESUNG MEASURING

KOICA Korea International Cooperation Agency

K water

KICT KOREA INSTITUTE of CIVIL ENGINEERING and BUILDING TECHNOLOGY

kr Clean & Green

Council of Ministers of the Republic of Karakalpakstan

Ministry of Water Resources of the Republic of Uzbekistan

Ministry of Finance of the Republic of Uzbekistan

Ministry of Investment and Foreign Trade of the Republic of Uzbekistan

Ministry of Economy and Industry of the Republic of Uzbekistan

IARC.UZ

Information and Analytical Resource Center of the Ministry of Water Resources of the Republic of Uzbekistan

State Unitary Enterprise «SUVLOYIKHA»

Karakalpak branch of the Academy of Sciences of Uzbekistan

UzGIP LLC

Joint Stock Company «UzSuvLoyikha»

State Committee of the Republic of Uzbekistan on Ecology and Environmental Protection

Ecological movement of Uzbekistan

Ecological party of Uzbekistan

Uzbekistan Bird Protection Society

Joint Stock Company «Uzbekiston Temir Yollari» Unitary Enterprise Trust «Kuprikkurilish»

25 YEARS OF ACTIVITIES OF THE INTERNATIONAL FUND FOR SAVING THE ARAL SEA AND NEW IMPULSES FOR DEVELOPMENT OF THE ARAL SEA REGION

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