



Report
on
Sustainable Development Goal 14

14 LIFE BELOW
WATER



Bukhara 2023

SDG14	Life below Water	Research on life below water	14.1.1	Life below water: CiteScore	Life below water: publications in top journals
					Life below water: publications
					Life below water: % publications in top journals
			14.1.2	Life below water: FWCI	Life below water: FWCI
			14.1.3	Life below water: publications	Life below water: publications
		Supporting aquatic ecosystems through education	14.2.1	Fresh-water ecosystems (community outreach)	fresh water ecosystems community outreach
			14.2.2	Sustainable fisheries (community outreach)	sustainable fisheries community outreach
			14.2.3	Overfishing (community outreach)	overfishing community outreach
		Supporting aquatic ecosystems through action	14.3.1	Conservation and sustainable utilisation of the oceans (events)	supporting aquatic ecosystems through action events promoting conservation
			14.3.2	Food from aquatic ecosystems (policies)	supporting aquatic ecosystems through action policy campus food sustainably harvested
			14.3.3	Maintain ecosystems and their biodiversity (direct work)	supporting aquatic ecosystems through action maintain existing ecosystems
			14.3.4	Technologies towards aquatic ecosystem damage prevention (direct work)	supporting aquatic ecosystems through action prevent damage to aquatic ecosystem
		Water sensitive waste disposal	14.4.1	Water discharge guidelines and standards	water sensitive waste disposal water quality standards for water discharge
			14.4.2	Action plan to reducing plastic waste	water sensitive waste disposal reduce plastic waste on campus
			14.4.3	Reducing marine pollution (policy)	water sensitive waste disposal policy preventing marine pollution
		Maintaining a local ecosystem	14.5.1	Minimizing alteration of aquatic ecosystems (plan)	maintaining local ecosystem plan to minimise alterations
			14.5.2	Monitoring the health of aquatic ecosystems	maintaining local ecosystem monitor health
			14.5.3	Programs towards good aquatic stewardship practices	programmes towards good aquatic stewardship practices
			14.5.4	Collaboration for shared aquatic ecosystems	maintaining local ecosystem collaborations to maintain shared ecosystems
			14.5.5	Watershed management strategy	maintaining local ecosystem watershed management strategy

As a result of climate change, issues of water resource management and security in Central Asia will become of strategic importance. If the problem is not given due attention, the population living in every district of the region may experience on their bodies the condition that is currently observed in the Aral Sea region.

Central Asia is one of the few regions of the world where water security is inextricably linked to energy, food and the environment. Here water resources acquire strategic importance.

In 2022, the teaching staff of Bukhara State University published **6 articles** on the topic of water conservation and water management, which managed to be included in 6 **SCOPUS databases**¹.

14.2.1.

Historically, the main element of the survival and development of any civilization on the territory of modern Uzbekistan, due to its dry and harsh climate, is the use of water resources. It is no coincidence that the first large cities of the region: Samarkand and Bukhara were built on the Zarafshan River, and Urgench and Khiva on the Amu Darya. The states in these territories held a dominant position in the region because of water, and historically water has also been a critical tool in securing hegemony in the region.

As a result of misuse of water resources, various serious problems are arising in the region and the Aral Sea, which is in a deplorable state, is a prime example.

President of Uzbekistan Shavkat Mirziyoyev spoke at the 78th session of the United Nations General Assembly and mainly touched upon the following topical issues.

The head of state also dwelled on further directions of development of Uzbekistan.

“We resolutely continue the policy of building a new Uzbekistan - a legal, secular, democratic and social state. Our country boldly follows the path of radical reforms aimed at strengthening the principles of democracy and justice, based on the noble idea of human dignity and interests,” the president said at the podium UN: The President noted that poverty in Uzbekistan has decreased by 2 times since 2017. By 2030, it is planned to reduce this figure to 7 percent.

The President also noted that the reforms carried out led to liberation from the dominance of cotton². “For a century, millions of people in Uzbekistan were forcibly recruited to pick cotton. Every year from September to December, the bulk of the population, teachers and doctors, entrepreneurs, workers and employees, and the saddest thing, schoolchildren and students were mobilized to pick cotton. This led to a boycott "Uzbek cotton, and the

¹ <https://www.scopus.com/results/results.uri?cc=10&sort=plf-f&src=s&nlo=&nlr=&nls=&sid=cf82f312c6c1ba358bcb2b163acd37&sot=aff&sdt=cl&cluster=scopubyr%2C%222023%22%2Ct&sl=15&s=AF-ID%2860071650%29&ss=plf-f&ps=r-f&editSaveSearch=&origin=resultslist>
² <https://telegra.ph/OZBEKISTON-PREZIDENTI-BMTDA-EKOLOGIK-VAZIYAT-VA-SUV-MUAMMOSINI-KOTARDI-09-22>

country was blacklisted for years. Thanks to our strong will, all this is now a thing of the past. Our people are completely freed from cotton slavery," the president said³.

14.2.2. In February 3, 2023, M.Sedat Koljuog‘lu from Turkey, who has been working as an agronomist and agricultural development specialist for many years, visited Bukhara State University.



During a visit to the Faculty of Agronomy and Biotechnology of the University, I got acquainted with the scientific potential of the faculty, conducted scientific research, laboratory experiments, soil science and biology.



The specialist got acquainted with the projects implemented by the faculty in the field of fisheries and gave his useful recommendations, noting that in the future there will be cooperation with the faculty in the development of agriculture, improving the practical skills of teachers and students.

³ <https://president.uz/en/lists/view/6679>

On March 14, 2022, a seminar was organized at the Faculty of Agronomy and Biotechnology of BukhSU on the topic “Development of fisheries in natural and artificial reservoirs of the Bukhara region.”

The seminar was attended by the teaching staff of the Department of Biology Kurbanov Abdullo, Director of the Research Institute for Fisheries Development, members of the USAID company and heads of fisheries established in the Bukhara region⁴.



14.2.3

At the Faculty of Agronomy and Biotechnology of Bukhara State University, together with scientists from USAID and the Institute of Fisheries, a scientific seminar was held on the topic “intensive methods for developing fisheries in Uzbekistan.” The seminar was attended by scientists from the Department of Biology and heads of fisheries in the Bukhara region⁵.

⁴ <https://telegra.ph/Buxoro-viloyatining-tabiiy-va-suniy-suv-havzalarida-baliqchilikni-rivojlantirish--ma-vzusida-seminar-tashkil-etildi-03-14>

⁵ <https://telegra.ph/Agranomiya-va-Biotexnologiya-fakultetida-USAID-va-baliqchilik-instituti-olimlari-bilan-ilmiy-seminar-bolib-otdi-12-06>



In accordance with the decree of the President of the Republic of Uzbekistan “On additional measures for the further development of the fishing industry,” educational and practical courses were organized at Buxorobaliq LLC, together with the prosecutor’s office of the Bukhara region, the Bukhara branch of JSCIB IPOTEKA BANK, the Bukhara regional state sanitary-epidemiological station and the Bukhara State University. These educational and practical courses were organized by university teachers together with the Department of Biology of the Faculty of Agronomy and Biotechnology of Bukhara State University and Buxorobaliqchilik LLC for 22 citizens of the Bukhara region, 47 citizens of the Vobkent region, 12 citizens of the Peshku region. Agreements were concluded with the responsible persons of each economic entity. These educational and practical courses are organized on the basis of paid revenues from business contracts. Educational and practical courses are conducted using modern pedagogical technologies. Also, the teaching staff of the university has planned a graphical plan for training representatives of fisheries from all regions of the Bukhara region⁶.

⁶ <https://buxdu.uz/yangiliklar/2514/viloyat-prokuraturasi-2-sektor-shtabi-ipotekabank-atib-buxoro-filiali-hamda-buxoro-davlat-universiteti-tashabbusi-asosida-buxoro-viloyati-baliqchilik-fermer-xojaliklari-uchun-oquv-amaliy-kurslar-tashkilotildi/>



14.3.1

The decree on the Uzbekistan-2030 strategy defines specific measures to create favorable environmental conditions for the population, conserve water resources and protect the environment, and increase the efficiency of rational use of water in the republic⁷.

Water is now the world's main source of food production, health, decent living and human development. The risk of depleting the world's supply of clean drinking water is growing. The problem of water shortage is becoming a global threat, leading to environmental degradation, limited life opportunities and deteriorating public health. Today, more than 2 billion people living in more than forty countries around the world suffer from water shortages⁸.

14.3.2

In order to ensure the implementation of the instructions of the President of the Republic of Uzbekistan Mirziyoyev at a conference call on “Fishery development”.

In accordance with the agreement signed between the farm of Temir Tolib Omad LLC in the Vobkent region and scientists from the Department of Biology, Faculty of Agronomy and Biotechnology of Bukhara State University, intensive fish farming activities were carried out on January 6, 2022 to prepare artificial reservoirs for seasonal fishing⁹.

⁷ <https://lex.uz/ru/docs/6600404>

⁸ <https://telegra.ph/OZBEKISTONDA-SUV-VA-SUV-RESURSLARIDAN-TEJAMLI-FOYDALANISH-DAVR-TALABI-09-20>

⁹ <https://telegra.ph/Ozbekiston-Respublikasi-Prezidenti-Sh-M-Mirziyayevning-Baliqchilikni-rivojlantirish-togrisida-gi-sektor-yigilishida-berilgan-to-01-06-2>



14.3.3

According to the president at the conference call, owners of fish farms that grow more than 80 tons of fish will be given a 50% reduction in land and property taxes for 3 years, which will be transferred to the category of self-employed people.

The teaching staff of the faculty expressed their opinion on the development of fisheries: on the preparation of reservoirs for fishing, on the fish contribution per square meter of reservoirs, on the amount of quality feed, and exchanged opinions with farm workers¹⁰.

14.3.4.

some manifestations of the implementation of activities in accordance with the sustainable development goals, especially SDG14 and the rational use of water resources can be seen at Bukhara State University.

¹⁰ <https://telegra.ph/Ozbekiston-Respublikasi-Prezidenti-Sh-M-Mirziyayevning-Baliqchilikni-rivojlantirish-togrisida-gi-sektor-yigilishida-berilgan-to-01-06-2>

For example, in the faculty of Agronomy and biotechnology in order to achieve sustainable fisheries the faculty staff members and university constructed facilities for growing natural food for fish farms.

In this case, chlorella is grown as a natural food and algalized in ponds where fish are raised.

As a result, fish productivity increases and the sanitary condition of ponds improves.



BSU professors organize the use of water for fisheries



14.4.1

Pursuant to the national classification, surface water bodies are subdivided into 7 classes: I. very pure waters II. pure waters III. moderately polluted waters IV. polluted waters V. impure waters VI. heavily impure waters VII. extremely impure The Centre of Hydrometeorological Service at the Cabinet of Uzbekistan supervises the chemical compound of the national surface waters of 57 water bodies, at 84 points and 106 river

stations. In 2010 1,008 samples were selected and analysed. The UzHydroMet labs analysed 56,007 samples to define the salt structure, nutrient and polluting substances under the priority and specific polluting components list in accordance with the State Programme for the National Environment Monitoring for 2006-2010¹¹.

14.4.2

At the initiative of the coordinators of the Youth Union of Bukhara State University, under the motto “Cleanliness is the key to health,” the “PLOGGING” campaign was organized with the participation of student volunteers. During this action, the university territory was cleared of all waste¹².

14.4.3

Environmental Knowledge Day is an annual holiday that is celebrated annually in many countries around the world on April 15. Its history began with the UN conference in Rio de Janeiro in 1992, which discussed environmental issues. He then emphasized the importance of environmental education for the implementation of survival strategies and sustainable development of humanity.

Environmental education in our country—ensuring the priority of education and upbringing—is recognized as the most important means of solving environmental problems.

For this purpose, together with the Bukhara regional party organization of the Ecological Party of Uzbekistan, the Department of Ecology and Environmental Protection of the Bukhara Region, the Bukhara State University, the Pedagogical Institute, and the Institute of Natural Resources Management, a knowledge test “Ekotafakkur” was organized.



At this event, employees of the Bukhara regional party organization of the Ecological Party of Uzbekistan and the Department of Ecology and Environmental Protection of the Bukhara region tested knowledge in two stages. At the first stage, the teams answered

¹¹ http://www.cawater-info.net/water_quality_in_ca/files/uzbekistan_en.pdf page 21

¹² https://t.me/buxdu_uz/35575

questions from university teachers and spectators in the hall, and at the second stage they presented their answers and proposals for solving problematic issues.

14.5.2

Today, all necessary conditions are being created in Uzbekistan for the realization of the noble goals of youth. Youth problems are solved at the level of state policy. In order to increase the social activity of young people and further develop their creative abilities, a number of new projects are being developed.

On July 16, 2022, a republican seminar is being held in the Bukhara region for young specialists of the State Committee for Ecology, the main goal of which is to exchange experience with young people and increase environmental knowledge and skills.

At the seminar, young specialists spoke about their activities to students studying at Bukhara State University in the field of Ecology and Environmental Protection. In turn, the students also talked about their interests and shared plans for the future.



14.5.3

Over the next 30 years, the air temperature in our region increased by one and a half degrees. This is twice the global average warming. As a result, almost a third of the total area of glaciers was lost. If this trend continues, then in the next two decades the flow of the two largest rivers in our region - the Amudarya and Syrdarya - may decrease by 15%. Per capita water supply is expected to decline by 25 percent and crop yields are expected to decline by 40 percent. If effective measures are not taken in time, the consequences of these problems will seriously undermine the socio-economic stability in our region, said Shavkat Mirziyoyev.

Based on this situation, we support the establishment of the post of Special Representative of the United Nations Secretary-General for Water Resources. We advocate the attraction and implementation of the most advanced technologies, introducing the United Nations mechanism - water resources in the process of creating a Central Asian platform of water-saving technologies.

We are establishing systematic cooperation within the framework of the green development program adopted in our region. Such a partnership is equally in our interests and is aimed at preventing the threats associated with climate change. In this regard, the expediency of introducing the “Central Asian Climate Dialogue” was emphasized.

We are promoting the initiative of the United Nations General Assembly to adopt the resolution “Central Asia in the face of global climate threats: solidarity towards the common good.” We propose to discuss its main content at the international climate forum, which will be held next year in Samarkand,” the president said.

It is noted that the strategic task remains to adapt the main sectors of the economy of Uzbekistan to climate change, achieve carbon neutrality and a sharp increase in the share of “green” energy.

It is noted that Central Asia, which continues to struggle with the tragedy in the Aral Sea, is becoming one of the most vulnerable regions in the face of climate change. On the way to overcome the consequences of the island tragedy, which is a global problem, Uzbekistan is working at the level of its capabilities. In recent years, green spaces consisting of drought-resistant plants have been erected on an area of 1.7 million hectares on the dry bottom of the Aral Sea. It was particularly recognized that the support of the international community is critical to the continuation of these efforts.

One of the main tasks that we, industry specialists, perform in improving the above-mentioned ecological environment is to more quickly implement into practice the results of scientific research and practical recommendations for preventing the problems of water shortage and drought, as well as improving the environmental culture of the population¹³.

14.5.4

The khokim of the Ukhov region, Batir Zaripov, and the rector of Bukhgu, Obidzhon Khamidov, visited the Faculty of Agronomy and Biotechnology, located in the IFY “Rabotiqalmoq” of the Bukhara region.

During the visit, the presentations of the team were discussed, and the laboratory facilities and work carried out at the faculty were introduced in detail. In particular, fishing, growing medicinal plants, protecting crops from pests, preparing vermicompost using microscopic algae, growing Cherry tomatoes in open ground, localizing 13 different varieties of tomatoes in open ground, Growing varieties of corn against drought and harmsel, propagating medicinal Sistanxe plants, the importance of chlorella algae in wastewater treatment, the cultivation of green algae, the use of work carried out within the space, soils common in the Bukhara region and increasing their fertility, Issues such as the scientific basis of viticulture in the Bukhara region, work with Varnet were discussed¹⁴.

¹³ <https://telegra.ph/OZBEKISTON-PREZIDENTI-BMTDA-EKOLOGIK-VAZIYAT-VA-SUV-MUAMMOSINI-KOTARDI-09-22>

¹⁴ https://t.me/buxdu_uz/33583

In accordance with the cooperation agreement between Bukhara State University and the Bukhara Varnet enterprise, in accordance with the Model curriculum approved by the Ministry of Higher Education, Science and Innovation, certain qualifying practice is carried out

In order to apply the acquired theoretical knowledge in practice, 105 students of the 3rd stage studying in the areas of biotechnology (by industry), organization and management of greenhouse farming, fruit growing and viticulture, vegetable growing, melon growing and potato growing, from May 8, 2023 to the 3rd Yun (4 weeks) qualifying practice will take place within the framework of the educational program held in the limited liability company “Bukhara Varnet”¹⁵.

14.5.5

In orphanage No. 32 in the city of Bukhara, a device for extracting drinking water from the air from the Israeli company Watergen was installed. The atmospheric generator is capable of producing 900 liters of drinking water per day. The manufacturer’s website notes that the device optimizes water production in accordance with external atmospheric conditions - time of day, season, geographical location. Multi-tasking filters ensure water quality regardless of air quality.

¹⁵ https://t.me/buxdu_uz/32227