Food and Agriculture Organization of the United Nations

Overview of the state programs on ecosystem restoration in Uzbekistan

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Food and Agriculture Organization of the United Nations

UZBEKISTAN

The Republic of Uzbekistan is located in the southwestern part of Central Asia and covers an area of 447,400 km2, of which 425,400 km2 (95%) is land. The length of the borders is 6621 km.

Deserts and semi-deserts (including the Kyzylkum desert and the southeastern part of the Ustyurt plateau) cover almost 85% of the country's area.

The mountainous part includes the western spurs of the Tien Shan and the Pamir-Alai ridges with their foothills. Mountains and foothills occupy about 13% of the country's territory in its eastern and southeastern parts.The highest point above sea level is Mount Khazret Sultan - 4643 m (Gissar Range). The lowest point - the Mingbulak depression - corresponds to 12.8 m below sea level (Kyzylkum desert).

About 2% of the republic's area is occupied by alluvial valleys.

The climate is sharply continental and arid - the aridity index, according to the UNEP classification, is from 0.03 to 0.20; the country's territory is subject to intense desertification and droughts.

The territory of Uzbekistan is characterized by features of a continental, subtropical climate with large seasonal and daily fluctuations in air temperature. One of the features of the climate of Uzbekistan is the hot, long summer.

Review of government programs for ecosystem restoration in Uzbekistan

Uzbekistan, within the framework of sovereign rights and international obligations on global environmental protection, ratified and acceded to

- UN Framework Convention on Climate Change (1999),
- UN Convention on Biological Diversity (1995),
- UN Convention to Combat Desertification (1994),
- Vienna Convention for the Protection of the Ozone Layer, Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal (1995)
- Convention on the Prohibition of Military or any other Hostile Use of Environmental Impact Techniques.

The Republic of Uzbekistan is also a party to another 12 international agreements on cooperation in the field of environmental protection and 3 conventions directly related to issues of biodiversity conservation (CITES Convention (1997), Bonn Convention 1998 and Ramsar Convention (2001).

Recognizing the importance of climate change, Uzbekistan acceded to the United Nations Framework Convention on Climate Change on June 20, 1993, signed the Paris Agreement and made national contributions to the United Nations Framework Convention on Climate Change Secretariat on April 19, 2017. . The Paris Agreement was ratified on November 11, 2018 after the adoption of Law of the Republic of Uzbekistan No. ZRU-491 dated October 10, 2018 “On the ratification of the Paris Agreement.”In 2021, Uzbekistan increased its quantitative commitments under the Paris Agreement (NDC) and intends to reduce specific greenhouse gas emissions per unit of GDP by 35% by 2030 from the 2010 level, instead of the previously envisaged 10%.

FORECASTING INDICATORS OF PLANTING OF LANDSCAPE, FRUIT TREES AND SHRUBS SEEDLINGS WITHIN THE NATIONAL PROJECT "YASHIL MAKON"

Жами экиладиган кўчатлар ва қаламчалар сони 200 млн. туп

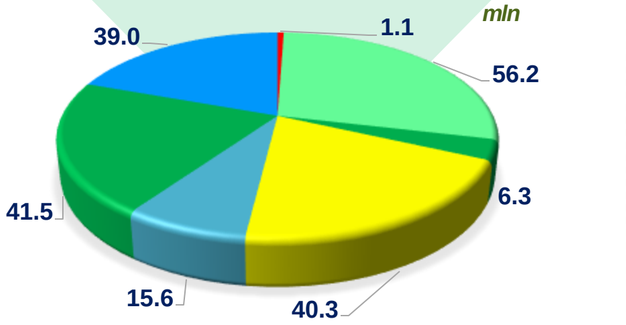
млн. туп

Region name	Total number of seedlings and cuttings to be planted		
	total	Incl	
		2022 fall	2023 spring
Republic of Karakalpakstan	14,1	5,3	8,8
Andijan	15,4	5,8	9,6
Bukhara	15,5	5,8	9,7
Jizzakh	15,8	5,9	9,9
Kashkadarya	16,3	6,1	10,2
Navoiy	14,1	5,3	8,8
Namangan	15,4	5,8	9,6
Samarkand	16,3	6,1	10,2
Surkhandarya	16	6	10
Sirdarya	14,1	5,3	8,8
Tashkent	16,2	6,1	10,1
Fergana	15,3	5,7	9,6
Khorezm	14,5	5,4	9,1
Tashkent city	14,1	5,3	8,8
Total	**200**	**75**	**125**

Forecast indicators of the supply of ornamental, fruit tree and shrub seedlings

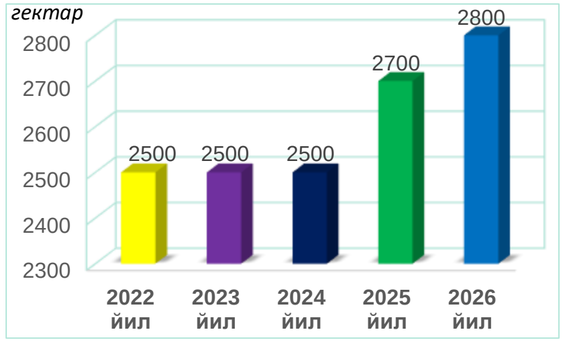
- Forestry agency — 34,4 mln saplings
- Entrepreneurs — 75,8 mln saplings
- Research Institute for Fruit Production named after M. Mirzaev — 0,8 mln saplings
- Households — 89 mln saplings

Distribution of organizations and enterprises



- Умумфойдаланувдаги автомобиллар йўллари ёқасига
- Фермер хўжаликлари ва кластерлар ер майдонлари четларига
- Қишлоқ хўжалиги ерларида иҳота дарахтзорлар барпо этиладиган ерларда
- Туман(шаҳар)лардаги ҚФЙ, МФЙ худудларида
- Ижтимоий соҳа объектлари ва ташкилотлари
- Корхоналар ва хизмат кўрсатишсоҳалари худудларида
- Туман(шаҳар)лардаги Ободонлаштириш бошқармалари тасарруфидаги худудларда

Indicators of establishment of tree groves against wind erosion of irrigated lands and sand inundation of water management facilities





Within the national project "Green Space".

As of end 2022	In 2022-2024
584,2 ha	1082,34 ha
construction of "green gardens" will be carried out on the site.	"green public parks" will be created on the square.

• Salt covered cars during a dust and salt storm (May 27, 2018)

Taking sample soil for checking

Basic threats to ecosystems

- 1. Degradation, fragmentation and loss of habitats caused by unsustainable agricultural practices, unsustainable livestock management, etc.;Degradation and loss of natural habitats due to agricultural developmentEcosystem degradation caused by livestock farming Reduction of forest area leading to habitat loss.Habitat disturbance due to engineering and industrial activitiesHabitat degradation under the influence of recreational loads.
- 2. Unsustainable use of biological resources (overexploitation of natural populations of animals and plants, ineffective hunting management, illegal extraction and procurement);
- 3. State of ecosystem protection;
- 4. Pollution of the environment (especially with toxic chemicals, in particular pesticides);
- Unsustainable development of recreational areas;
- 6. Introduction of alien species, their impact on native flora and fauna;
- 7. Climate change

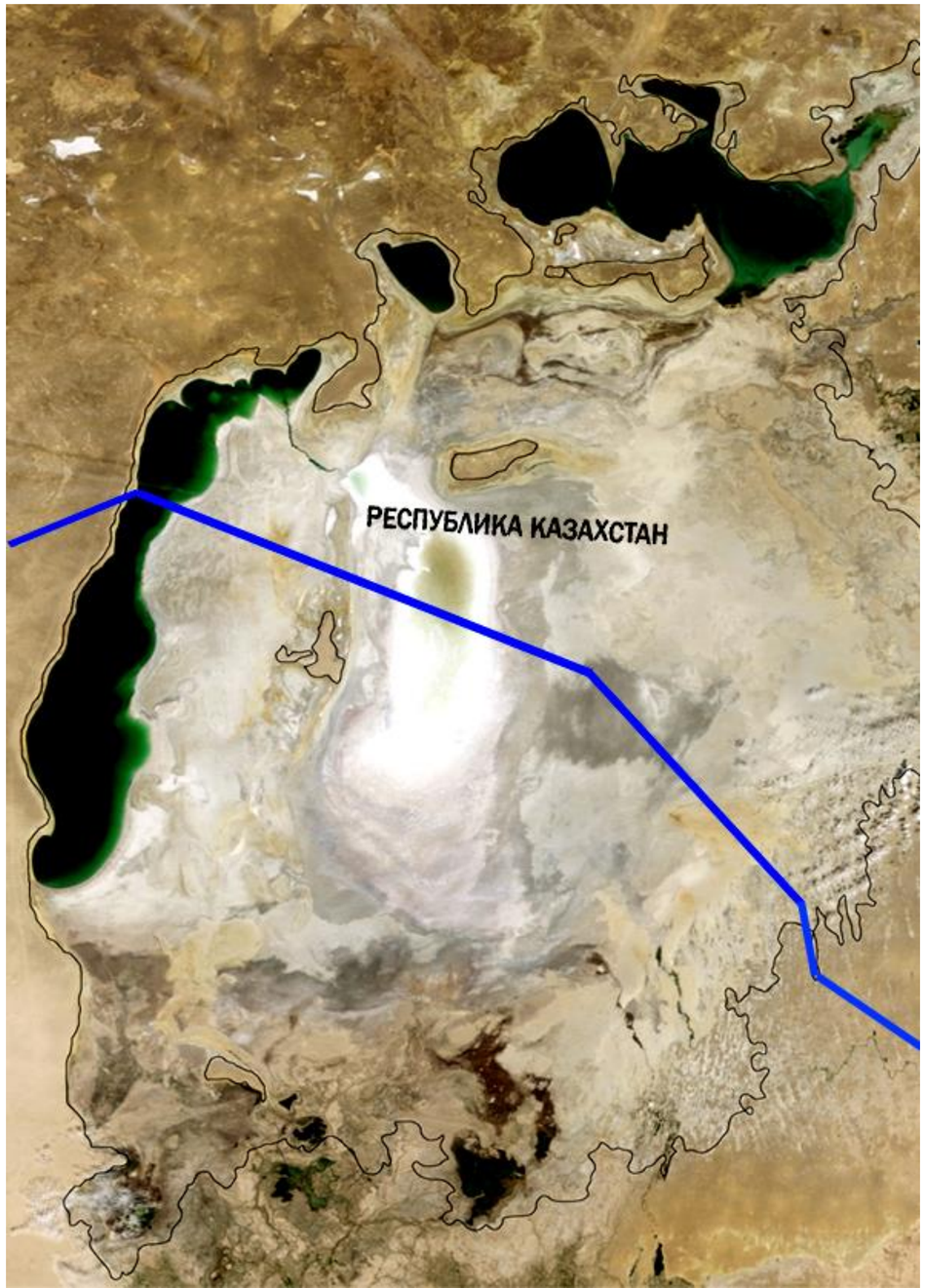
Impact of climate change on ecosystems

- Global climate change is an additional pressure that increases the threat of ecosystem degradation and loss, but existing information on this issue is limited because monitoring studies of ecosystems in the context of regional climate change are not carried out.
- As examples of the critical impact of climate change, an increase in fires in dry and low-water years is noted in the low-mountain (adyr) zone and in reed thickets of flat wetland ecosystems in the Southern Aral Sea region, where locust breeding outbreaks have been recorded in areas of drying up lakes, and in settlements of Karakalpakstan According to expert estimates, cases of termite invasion have become more frequent.
- As a result of droughts in 1999-2000 and 2008. in the Republic of Karakalpakstan and the drying out of delta reservoirs in the lower reaches of the river. Amu Darya has seen changes in the distribution of migratory birds. Mass concentrations of waterfowl during the autumn migration moved to the reservoirs of Bukhara, Navoi and Samarkand regions.
- The possibility of increased fluctuations in the hydrophilic complexes of birds is predicted due to the drying out and subsequent watering of wetland ecosystems. It is assumed that drier and hotter conditions may lead to a decrease in the productivity of desert forests and to a reduction in the ranges of some species of juniper in the mountain zone. The reduction of forests and other vegetation, in addition to loss of habitat, reduces the absorption of carbon dioxide.

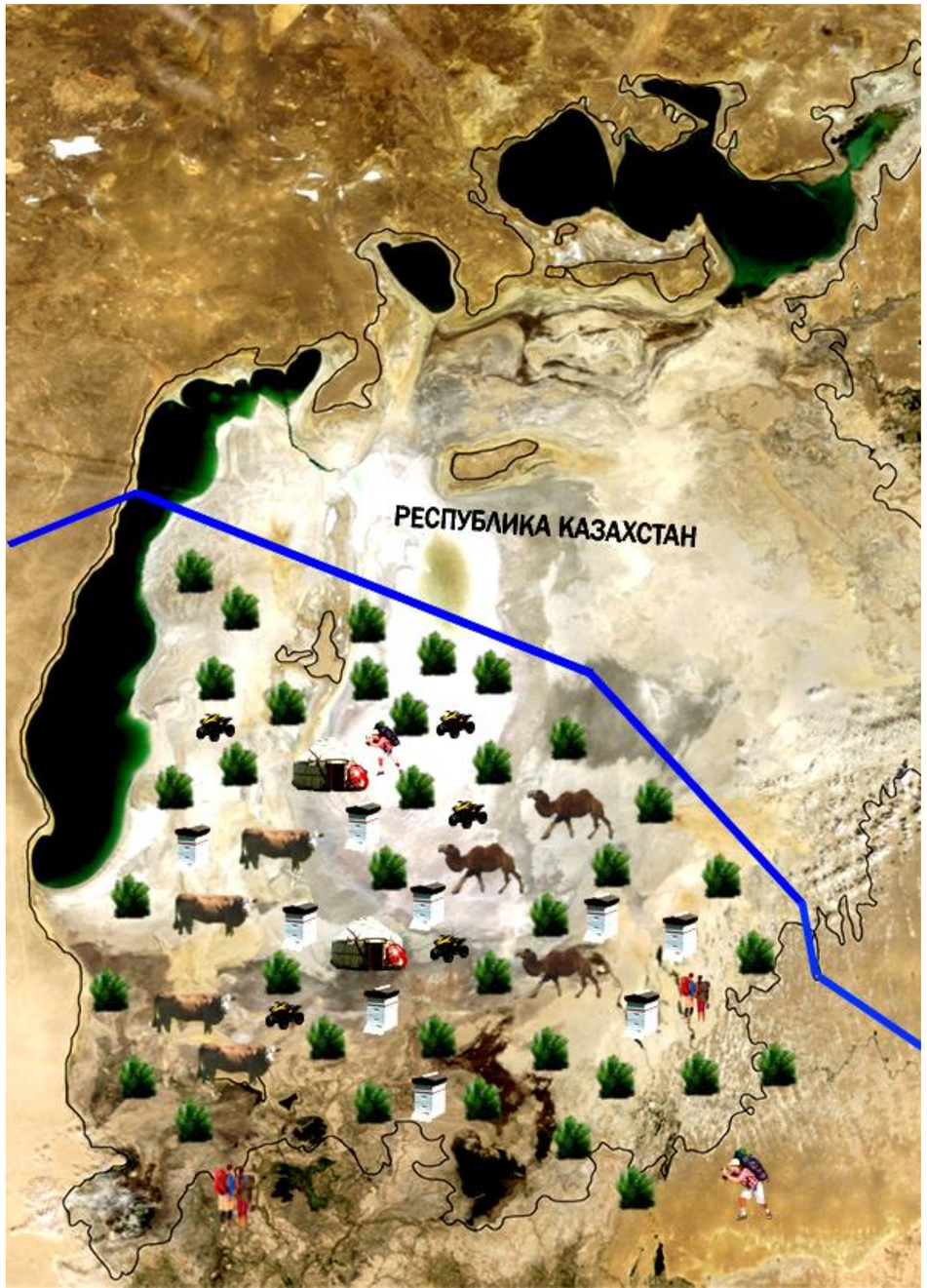
Preparing sand storage furrows

Row planting of saxaul seedlings on sandy sediments (planting in spring - 2019, 69 km from the zero point)

DRAINED BOTTOM OF THE ARAL SEA UNTIL 2018



FORESTED DRAINED BOTTOM FOR FOR HUMAN BENEFITS



Forestry works on the dry bottom of the Aral Sea

According to the decree of the Cabinet of Ministers of the of Uzbekistan dated December 24, 2019 No. 1031 "On measures to establish "green covers" - protective forests in the dry areas at the bottom of the Aral Sea" in the autumn-winter of 2019 and spring of 2020 and during the autumn-winter seasons, it is planned to establish "green coverings" on a total area of 700 thousand hectares. **In practice, in the spring season of 2020, green coverings were established on an area of 703,000 hectares.**

2,769.8 tons of seeds of desert plants were prepared by forestry workers and residents, of which 1,319.2 tons of saxovol, 541.1 tons of sugarcane, 810.9 tons of sorghum, 5 tons of cherkes and 93.6 tons of seeds of desert pasture plants were prepared. 567.6 tons of prepared saxophone seeds (saxophone, blackberry and desert plants) were collected by the residents of Moynaq district..

The work of establishing walnut orchards against desertification in the arid lands of the foothills

Currently, there are 2 mln.of degraded land where pistachio and almond orchards can be planted. (Now as below)

After the establishment of pistachio groves, they will have the following appearance (in 2020, 10,000 hectares of nut groves were established on the lands of the forest fund and will have the following appearance in 6-7 years).

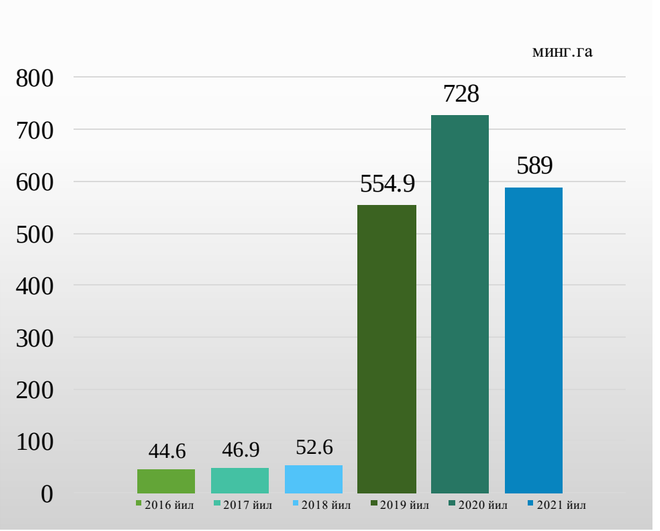
Reforestation works by installing mechanical protection barriers against sand migration in desert areas

Fulfillment of the Bonn call

The Bonn Call was launched by world leaders at the September 2011 Ministerial Conference in Bonn, Germany. This is 150 million by 2020. Hectares represent global efforts to restore forests and degraded lands. Later, this global goal was set **to expand to 350 million hectares by 2030 in the New York Declaration on Forests adopted at the 2014** UN Climate Summit. On June 21-22, 2018, a Ministerial meeting of forestry leaders of the Caucasus and Central Asia was organized in Astana, Kazakhstan. In it, commitments were made until 2030 to restore forest landscapes on an area of 2.5 million hectares. In particular, Uzbekistan undertook to restore forest landscapes on an area of 500,000 hectares until 2030.

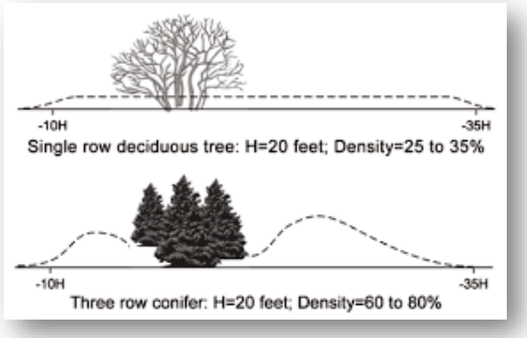
Indeed, by forestry authorities in 2018-2021

Works on restoration of forest landscapes were carried out on an area of more than 2.1 mln. hectare. The obligation was fulfilled 9 years before the deadline by more than 4 times.



In order to protect agricultural lands from wind erosion and crops from drought, the field forest plantations established in 2018-2021

As a result of the non-establishment of tree groves on agricultural lands, land reclamation deteriorated and the productivity of agricultural crops decreased.
As a result, by the decision of the President of the Republic of Uzbekistan No. 3405 of November 27, 2017, the parameters for establishing khotazores on agricultural lands were approved. Accordingly, in 2018 500 ha (100 %), in 2019 2495 ha (100 %), in 2020 2020 ha and in the spring of 2021 around 2400 ha. Decree No. 4850 of the President of the Republic of Uzbekistan dated October 6, 2020 basically confirms the guidelines for the establishment of forest groves, and until 2030, forest groves will be established on an area of 28,700 hectares.



THANK YOU FOR ATTENTION!!!

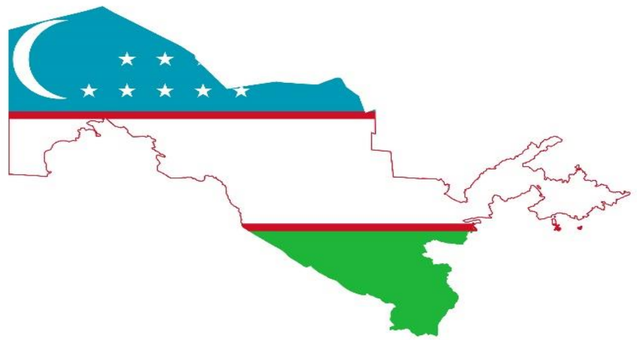
Presentation 2.

CACILM-2 project

Food and Agriculture Organization of the United Nations

“INTEGRATED NATURAL RESOURCES MANAGEMENT IN DROUGHT-PRONE AND SALT-AFFECTED AGRICULTURAL PRODUCTION LANDSCAPES IN CENTRAL ASIA AND TURKEY” ('CACILM-2’)

PROJECT RESULTS



Muhammadjon Kosimov, National Project Manager

04 June 2024

Objective of the project

- The overall objective of the Project is to scale up integrated natural resources management (INRM) in drought prone and salt affected agricultural production landscapes in the Central Asian countries and Turkey.
- This will be done through scaling up of sustainable management practices that minimize pressures and negative impacts on natural resources that reduce risks and vulnerability and, enhance capacity of rural communities to cope with or adapt to drought and salinity.

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Project territory

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Pasture management

- Organized pasture fence construction to rehabilitate pasture through introduction of strip seeding on 30 ha and 50 ha in Guzor and Qoravulbozor districts accordingly.
- Pasture rotation plan for LLC “Guzor” karakul sheep breeding farm (83 000 ha) has been developed.

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Capacity building

- Held 86 training workshops have been conducted for more than 2000 (including 426 female) specialists and farmers on conservation agriculture, water saving technologies, salt and drought tolerant crops, greenhouses, seed production, vegetables and fruit trees.

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of the United Nations

Capacity building

The Global Soil Doctors Programme (GSP) in cooperation with the Food and Agriculture Organization of Uzbekistan (FAO) has conducted a training program involving the key stakeholders in Bukhara 12-15 March 2024. This training focused primarily on tackling soil salinity and fertility issues, covering an extensive curriculum that included strategies for increasing soil organic matter, optimizing nutrient management, improving the agronomic properties of soils affected by salinity and understanding soil pH, texture and structure.

Capacity building

The initiative of conducting the AquaCrop simulation model, to determine and seek its input requirements, and to solve different applications in agricultural water management adapted to arid conditions have been organized during 14-19 April 2024 in Bukhara region. 32 participants for this training will be selected among the government organizations including Ministry of Agriculture, Ministry of Water Resources, water users' organizations, staffs of the partner universities who will further use this application into practice and scientific research activities.

Partnership

In May 2023, three major international events on salt-affected soils have been organized in Tashkent as follows:

- the Second Meeting of the International Network on Salt-affected Soils (INSAS),
- the Sixth Plenary Meeting of the Subregional Eurasian Soil Partnership (EASP) and
- specialized trainings on salt-affected soil analysis conducted by the Global Soil Laboratory Network (GLOSOLAN).
- A total 150 participants from more than 30 countries attended the events.

Procurement

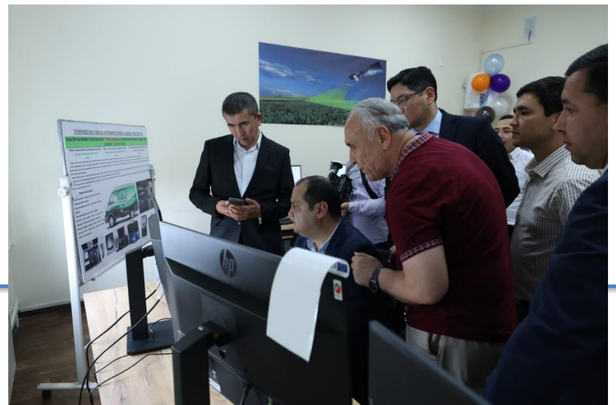
- A sprinkler irrigation system has been installed to the Kamashi experimental station (10 ha land) of the Southern Agriculture Research Institute.
- The system can save up to 30-50% irrigation water, increase crop yield by 20-25%.

Procurement

- Delivered more than 100 tons seeds of salt and drought tolerant (wheat, barley, safflower, rye, triticale, oat and forage pea) to the project beneficiaries.
- Provided grapevine seedlings 13500, Rootstcoks (MM 106) 10000, grape cuttings 100 000
- Delivered and installed 128 greenhouses to households in the project areas, eco-schools and kindergartens.
-

Procurement

- Procured and installed 3 GIS laboratories in the Project partner organizations
- The partner organizations started to develop maps on land degradation, agro-chemistry maps in Uzbekistan



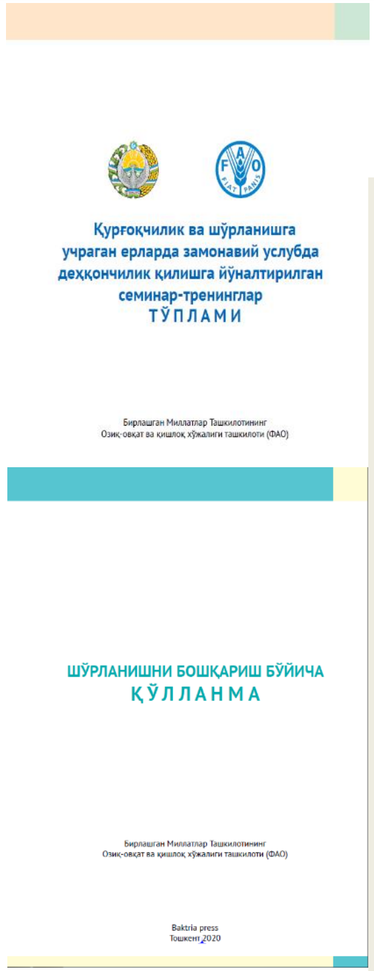
Procurement

- 2 no-till seeders, 1 laser levelling equipment procured and transferred to the project partners;
- 41 two-wheel tractors, 61 water pumps, 20 hole diggers, 20knapsack sprayers and other equipment have been delivered for households;
- 1 soil laboratory equipment (photospectrometer) for State entity “Tuproqsifattahlil”

Procurement

- Soil testing lab and seed oil and moisture determination equipment for Tashkent state agrarian university.
- Seed conditioning plant has been procured and transferred to the cooperative in Kamashi district.

Publication



- Published 6 manuals and handbooks, including:

1. Recommendations on development of agroforestry in rainfed arid lands on mountainous area of Kamashi district, Kashkadarya region. (Tashkent 2020) 50 pages, 500 copies.
2. Collection of seminar training on innovative farming techniques for drought and saline-affected lands. (Tashkent 2021) 160 pages, 1000 copies.
3. Guidance on organizing farmers field schools. (Tashkent 2020) 50 pages, 500 copies.
4. Guidance on salt management (Tashkent 2021) 55 pages, 1000 copies.
5. A manual entitled "Propagation and grafting methods of fruit and vine seedlings" (Tashkent 2022) 48 pages, 1000 copies.
6. Technological map for cotton production using drip irrigation for 2019-2023 (Tashkent 2019) 122 pages, 500 copies.

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SLM

- Crops were sown on an area of 30268 ha in Qashqadaryo and 9108 ha in Bukhara using a no-till planter;
- Laser land levelling were done on 9800 ha in Bukhara province
- Adopted soil reclamation (subsoiling) practice on 20308 ha in Bukhara

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Agroforestry

- A total of 1200 ha of pistachio plantation was organized in 2021-2022 in Qamashi district;
- Established three fruit tree nurseries under the “Million fruit tree” campaign in Karakalpalstan. Produced more than 30 000 seedlings.
- The “Million fruit tree” campaign is continuing.

Salt tolerant tree plantation

This initiative was prepared under the “Million Trees” campaign financed by the CACILM-2 project. Silverberry is very drought and salt tolerant indigenous tree, but there is no silverberry plantation despite high demand for its fruits. The main idea is to establish 1 hectare demo site in salt affected area of Karakalpakstan to demonstrate to farmers and local people for further expanding in the region.

Policy papers and reports

- No-Till technology has been integrated into national policies as a project product for wide-scale use for agricultural production *(the Presidential Decree #36 on 16 February 2024 and the Presidential Decree #5742 on 17 June 2019)*
- Prepared strategy of Conservation agriculture and submitted to the Ministry of agriculture;
- Disaster Risk Reduction Report in English and Uzbek version has been published.
- Submitted reports on project activities to the UNCCD Focal Point.

Thank for your attention!

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Presentation 3.

SFM project

Food and Agriculture Organization of the United Nations

Project GEF/FAO «Sustainable forest management in mountainous and valley areas of Uzbekistan» (SFM)

"Ўзбекистонда тоғ ва водий ўрмонларини барқарор бошқариш"ГЭФ/ФАО лойиҳаси (ЎББ)

Проект ГЭФ/ФАО «Устойчивое управление лесами в горных и долинных районах Узбекистана» (УУЛ)

Project components:

- **Component 1: Information management systems for sustainable forest management.**
- **Component 2: Multifunctional forest management leading to carbon sequestration, improvement of forest and timber resources, and other benefits.**
- **Component 3: Scaling up sustainable forest management - with carbon sequestration - by strengthening the enabling environment.**
- **Component 4: Monitoring, evaluation and knowledge sharing.**

Pilot areas of the project:

Dekhkanabad forestry of Kashkadarya region

Kitab forestry of Kashkadarya region

Sirdarya forestry of Sirdarya region

Pap specialized forestry of Namangan region

Main achievements of the SFM project

In 2018-2024, within the framework of the project, the system of sustainable management of forests was introduced on an area of 87 thousand 945 hectares, and the amount of carbon dioxide assimilation was increased to 4 million 350 thousand 74 tons per year. Of this, measures to support the natural regeneration of forests are on 42 thousand 458 hectares, forest restoration on 9 thousand 49 hectares, establishment of plantations of nut-bearing and fast-growing wood trees on 1 thousand 121 hectares, plantations of medicinal plants on 498 hectares, field protection forests on 514 hectares, restoration of pastures on 34 thousand 305 hectares is being implemented per hectare. 2,289 citizens were involved in the sustainable forest management project, of which 648 were women.

The decision of the President of the Republic of Uzbekistan No. PQ-4850 dated October 6, 2020 "On approval of the Concept of the development of the forestry system in Uzbekistan until 2030" prepared by the initiative of the project was approved. On the basis of this decision, by introducing new innovations in forestry, it is possible to establish new forests and establish new nurseries, to prevent land degradation in mountain areas by terrace method.

The proposal to lease forest land for up to 50 years prepared as part of the project was expressed in the decision of the President of the Republic of Uzbekistan "On measures for the effective use of land and water resources in agriculture" No. PP-5742 of June 17, 2019. As a result, new jobs were created for more than 1,200 citizens by leasing land for up to 50 years, agricultural crops, pistachios, almonds, and medicinal plants were started to be cultivated on more than 10,000 hectares of unused land.

Within the framework of the project, Gendar strategy and Gendar action plan of Forestry Agency (former state committee) were developed and approved by the committee. As a result, additional benefits were created for women and girls working in forestry and living around the forest. As part of the project, 460 women were helped to improve their home conditions.

Main achievements of the SFM project

To achieve the results of the SFM project in the period from 2018 to 2024, the Forestry Agency of the Republic of Uzbekistan (formerly State Forestry Committee) has committed to providing an in-kind contribution in the amount of 28.7 billion Uzbek sums (equivalent to 7,301,107 US dollars).

In order to adopt modern methods of forest accounting (inventory) and to prevent existing differences in forest categories, a GIS laboratory and a Data Center were established on the basis of the "Green Project" DUK (the former "Forest Project" enterprise), with a modern computer and a high-capacity server, connected to the satellite system. provided with equipment and supplies. 20 forestry experts for the Laboratory and Center were trained by Czech experts on Collect Earth and Field Map programs.

4 units of mini-tractors, cultivators and greenhouses, 3 NIVA vehicles were delivered to the mountainous areas in order to strengthen the material and technical base of 4 forestries, 40-ton water storage capacity was installed for the water management system in Dekhkanabad and Pop forestry for the purpose of construction of greenhouses and afforestation.

Within the framework of the project, through the experience of the Turkish state, the technology of saving water resources was studied, and it was achieved to establish the technologies of increasing the intensity of energy in 46 forestry farms in Uzbekistan.

Based on the experience of the US Forest Service, the experience of creating seedbeds aimed at improving severely degraded pasture lands was established in 3 forestry pastures, and a practical workshop-training for pasture users was organized.

Gender Strategy and Gender Action Plan

An information center and a laboratory of geoinformation systems were opened on the basis of the "O’rmonloyiha" design institute

Technical support within the project

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Dekhkanabad forestry

As of January 1, 2018, the total area of land assigned to the Dekhkanabad forestry is 109,385 hectares, including 17,560 hectares of pastures.

Results achieved:

- To achieve the results of the SFM project in the period from 2018 to 2023, Dekhkanabad State Forestry has committed to provide an in-kind contribution of 6 billion Uzbek sums (equivalent to 1,526,364 US dollars).
- For the period 2018-2023, Sustainable Forest Management (SFM) was introduced on the territory of **37 thousand 425 hectares**, which will lead to the absorption of 1,883,974 tons of CO_2 annually. Including forest restoration 4385 hectares, pastures 8560 hectares, promotion of natural regeneration 23504 hectares, fuel wood plantations 128 hectares, pistachio/almond plantations 556 hectares, medicinal plants 255 hectares. There are 67 hectares of shelterbelts.
- for the period 2018-2023, **520** hectares were leased on the basis of public-private partnership, which led to the attraction of **427** thousand US dollars of private investment.
- **733 people** are involved in the SFM process, of which **145 are women**

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Kitab forestry

As of January 1, 2018, the total area of land assigned to the Kitab forestry is 65,730 hectares, including 28,470 hectares of pasture (43%).

Results achieved:

To achieve the results of the SFM project, between 2018 and 2023, Kitab State Forestry has committed to provide an in-kind contribution of 13.98 billion Uzbek sums (equivalent to 3,531,587 US dollars).

- During the period 2018-2023, SFM was introduced in the Kitab forestry enterprise: on an area of **17 thousand 850 hectares**, which will lead to the absorption **of 892 500 tons. CO2** annually. Including restoration of forests 3250 hectares, pastures 7125 hectares, promotion of natural regeneration - 7093 hectares, fuel wood plantations, pistachio/almond plantations 225 hectares, medicinal plants 120 hectares, protective plantings - 37 hectares.

- More than 650 hectares were transferred for long-term lease on the basis of public-private partnership, investments of more than 480 thousand US dollars were attracted.

- Over the period 2018-2023, in order to increase capacity, more than 730 people (227 households), of which 180 were women, were involved in the management of management.

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Syrdarya forestry

Results achieved:

- To achieve the results of the SFM project in the period from 2018 to 2023, the Syrdarya State Forestry has committed to provide an in-kind contribution in the amount of 10.2 billion Uzbek sums (equivalent to 2,594,819 US dollars).
- During the period 2018-2023, SFM was introduced in the Syrdarya forestry enterprise: on an area of 2,995 hectares, which will lead to the absorption of 89,850 tons of CO2 annually. Including the creation of shelterbelt forest belts of 225 hectares, reforestation of 152 hectares, promotion of natural regeneration and replanting of crops of 2518 hectares, plantations of fast-growing tree species of 40 hectares, plantations of medicinal and food species - 28 hectares, new nurseries - 32 hectares.
- 120 hectares of land were leased under public-private partnership terms, which helped attract more than 180 thousand US dollars of private investment
- 180 people, which 60 women, are involved in the SFM process.

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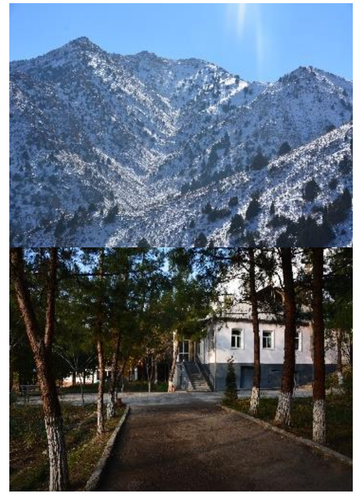
Pap Specialized Forestry

Results achieved:

- To achieve the results of the SFM project between 2018 and 2023, the Pontifical State Forestry has committed to provide an in-kind contribution of 9.5 billion Uzbek sums (equivalent to 2,416,743 US dollars).
- During the period 2018-2023, UFM was introduced on the territory of 29 thousand 675 hectares, which will lead to the absorption of 1,483,750 tons of CO2 annually. Including the implementation of the promotion of natural regeneration of 9343 hectares, reforestation of 1262 hectares, plantations of pistachio, nuts and fuel wood on an area of 140 hectares, plantations of medicinal plants on an area of 125 hectares, shelterbelts of 185 hectares, work to restore pastures of 18620 hectares.
- Including 320 hectares transferred for long-term lease on public-private partnership terms. which helped attract 355 thousand US dollars of private investment.
- To support capacity development, more than 646 people, local people, farmers and households were involved in SFM. Of these, 263 are women.







Thanks for your attention!

Grazie per la vostra attenzione!

Presentation 4.

FOLUR project

Food and Agriculture Organization of the United Nations

MINISISTRY OF ECOLOGY, ENVIROMENT PROTECTION AND CLIMET CHAMGE OF THE REPUBLIC OF UZBEKISTAN

THE MINISTRY OF AGRICULTURE OF THE REPUBLIC OF UZBEKISTAN

Food System, Land Use and Restoration Impact Program in Uzbekistan (GCP/UZB/010/GFF)

Aziz Nurbekov,
project coordinator

global environment facility
INVESTING IN OUR PLANET

Can farming practices be improved which enables yield increase with no cost to the environment?

There are several key farming tactics that are proven to be effective in increasing grain production while lowering carbon footprint:

1) using **diversified cropping systems** can reduce the system's carbon footprint by 32 to 315 % compared with conventional monoculture systems;

2) improving N fertilizer use efficiency can lower the carbon footprints of field crops as N fertilizer applied contributed 36 to 52 % of the total emissions;

3) adopting intensified rotation with **no-till summer fallow** can lower the carbon footprint by as much as 150 %, compared with a system that has high frequency of summer fallow;



Enhancing

enhancing **soil carbon sequestration** can reduce carbon footprint, as the emissions from crop inputs can be partly offset by carbon conversion from atmospheric CO_2 into plant biomass and ultimately sequestered into the soil;

Using

using **no-till** in combination with crop residue retention can increase soil organic carbon and reduce carbon footprints;

Integrating

integrating key **cropping practices** can increase crop yield by 15 to 59 %, reduce emissions by 25 to 50 %, and lower the carbon footprint of cereal crops by 25 to 34 %;

7) including N2- fixing pulses in rotations can reduce the use of inorganic fertilizer, and lower carbon footprints.

With the adoption of these improved farming tactics, one can optimize the system performance while reducing the carbon footprint of crop cultivation.

Key messages from Uzbekistan Strategy for Agricultural Development

- Stimulation of cooperation of agricultural producers and their integration into modern production-supply chains for the domestic and international market. (Small dekhkan farms produce 70% of total agricultural production).
- Encouragement of cooperation between the agricultural producers and the industrial processing companies including clusters establishment.
- Introduction of the system of state intervention purchases to regulate cereals grain production, gradual abolition of the system of state regulation of the prices on agricultural products, and introduction of the mechanism of cereals grain purchases based on free market prices according to quotas.

Key messages from Uzbekistan Strategy for Agricultural Development

- Development and application of Conservation Agriculture including detailed instructions for their application and measures for their adoption by agricultural producers.
- Reduction of water use by 20% by 2030 and state support to local producers and buyers of water saving technologies.
- Establishment of the system of contract production between the producers and the buyers of cotton and cereals grain.
- Establishment of local production of no-till drills in the country

Wheat production opportunities

- Strong movement to change the existing situation
- The record of tremendous progress in wheat production
- Hard working and experienced farmers
- Established supply chains
- Capable research and extension system
- High integration with international community

GAEP: Good Agricultural and Environmental Practices

- Optimal selection of crops
- Diversification of wheat by introduction and expansion of durum wheat, bisquit wheat, ancient wheats which have positive effect on human health.
- Selection of optimal wheat varieties which do not require crop protection against diseases, early-maturing with less irrigation needs and effective use of nitrogen fertilizer. For the rainfed conditions drought tolerant varieties will be recommended and measure will be taken to expand the genetic diversity of wheat varieties by maintaining old landraces.
- Improvement of grain quality and its profitability by optimal application of nitrogen and other fertilizers, increase of concentration of important micro-nutrients (Zn, Fe) by cultivation of relevant varieties and application of micro-nutrients.
- Application of soil- and water conserving technologies of cultivation, application of optimal fertilizer doses and reduction of chemicals use.
- This list will be continued based on the results of field experiments and agricultural practice in consultation with project partners including farmers and all participants of wheat value chain.
- The guiding document will be “GAEP Handbook”

GAEP: Good Agricultural and Environmental Practices

GAEP components	Effects of the main indicators:				
	Farm profitability	GHG mitigation	Land rehabilitation	Water savings	Biodiversity enhanced
Soil minimal tillage	+	+	+	+	+
Soil zero tillage	+	++	+++	++	++
Permanent beds	+	+	++	+++	+
Split N application for wheat	++	±	±	±	±
Wheat early varieties	±	±	±	+++	±
Wheat disease resistant varieties	++	++	±	±	+++
Wheat varieties with higher grain values (durum, etc)	+++	±	±	±	±
Weeds control mechanical	±	--	±	±	++
Weeds control chemical	±	±	±	±	--
Food legumes area increase	+	+	+++	+	+
Alfalfa area increase	++	+++	+++	+	+++
Conversion of degraded land to pastures	--	+++	+++	++	+++
Conversion of degraded land to agroforestry	--	++	++	+	+++
Crop residue remaining in field	-	++	+	+	++
Fallow elimination from rainfed production	+	+	+	+	+
Drip irrigation	±	+	++	+++	+


Food and Agriculture Organization
of the United Nations
Thank you very much for attention!

Presentation 5.

LDN project

Food and Agriculture Organization of the United Nations

How can “Sustainable Forest and Rangelands Management in the Dryland Ecosystems of Uzbekistan” (LDN) project help to achieve land degradation neutrality in Uzbekistan?

04 June 2024

Nariman Nishanov, Chief Technical Advisor, FAO, and
Furkat Ibragimov, Program Associate, FAO

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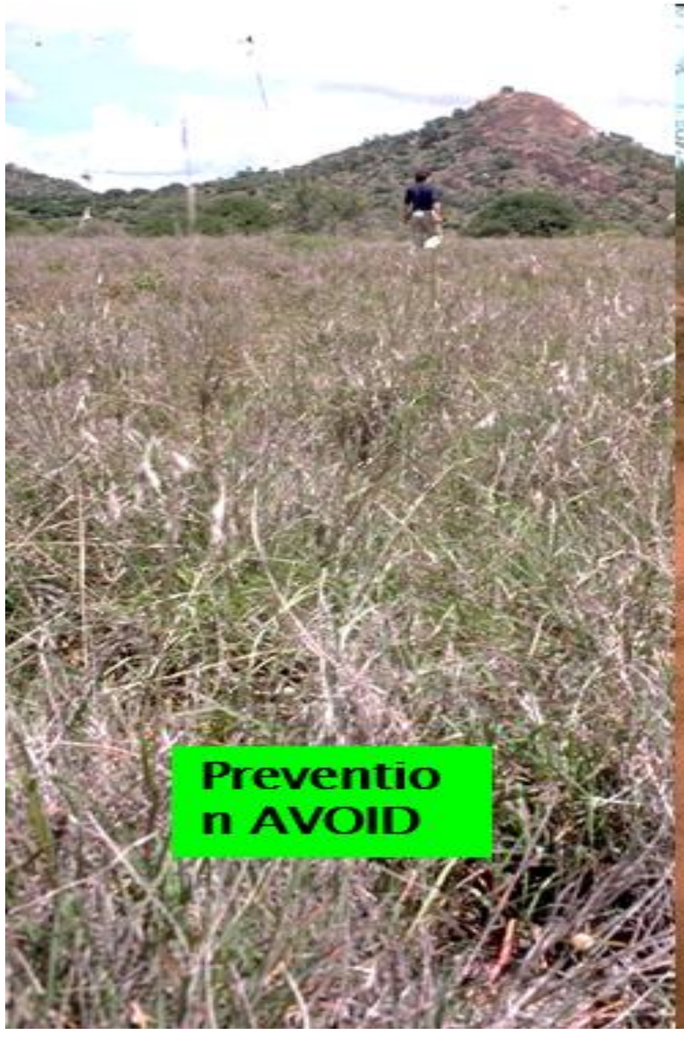
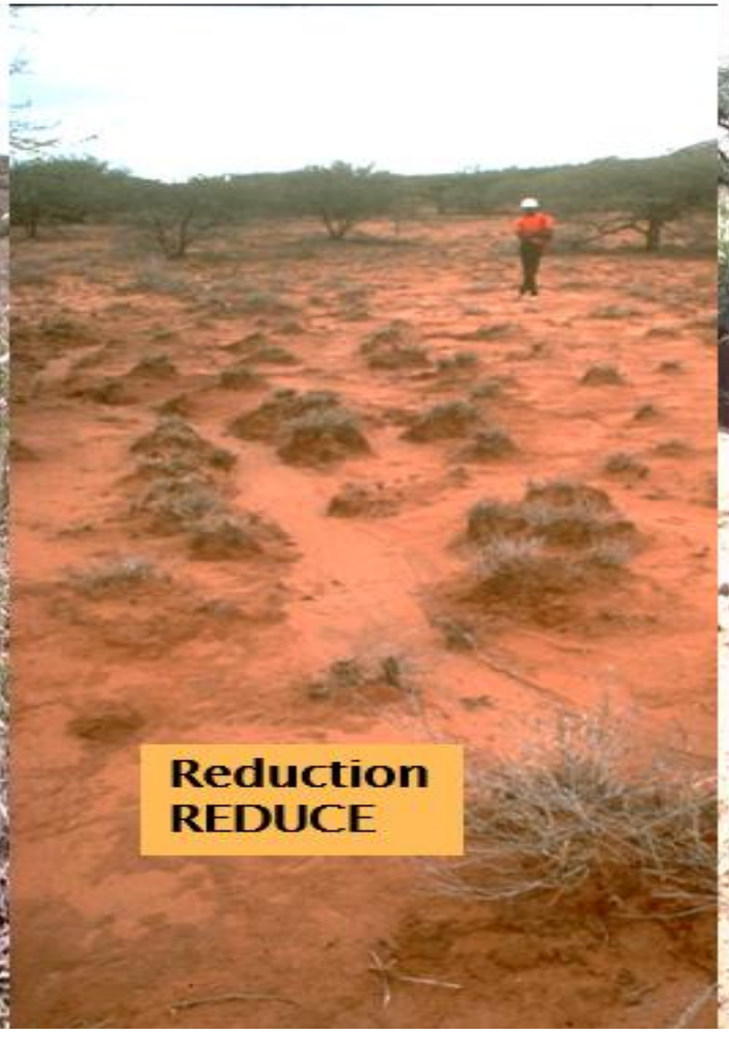
Land Degradation Neutrality Response Hierarchy





SDG 15.3.1
PROPORTION OF LAND THAT IS DEGRADED

TRENDS IN LAND COVER

TRENDS IN LAND PRODUCTIVITY

TRENDS IN CARBON STOCKS

*"While it is difficult for a single indicator to fully capture the state or condition of the land, the sub-indicators are **proxies** to monitor the essential variables that reflect the capacity of the land to deliver ecosystem services"* **Sims et al. 2021**

“Sustainable Forest and Rangelands Management in the Dryland Ecosystems of Uzbekistan” (LDN) project

- The implementation of this project serves to implement the important tasks defined in the decision of the President of the Republic of Uzbekistan dated February 22, 2019 "On measures to increase the effectiveness of work to combat desertification and drought of Uzbekistan" and the decree of the President of the Republic of Uzbekistan dated June 10, 2022 "On measures to create an effective system of combating land degradation“. Also, the project supports the development of the "Road Map" for the fight against desertification and drought in the Republic for 2024-2028.
- The decision of the President of the Republic of Uzbekistan dated June 10, 2022 "On measures to create an effective system of combating land degradation".
- Also, the project supports the development of the "Road Map" for the fight against desertification and drought in the Republic for 2024-2028.

Voluntary LDN national targets of Uzbekistan

- Uzbekistan supported the adoption of the 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDGs) in 2015.
- During a high-level political meeting under the auspices of the United Nations Economic and Social Commission that took place on July 15, 2020 in New York, the RoU for the first time presented its Voluntary National Review (VNR) on Agenda 2030.
- As a party to the United Nations Convention to Combat Desertification (UNCCD), Uzbekistan considers the principles of Land Degradation Neutrality (LDN) as a core concept targeting land productivity and ensuring economic and social stability of the population.

Voluntary LDN national targets of Uzbekistan

Voluntary SDG Target 15.3 on Land Degradation Neutrality (LDN) adopted by Uzbekistan is **“By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and flooding, and achieve degradation neutrality of land”.** The adopted national indicator was formulated as **“The proportion of land that is degraded (irrigated and not irrigated) over the total land area”.**

Proposed national impact indicators

- Area under tree-nut plantations (pistachio, walnut, almond) (ha, expansion)
- Share of forage crops in the total structure of the sown area (%)
- Area under the vegetation and forest cover (ha, expansion)
- “Soil bonitet rating” – a soil quality index
- Soil humus content
- Rangelands productivity (PRAGA methodology)
- Share of land with moderate and high salinity (%, reduction)

Process indicators

- Stress-reduction indicators include the following environmental and socio-Adoption of the LDN monitoring framework
- Strengthened LDN monitoring framework:
- Improved governance for pastureland systems
- Number of sectoral and local authorities that report on improved legal framework supporting sustainable pasture management
- Number of participatory land management plans
- Number of people trained on SLM on pasturelands and investment planning (broken by group)

Technologies used against land degradation

Pasturelands (desert and foothills)

1. Pasture rotation
2. Creation of improved autumn-winter pastures in the foothill by sowing the seeds of natural plants
3. Accelerated rehabilitation of severely degraded pastures through fencing and production of seeds for supplemental seeding
4. Cultivation of desert drought-resistant crops for fodder production
5. Pasture shelterbelts in the desert areas
6. Planting of trees and shrubs on small terraces to increase productivity of eroded soils
7. Planting of trees and shrubs on terraces on land with large slopes
8. Improvement of land under arid conditions through establishment of pistachio plantations

Technologies used against land degradation

Irrigated agriculture

1) Crop diversifications on the salt effected soils introduction legumes
2) Forest strips to protect fields
3) Laser land leveling to rise on-farm water use efficiency
4) Contour ploughing on low slope land
5) Using compost as organic fertilizer
6) Production of biogas and use of waste from its production as bio-fertilizer
7) Drip irrigation and improved watering by furrow
8) Conservation agriculture (zero tillage, minimum tillage)
9) Afforestation for rehabilitation of degraded irrigated croplands


Thank you very much!