

United Nations
Convention to Combat
Desertification

United for land

General information

Central Asia is located in the heart of Eurasia and includes five independent countries: **Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan**. It is the only region in the world that is composed entirely of landlocked developing countries. Its total area is 400.8 million ha and the population exceeds 75 million (the population has tripled over the past 50 years). Statistically, the region can be classified as sparsely populated, as there are approximately 17 people per square kilometre.



The region's biophysical conditions include mountainous terrain and an arid climate. **More than 80 per cent of the region's territory is occupied by deserts and steppes**, namely the Karakum Desert, the Kyzylkum Desert and the Mutyunkum Desert.



Approximately **60 per cent of the Central Asian population lives in rural areas** (especially in the region of Aral Sea basin, formed by the Amu Darya and Syr Darya rivers, and is engaged in agriculture, making it the main driver of most of the Central Asian countries' economic development.

Over the past century, there has been a significant increase in human-induced pressure on land, evident in the deforestation, expansion of irrigated lands, heightened water extraction for industrial and domestic purposes, substantial growth in the animal population, and consequently, increased grazing pressure on pastures. All these factors, combined with the arid climatic conditions, **have resulted in land degradation**, a reduction in productive water resources, and the depletion of fertile soils. Population growth has also contributed to these phenomena, as a continual increase in agricultural production to ensure food supply was needed, as well as the expansion of production to provide employment opportunities.

This adds up to 420 million hectares, or 4.2 million square kilometers, slightly over the combined area of five Central Asian nations: Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. If current trends continue, **restoring 1.5 billion hectares of land by 2030 will be necessary** to achieve a land-degradation-neutral world. Alternatively, halting any new land degradation and accelerating existing commitments to restore 1 billion hectares can surpass the neutrality target.

400.8
MILLION HA



1.3
BILLION

According to the latest UN data¹, between 2015 and 2019, at least 100 million hectares of healthy and productive land were degraded every year, affecting food and water security globally and directly impacting the lives of 1.3 billion people.

¹ The Sustainable Development Goals Report Special edition 2023 <https://unstats.un.org/sdgs/report/2023/The-Sustainable-Development-Goals-Report-2023.pdf>

In Central Asia, **governments and international organizations have undertaken significant efforts since the 1990s to inventory, develop, and promote sustainable land management (SLM) practices**, which encompass both traditional methods specific to the region and innovative approaches aimed at mitigating and addressing emerging risks and issues stemming from climate change and land degradation.

Over the years, **UNCCD-spearheaded activities in Central Asia have included the preparation of national action programmes (NAPs) to combat desertification**, the setting of Land Degradation Neutrality (LDN) targets, the development of national drought policies and regional drought and sand and dust storms (SDS) management strategies, the preparation of Nationally Appropriate Mitigation Actions in the context of sustainable development and climate change-related actions.

Drought

Drought is a complex natural phenomenon which requires comprehensive and integrated approaches and solutions.

All Central Asian countries are prone to droughts, which result in direct and indirect losses and economic damages each year. Repeated droughts undermine the economic, environmental and social foundations of the five countries and hinder their social and economic growth.



12 million people

About 60 per cent of Central Asia's population is directly dependent on agriculture as the primary source of income, therefore droughts pose a serious threat to the economic security and well-being of the majority of the region's population.

Around 12 million people in Central Asia live in areas with high drought risk, which covers about 40 million ha. Most of these hotspots – areas that are especially prone to droughts – are located in the foothill areas of the source of the Amu Darya and Syr Darya deltas, extending to the transboundary areas of the Aral Sea region.

As droughts and the degradation of economically productive lands can lead to **increased poverty, higher levels of environmental migration and lower development rates** in the region, proactive and coordinated actions need to be taken to address the causes of these negative phenomena.

Given the transboundary nature of drought impacts, planning for coherent and complementary actions to reduce drought risks and vulnerabilities should be coordinated at the regional level, supported by national data-sharing, monitoring and forecasting.

Water

There is a direct and strong correlation between drought, the availability of freshwater and agriculture, especially in the context of Central Asia.

100,000 km²

The region's political and socioeconomic stability depends largely on the availability and quality of freshwater. The countries of the region mainly use their water supplies for irrigation purposes, meaning their total water consumption is very high. All five countries are major agricultural producers, cultivating water-intensive crops such as cotton and rice. **Since precipitation is becoming increasingly scarce and unpredictable, agricultural producers are having to resort to using even more water for irrigation.**

The total area of irrigated lands across the region is about 100,000 km².

The rapid population growth, expansion of irrigated lands and development of industrial and communal enterprises that is taking place in Central Asia necessitates the quest for new sources of freshwater. As over 90 per cent of agricultural products in Central Asia come from irrigated agriculture, the shortage caused by the misuse of freshwater puts the region's food security at risk.

30
MILLION HA
67

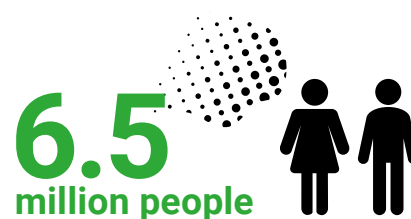


In Central Asia, water erosion and wind erosion affect more than 30 million ha and 67 million ha, respectively.

Sand and dust storms

More than 80 per cent of about 400 million ha of Central Asia is covered by deserts and steppes, which coupled with climate change and lasting droughts, represent a natural source of sand and dust storms (SDS). Unsustainable practices of irrigation farming and livestock grazing, mining and other land use change activities create conditions for the formation of human-induced SDS sources. Nearly 6.5 million people or 9 per cent of the region's population live in high-risk areas. The SDS-prone area in Central Asia equals 85 million ha (medium and high risk).

6.5
million people



The Aral Sea catastrophe is one of the most severe global ecological disasters in modern history, that led to the development of 5.5 million ha of salty desert. It is a major anthropogenic SDS source that emits more than 100 million tons of dust and poisonous salts every year, impacting the health and the future not just of the people living in the vicinity, but far beyond.

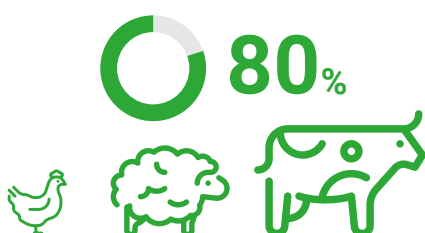
The impacts of SDS are multifaceted, intersectoral and often transnational. It is suggested that salts from the Aral Sea region are being detected along the coast of the Antarctic, on glaciers in Greenland, in Norwegian woods and other regions around the globe². **SDS also directly impacts agriculture by decreasing crop productivity** due to reduced biomass photosynthetic activities and soil erosion.

Central Asian countries are taking measures to offset the negative consequences of SDS processes and the Aral Sea catastrophe: **amendments to relevant legislation, wide-scale afforestation of territories and the creation of protective forest belts**. Beyond such measures, more comprehensive regional programs are needed to ensure that the frequency and severity of SDS are reduced and that their negative impacts are mitigated across Central Asia.

Rangelands

In Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan **rangelands occupy more than half of the countries' territory**, with **pastoralism providing livelihoods for most of the population**. Pastures, along with arable lands, and forests, serve as the foundation of food security and income opportunities in the region.

80%



Roughly 80 per cent of land in Central Asia is used for pastoralism, with livestock grazing year-round. Today, up to 50 per cent of the region's rangelands need to be supplied with water. A lack of access to watering points reduces the mobility of herders, causing overgrazing of pastures near settlements and undergrazing of remote areas. Uneven grazing ultimately contributes to the formation of anthropogenic sources of SDS which leads to further deterioration of soils and suppresses the vegetation.

² O'Hara, S., Wiggs, G., Mamedov, B., Davidson, G. and Hubbard, R. (2000). Exposure to airborne dust contaminated with the pesticide in the Aral Sea region. *The Lancet*, 355(9204), 627–628

Sheep breeding is among the main animal husbandry activities in the region. Cattle breeding is typical for suburban areas and densely populated oases in Central Asia. Unsustainable use of pastures, such as overstocking, overgrazing and disrupted seasonality of grazing are the main factor in the pasture degradation processes and desertification. Moreover, human-induced impacts on natural vegetation cause changes in plant species' variety in some areas and even complete disappearance of some plant species in others.

Measures to ensure the sustainable productivity of agricultural lands, such as sustainable use of vegetation together with seasonal pasture rotation and introducing economic mechanisms to prevent and reverse land degradation and reduce drought risks could effectively reduce the poverty levels and raise the standards of living for the Central Asian population.

Gender



One of the main principles of the 2030 Agenda for Sustainable Development is to ensure the participation of all population groups and their equal access to resources and opportunities.

The Central Asia region overall is characterized by an officially high level of equality between men and women: all Central Asian countries have ratified the **Convention on the Elimination of All Forms of Discrimination against Women** as well as have included gender issues in their legislative documents. Nonetheless, the persistence of discriminatory laws, social norms and practices means that women and girls remain vulnerable in the face of inequality.

Regardless of the fact that men and women have equal rights by law in all countries of the region, they are **impacted differently due to their different social roles in public and private spheres**, most prominently among rural communities. Rural women engaged in rural activities and household chores are left exposed to the effects of climate change. Land degradation and drought as male population migrates in search of work to other countries in search of work. The development challenges in rural areas are exacerbated by the low levels of social and technical infrastructure, as well as limited access to water. At the same time, women are increasingly aware of their potential for more active community involvement and leadership.

Gender equality as the foundation of the effective implementation of the SDGs **calls for creating an enabling environment for engaging vulnerable groups** and supporting community-led actions to mitigate climate vulnerability and increase livelihood resilience in the face of environmental risks, including land degradation and drought.

Capacity-building for women and other socially vulnerable groups, including early warning and knowledge sharing, could help better prepare and address the effects of desertification, land degradation and drought, as well as SDS. Inclusive education on the existing risks, their potential effects and ways to address them proactively is among the main awareness-raising activities to mitigate impacts and reduce the negative environmental impacts.

Migration

Central Asia is considered one of the most stable and largest migration routes in Eurasia.

The main type of migration in Central Asia is labour, or economic migration. Despite the disparity in statistics, according to some estimates, from 2.5 to 4.3 million people, or 10–15 per cent of the economically active population of Central Asia are involved in labour migration annually.

Desertification, coupled with growing anthropogenic pressure, due to population growth and density on productive land, along with the impact of climate change, leads to a decrease in land productivity, water availability, and water supply, resulting in reduced crop yields and lower livestock productivity. Consequently, the population's income and living standards

decline, contributing to both outward migration and the more intensive utilization of land resources. Land degradation, albeit being a complex phenomenon with natural and socioeconomic aspects, typically acts as a trigger for other processes. The primary causes of migration are often rooted in the socio-economic sphere, such as declines in aggregate income, unemployment, increased social discontent, and sanitary and epidemiological problems.

The environmental catastrophe of the Aral Sea alone has led to the displacement of more than 100,000 people and affected the health of over 5 million people throughout the whole of Central Asia, with a sharp increase observed in the incidence of numerous diseases.

100,000
people

Land Degradation Neutrality

Achieving Land Degradation Neutrality through measures that help stop, avoid and, where possible, reverse land degradation processes, plays an important role in the region's sustainable development. By the end of 2023, when Tajikistan is expected to complete its Land Degradation Neutrality Target-setting process, all Central Asian nations will be a part of the LDN TSP programme under UNCCD, bringing the total number of participating countries to 131.

Below are some examples of the voluntary land restoration commitments by the Central Asia countries:

Kazakhstan: Increase land-use effectiveness overall and increase irrigated lands by 40 per cent, expanding the total irrigated area to 2 million ha

Uzbekistan: While the country reported the highest proportion of degraded land in the Central Asia region, it also saw the largest decrease – from 30 per cent to 26 per cent – compared to 2015. A total of 3 million hectares of land in Uzbekistan have been degraded due to the drying of the Aral Sea. Between 2018-2022, Uzbekistan carried out saxaul planting on an area of 1.6 million ha to eliminate salt and dust emissions from the drained bottom of the Aral Sea.



Kyrgyzstan: Improve the ecological condition of pastures by introducing a pasture rotation system and improve access to 10,000 ha of pastures by strengthening pasture infrastructure (bridges/roads, watering points). Introduce the practice of sustainable land resource management on 100,000 ha of land (including pastures and forests) and carry out reclamation works on 10,000 ha of agricultural land.

Turkmenistan: Ensure greening of desert areas, irrigated lands, settlements with total area up to 160 thousand ha by 2025 (within the framework of the National Forest Program).

DATA³

Land degradation
SDG Indicator 15.3.1



In Central Asia at least 20 per cent of the total land area is degraded, while most other regions are over 10 percent⁴.

³ Important Notice on interpretation: The information presented should in no way be interpreted as a comprehensive global or regional assessment of status and trends in the indicators/metrics. The facts related to the proportion of degraded land (i.e. SDG indicator 15.3.1) are compiled from data "as received" from four Central Asian country Parties in their 2022 national reports, and one country-estimate drawn from global data sources (Tajikistan). All other facts are compiled from data "as received" from four Central Asian country Parties in their 2022 national reports.

⁴ Higher proportions of degraded land are also observed in Eastern Asia, Latin America and the Caribbean.

Proportion of degraded land (SDG Indicator 15.3.1)



- Over 20% of the total land area in Central Asia is degraded, equivalent to roughly 80 million ha, **an area almost 4 times the size of Kyrgyzstan**
- Most of the **land degradation is associated with arid environments**
- The most prominent manifestations of land degradation are **salinization, erosion and loss of land productivity** in both crop and animal production sectors.

Area under drought



- 152.06 million ha or 38.43 per cent of the reported land area in Central Asia is under drought, out of which 1.33 per cent is under severe drought and 0.23 per cent is under extreme drought.
- The amount of water available to rural population during the drought is restricted by natural shortage of water resources and the growing needs of urban population and industry.

Population exposed to land degradation



- 18.01 million people in Central Asia are reported to be exposed to land degradation, an amount equivalent to 30.51 per cent of the reported total population.
- The percentage of population exposed to land degradation varies from 29.2 per cent in Uzbekistan (9.3 million people) to 35.5 per cent in Kyrgyzstan (1.9 million people).
- Men and women are reported to be exposed to land degradation in approximately equal proportions in Central Asia.

Population exposed to drought



- 26.7 million people are reported to be exposed to drought in Central Asia, amounting to 51.28 per cent of the reported total population.
- The percentage of population exposed to drought varies from 20.75 per cent in Turkmenistan (1.67 million people) to 88.71 per cent in Kyrgyzstan (4.74 million people).
- Men and women are reported to be equally exposed to drought in Central Asia.

LDN Target Setting

- The areas committed to restoration in Central Asia vary from 0.34 to 0.7 per cent of a country's total land area.
- Half of the targets set by countries in Central Asia have already been achieved, with projects to deliver on the rest of the commitments currently underway



USEFUL PUBLICATIONS

UNCCD website



Regional Strategy for Drought Management and Mitigation in Central Asia for 2021-2030.

<https://www.unccd.int/resources/brief/regional-strategy-drought-risk-management-and-mitigation-central-asia-2021-2030>



Regional Midterm Strategy for Sand and Dust Storm Management in Central Asia 2021-2023.

<https://www.unccd.int/resources/brief/regional-strategy-sand-and-dust-storms-management-central-asia-2021-2030>



The Nexus between Land Degradation, Climate Change and Migration in Central Asia.

<https://www.unccd.int/resources/case-studies/study-land-degradation-climate-change-and-migration-nexus-central-asia>



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