

# REGIONAL MID-TERM STRATEGY FOR SAND AND DUST STORM MANAGEMENT IN CENTRAL ASIA FOR 2021-2030

## POLICY BRIEF

### PRIORITY AREAS:

- **Area 1: Strengthening knowledge about SDS** will help reduce the risks associated with them. Awareness of potential harms, risks, and related mitigation measures will be increased and better communicated. In addition, it will inform integrated and synergistic interventions and stimulate knowledge and technology transfer.
- **Area 2: Mitigation of the impact of anthropogenic sources of SDS** is aimed at elimination of environmental and socio-economic causes of DLDD as well as at understanding the impact of sand and dust storms on various sectors of the economy both at the source and at the destination.
- **Area 3: Regional cooperation and joint actions** would provide the necessary basis for solving environmental problems in Central Asia through coordinated and joint actions, especially in the Aral Sea basin.

### OVERALL GOAL

A long-term vision of the Regional Mid-term Strategy for Sand and Dust Storm (SDS) Management in Central Asia for 2021-2030 is a reduction of social vulnerabilities of the countries and communities to SDS manifestations using mitigation at source and destination areas. The mid-term goal of the Regional Strategy is to increase system and institutional capacities for effective and sustainable management of sand and dust storms and natural resources in the Central Asian countries (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan).

While considering challenges associated with climate change the Regional Strategy elaborates on the anthropogenic sources of SDS caused by unsustainable land management practices. The Strategy recommends measures across three priority areas.

### HOW SERIOUS ARE SAND AND DUST STORMS IN CENTRAL ASIA?

Sand and dust storms (SDS) are common meteorological events in arid and semi-arid regions of the world. The continental climate of Central Asia characterized by long hot summers, cold winters, large amplitude of daily temperatures, dry air and scarcity of precipitation provide favourable conditions for the occurrence of SDS.

In areas with degraded land, winds blow out small particles containing a significant portion of nutrients and humus. Experts estimate that global dust emissions range from 1 to 3 Gt per year. Research by the UN Environment Programme (UNEP) suggests that global dust emissions have increased by 25–50 percent since 1900 as a result of land use and climate change.

In Central Asia, overgrazing of livestock, secondary soil salinization, depletion of water resources and

irrational use of natural resources lead to more frequent and strong manifestations of SDS. All these and other anthropogenic factors exacerbate the processes of desertification, land degradation and drought (DLDD). The only way to slow down DLDD and achieve Land Degradation Neutrality (LDN) is to strengthen regional cooperation.

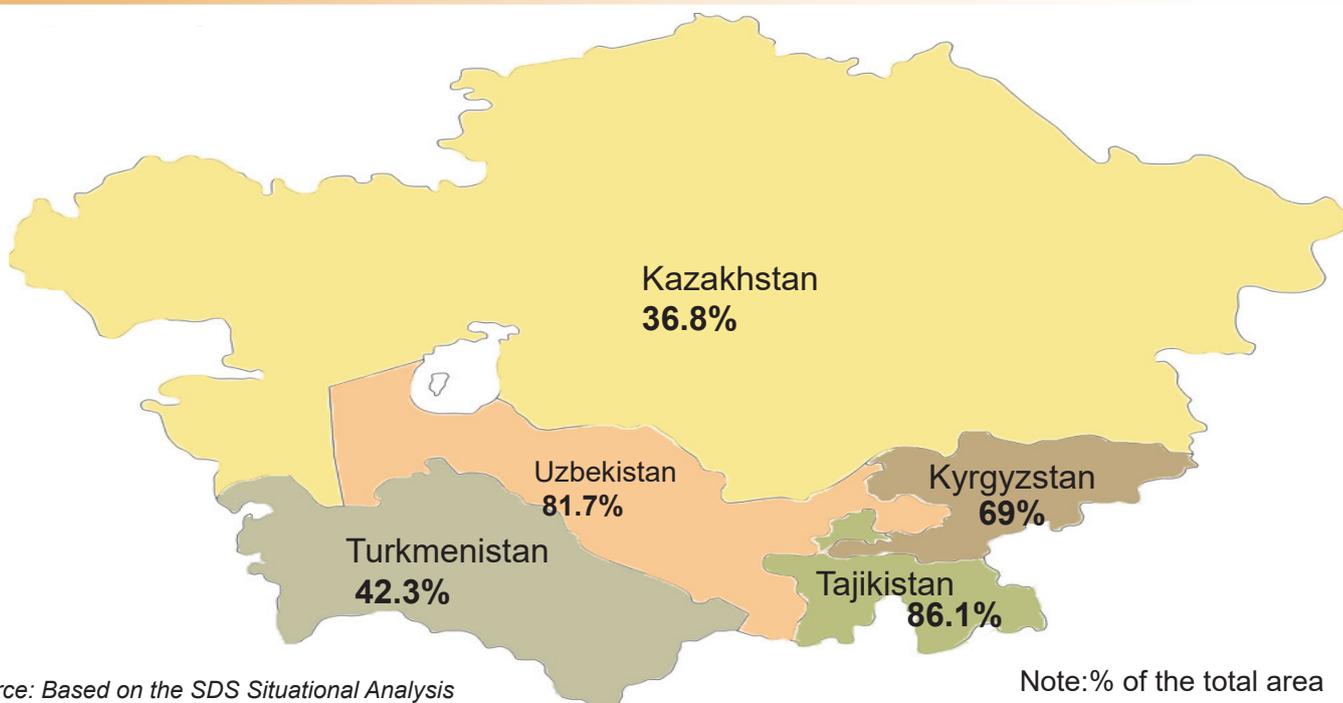
Natural factors that provoke SDS in Central Asia are high temperatures, prolonged periods of drought, low precipitation, the presence of large areas of sand and clay deserts, and frequent winds. More than 80% of the region's territory is represented by deserts and steppes, which are a source of sand and dust.

Each country is susceptible and vulnerable

to SDS. Sources of natural origin in Kazakhstan include the sand deserts of the Mangyshlak Peninsula (Bostamkum, Tuyusuv, Karanzharyk, Aralkum, Moyunkum), in Uzbekistan most of the Kyzylkum and the Priaralsky region, and in Turkmenistan the Zaunguz Karakum, Western and Northwestern Karakum.

About 6.5 million of Central Asians live in areas with the highest risk of SDS, which amounts to 9 per cent of the region's population. Kazakhstan, Uzbekistan, and Turkmenistan are most vulnerable to SDS, while Tajikistan and Kyrgyzstan are less so. However, SDS can afflict large territories and cross borders. Therefore, the number of people indirectly affected by SDS is much higher.

**Picture 1: The extent of land degradation in Central Asian countries**



Source: Based on the SDS Situational Analysis

## THE ARAL SEA DISASTER AND SAND AND DUST STORMS

Since the intensive development of irrigation in the Aral Sea basin has begun in the early 1960s, significant sources of secondary salinization have appeared. The Aral Sea tragedy is one of the largest environmental disasters in recent

history. The Aral seabed emits over 100 million tons of dust and toxic salts annually. At least 73 million people living in Central Asia are affected by the catastrophic state of the Aral Sea. Its state is threatening public health and the sustainable

A salt desert with an area of **5.5 million hectares** has appeared on the dried-out Aral seabed > **1.5x** size of Belgium

**Dust storms** raised from the Aral seabed reach 400 km in length and 40 km in width or **1.6 hectares**



Over **90 days** a year, dust storms rage over it, carrying over **100 million tons of dust and toxic salts** into the atmosphere.

development of the region. The drying up of the sea has led to a dramatic change in climate, felt not only in Central Asia, but also in other regions. The Aral Sea crisis zone includes the territories of Turkmenistan, Kazakhstan and Uzbekistan and indirectly affects Tajikistan and Kyrgyzstan.

According to international experts, poisonous

salts from the Aral region have been found on the coast of Antarctica, on the glaciers of Greenland, in the forests of Norway and many other parts of the world. The most important task of the present time 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.

## WHY THE REGIONAL STRATEGY IS NEEDED

Central Asian economies are still largely based on agriculture, which accounts for 10–38% of GDP and provides 18–65% of employment in the countries of the region. This fact makes Central Asia particularly vulnerable to droughts, which can reduce agricultural production, increase food prices and unemployment, inhibit access to markets and lower farmers' income. Agricultural yields across the region have declined by 20–30 per cent since 1991, resulting in \$2 billion in annual agricultural production losses.

In addition, SDS negatively affect the functioning of road and rail transport, industrial enterprises, damage power lines, communications, pipelines, irrigated lands, settlements and other infrastructure.

Airborne dust is a serious threat to human health, especially if it contains toxic substances. Fine dust particles can carry a wide range of pollutants, spores, bacteria, viruses, fungi and allergens. Dust particles can contribute to a wide

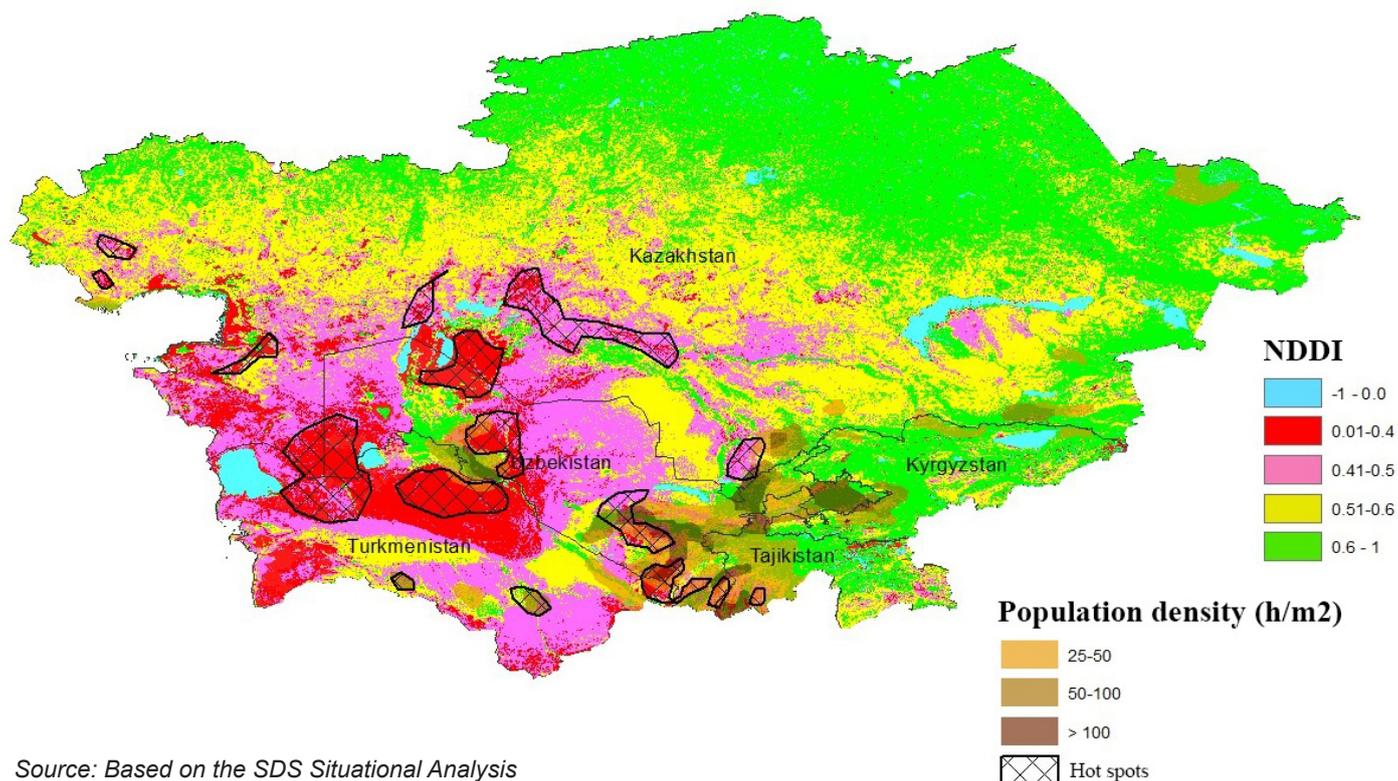
range of diseases. People with lung or heart diseases, as well as elderly people and children are especially vulnerable.

Dust particles adversely affect the respiratory system leading to an impaired lung function and a chronic slowdown in the growth of lung tissue. Inhalation of dust particles can cause many serious non-infectious diseases of the respiratory and cardiovascular system, cancer, and contribute to premature death.

Dust often leads to eye and skin diseases and infections such as meningitis. Dust can exacerbate chronic diseases.

About 60% of Central Asia's population lives in rural areas and most of them depend on incomes directly or indirectly related to the agricultural sector. Low living standards of the rural population, malnutrition, inadequate medical care, unsuitable drinking water, dust and salt storms resulting from the degradation of the habitat have led to a sharp deterioration in of public health.

**Picture 2: High Vulnerability Hotspots to Sand and Dust Storms**



Source: Based on the SDS Situational Analysis

## EXISTING SUSTAINABLE LAND AND SAND AND DUST STORMS MANAGEMENT PROGRAMS

The countries of the region are committed to sustainable development. In the past decades, the countries of Central Asia have adopted fundamental legal acts, national strategies and programs that constitute the legal basis for sustainable development and environmental protection. The countries have signed more than 29 international environmental conventions and more than 20 agreements, which laid the foundations for the mechanism of regional cooperation. Some of the major documents adopted include:

- The United Nations Convention to Combat Desertification;
- The United Nations Framework Convention on Climate Change;
- The Sendai Framework for Disaster Risk Reduction 2015-2030;
- The Convention on Biological Diversity.

Countries of Central Asia have been adapting integrated approaches to sustainable land management (SLM) and efficient use of land and water resources.

In Turkmenistan, a National Action Program to Combat Desertification has been implemented for a number of years. As part of the program, 22 thousand hectares of drift sands have been fixed along railways and highways since 1991.

Both Kazakhstan and Uzbekistan are carrying out work on restoring the Aral seabed. In Uzbekistan, over 1.5 million hectares of forests have been planted within the State Program for the Development of the Aral Sea Region for 2017-2021. In Kazakhstan, 1.8 million saxaul saplings have been planted in the Kazakh part of the Aral seabed on an area of 1 thousand hectares.

That said, regular scientific research on SDS processes is not carried out in Central Asia with the exception of studies undertaken by the Institute of Geography and Water Security (Almaty) and the National Institute of Deserts, Flora and Fauna of Turkmenistan (Ashgabat). There is no specialized mapping on the development and impact of drought and SDS. The impact of SDS on public health and the economy of Central Asia has not been studied in detail. Currently, SDS are monitored irregularly and haphazardly.

Three Central Asian countries – Kazakhstan, Kyrgyzstan and Uzbekistan – have set Land Degradation Neutrality (LDN) targets, while Tajikistan and Turkmenistan are currently developing their own LDN targets. Current measures include increasing the number of irrigated pastures, implementing pasture rotation and tackling desertification. However, it is crucial that LDN targets include goals concerning SDS sources.

One of the latest documents of regional significance is the Regional Environmental Programme for Sustainable Development in Central Asia (REP4SD-CA) 2021-2030. This document is the basis for regional cooperation and sustainable development, which aims at implementing national objectives in line with SDGs. Currently, the priorities of the Regional Medium-Term Strategy for Sand and Dust Storm Management are being integrated into REP4SD-CA. The integration will contribute to the improvement of the socio-economic and environmental situation in the Aral Sea basin and help Central Asia achieve SDGs.

## REGIONAL MID-TERM STRATEGY FOR SAND AND DUST STORMS MANAGEMENT IN CENTRAL ASIA

The Mid-term Strategy for Sand and Dust Storm Management in CA 2021–2030 will promote regional integration and strengthen effective cooperation aimed at reducing the risks and mitigating the impact of SDS.

The purpose of this document is to express the intention of countries to work in the field of environmental protection and to minimize the negative economic and social impact of SDS in each country and the region as a whole.

International environmental conventions

and treaties provide an international legal framework for partnership between the countries on environmental protection and the use of natural resources of the region including open-air protection, conservation of biodiversity, water quality, combatting desertification and man-made impact of natural resources. However, the synergism between international partners and conventions is largely manifested only at the national level and is practically non-existent at the regional

level. This creates certain barriers for regional cooperation, however represent untapped opportunities for joint research, experience and data sharing as well as formulating a common regional position in international and inter-governmental processes.

The majority of activities within the Regional Mid-Term Strategy for Sand and Dust Storm Management in Central Asia will be implemented through partnership programs

and the initiatives of regional and international development partners. The UNCCD Secretariat and CAREC will play an active role in attracting grants and other external funding and running projects contributing to the achievement of the objectives set out above and within the Regional Environmental Programme for Sustainable Development in Central Asia (REP4SD-CA) 2021-2030.



**Disclaimer:**

*This document has been prepared with the financial support of the United Nations Convention to Combat Desertification (UNCCD) within the framework of the project “Regional Approaches to Combating Sand and Dust Storms and Drought in Central Asia”, which is being implemented by the Regional Environmental Centre for Central Asia (CAREC). The document may contain advice, opinions and statements from various sources of information.*



**United Nations**  
Convention to Combat  
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