POLICY ADVOCACY FRAMEWORK FOR SAND AND DUST STORMS

United Nations
Convention to Combat Desertification

United for land

The United Nations Convention to Combat Desertification (UNCCD) is an international agreement on good land stewardship. It helps people, communities and countries create wealth, grow economies and secure enough food, clean water and energy by ensuring land users an enabling environment for sustainable land management. Through partnerships, the Convention's 197 parties set up robust systems to manage drought promptly and effectively. Good land stewardship based on sound policy and science helps integrate and accelerate achievement of the Sustainable Development Goals, builds resilience to climate change and prevents biodiversity loss.

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Policy Advocacy Framework for Sand and Dust Storms

PREAMBLE

Decision 8/COP.9 requested the secretariat to generate advocacy policy frameworks on thematic issues in order to address the adverse impacts of DLDD, and to regularly inform affected countries and other key stakeholders on such proceedings that may be useful in the implementation of action programmes.

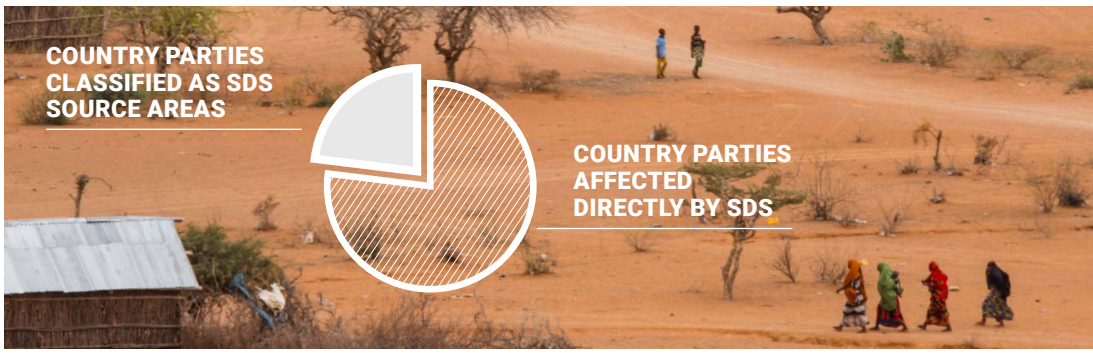
The United Nations General Assembly (UNGA) resolutions on "Combatting sand and dust storms" adopted in 2015 (A/RES/70/195) and 2016 (A/RES/71/219), respectively, acknowledge that SDS represents a severe impediment to the sustainable development of affected developing countries and the well-being of their peoples. The UNGA resolutions emphasize the need to strengthen the leadership role of the United Nations system in promoting international cooperation to mitigate and contain SDS. The UNCCD, in collaboration with WMO and the United Nations Environment Programme (UNEP) produced a Global Assessment of Sand and Dust Storms, in response to UNGA resolution A/RES/70/195.

Based on decisions 9/COP.10, 9/COP.11 and 9/COP.12, the secretariat, in collaboration with UNEP and WMO, developed the draft policy framework for sand and dust storms (PFSDS) below.

The draft PFSDS was circulated to, and benefitted from the comments by, UNCCD national focal points.

RATIONALE

Some 151 country Parties (77 per cent) are affected directly by SDS and 45 Parties (23 per cent) are classified as SDS source areas.[1] Many SDS originate in arid, semi-arid and dry sub-humid areas, although their impacts are frequently felt outside drylands due to long-range transport of dust.



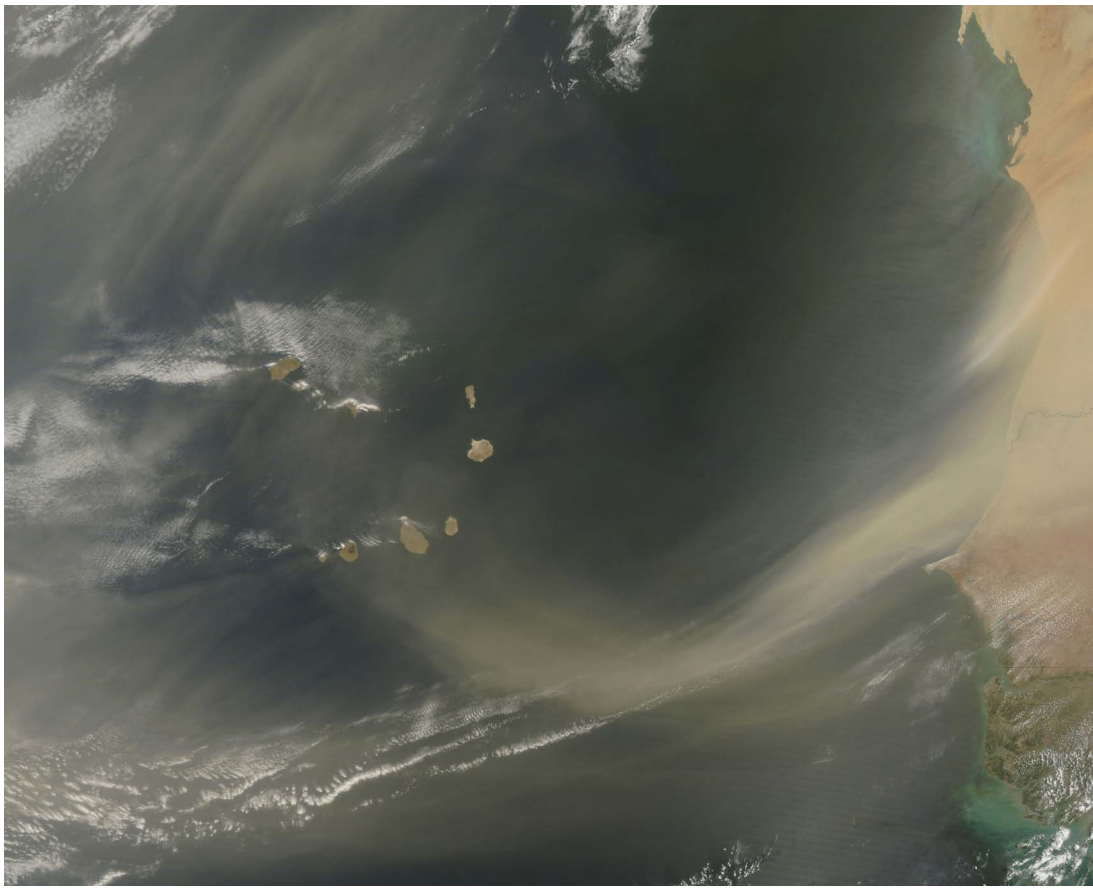
SDS are not new phenomena and societies in many regions have long been exposed to SDS hazards, causing concern about the environment, economies and societies. But there is growing concern due to recent increases in the frequency and intensity of SDS in some areas and also possible future increases as a result of land-use change in source regions, and climate change.

1. Middleton, N. and U. Kang, Sand and dust storms: impact mitigation. Sustainability 9, 1053 (2017).

Important potential drivers of future wind erosion and SDS occurrences include desertification, land degradation and climate change, especially via unsustainable land and water use, more extreme wind events, greater aridity in some areas, and greater drought frequency, severity and duration. Droughts, typically associated with vegetation decline and drier soils, frequently result in greater SDS activity. The sparse vegetation cover, in combination with dry and friable dryland soils and sediments, creates conditions amenable to SDS activity.

As well as these natural drivers of SDS activity, there are situations where anthropogenic mismanagement has intensified SDS source activity, and other situations where new SDS sources have arisen as a result of unsustainable resource use. The relative significance globally of natural sources versus those where land use and management practices have increased the occurrence of wind erosion is not clear, but the distinction is important. The response to SDS hazards emanating from areas where human activity is a factor should concentrate on reducing dust emissions including through sustainable land and water management. When source areas naturally emit large quantities of dust it may be more prudent to focus efforts on managing the hazardous effects of SDS during transport and deposition.

The transboundary nature of many SDS events means that national SDS policies need to be coordinated in international and regional contexts. A policy framework could guide countries and help promote synergies among efforts to manage land sustainably and efforts to combat SDS.



POTENTIAL KEY POLICY INTERVENTION MEASURES

Defining sand and dust storms

There are many sources of atmospheric particulate matter, but SDS in this draft policy framework refers to mineral sand (particle size 63 microns to 2mm) and dust (particle size range < 1–63 microns) that originates from land surfaces.

SDS occur when strong, turbulent winds blow over dry, unconsolidated, fine-grained surface materials where vegetation cover is sparse or absent. Most locations are in the low-latitude drylands, but SDS sources occur in almost all environments, where and when conditions are favourable, often through human influence. This includes lake beds that have been desiccated due to society's use of water, agricultural fields left bare after harvests and/or ploughing, intensive grazing by livestock, logging, the use of fire, driving on unpaved roads, and clearance for urban development.

The spatial extent of SDS events varies greatly. Impacts at the local level come from sand storms, blowing dust, and sand dune encroachment. Dust particles can be transported much farther from the source, bringing dust haze to distant locations often across international boundaries. Large-scale dust haze events affect areas measured in tens of thousands and sometimes hundreds of thousands of square kilometres. Such areas are not static, because dust moves in the atmosphere, but certain areas are typically affected by hazardous dust concentrations because storms occur on a relatively frequent basis with distinct seasonal patterns. The duration of SDS events varies from a few hours to several days. Their intensity is commonly expressed in terms of the atmospheric concentration of particles and the resultant reduction in visibility.

Goal

The ultimate goal is to reduce societal vulnerability to this recurrent hazard by mitigating the impacts of wind erosion and SDS.[2] Policy advocacy will focus on efforts under three headings:

i. post-impact crisis management (emergency response procedures);

ii. pre-impact governance to strengthen resilience, reduce vulnerability and minimize impacts (mitigation);

iii. preparedness plans and policies.

2. Note that 'mitigation' is frequently used in different ways by different communities. In the natural hazards field, mitigation measures are commonly defined as actions taken in advance of SDS to lessen impacts the next time an SDS event occurs.

Objectives

The objectives are:

a. To develop national SDS policy based on the philosophy of risk reduction, including legislative and instrumental arrangements, and risk reduction strategies for resilience and preparedness;

b. To enhance north-south and south-south cooperation in SDS management and warning, and source mitigation;

c. To increase availability of and access to, and improve robustness of, comprehensive SDS early warning systems and risk information/ communication and assessments;

d. To reduce the number of people affected by SDS;

e. To reduce the economic losses and damage caused by SDS;

f. To strengthen resilience and reduce SDS impacts on basic services, including transport;

g. To reduce erodibility and the extent of anthropogenic SDS source areas in the land degradation neutrality;

h. To enhance scientific understanding of SDS, particularly in areas such as impacts and monitoring;

i. To enhance coordination/cooperation among stakeholders in SDS action at national, regional and global levels for strengthened synergies;

j. To increase financial opportunities for comprehensive SDS early warning and source mitigation.

Principles

The PFSDS suggests principles for developing and implementing more proactive SDS policies, in particular resilience building and source mitigation. The SDS policy should:

a. Establish a clear set of principles or operating guidelines to govern the management of SDS and its impacts. This policy should aim to reduce risk by developing better awareness and understanding of SDS hazards and the underlying drivers of societal vulnerability, along with developing a greater understanding of how being proactive and adopting a wide range of preparedness measures can increase societal resilience;

b. Be consistent and equitable for all regions, population groups bearing gender in mind, and economic sectors, and be consistent with the goals of sustainable development. A successful SDS policy can advance a range of Sustainable Development Goals (SDGs), including SDGs 1, 2, 6, 7, 9, 13 and 15. Similarly, achieving sustainable development as set out in these SDGs can help reduce the occurrence and impact of SDS in affected areas;

c. Address dust sources occurring in various environments including drylands, agricultural fields, coastal areas and high latitudes. Further, because of the transboundary nature of many SDS events, national SDS policies should be coordinated in international and regional contexts;

d. Be driven by prevention rather than by crisis. Reducing the impacts of SDS requires a policy framework and action on the ground, consistent with the Sendai Framework for Disaster Risk Reduction 2015–2030.

PRIORITIES FOR ACTION

The PFSDS suggests a proactive approach to addressing the negative impact of SDS in each of the three interrelated principal action areas:

i. monitoring, prediction and early warning;

ii. impact mitigation, vulnerability and resilience; and

iii. source mitigation. To implement this, crosscutting actions and a strong partnership will be needed.

Monitoring, prediction, early warning and preparedness

Identify and map populations vulnerable to SDS for early warning, including health advisories. The mapping of vulnerable populations and infrastructure/facilities, alongside future trend scenarios, is critical for strengthening socio-economic resilience. To enhance early warning, information needs to be collected and compiled along pathways of SDS, geographical areas affected, intensity, frequency, point sources at local level, mineral composition of dust.

Implement comprehensive early warning systems at national/regional levels. Early warning is a critical step in mitigating SDS impacts. It should enhance the ability of countries to deliver to users timely, quality SDS forecasts, observations, information and knowledge. Joint efforts for monitoring of SDS among research and operational communities is needed to contribute to early warning, taking into consideration harmonization of observation systems and data among stakeholders, including ground meteorological networks, air quality monitoring stations and the use of satellite data.

Impact mitigation, vulnerability and resilience

Identify and scale up best-practice techniques for physical protection of assets, including infrastructure and agriculture, against SDS in affected areas. Many appropriate techniques to reduce negative impacts of SDS (ex-ante and ex-post) exist and are implemented at national and regional levels. Knowledge of practices and techniques needs to be collected, compiled and disseminated to UNCCD Parties, inter alia, facilitated by the World Overview of Conservation Approaches and Technologies and the UNCCD Knowledge Hub, as appropriate.

Identify and scale up best-practice strategies to minimize negative impacts of SDS on key sectors and population groups including women. Many appropriate strategies (reactive and proactive) to minimize negative impacts of SDS already

exist and are implemented. They include actions to mitigate local aerosol concentrations (such as planting urban and peri-urban parkland to sequestrate dust particles as part of sustainable landscape management, and the installation of air filter systems) and emergency measures (for example, the closure of airports, distribution of face masks).

Establish and implement coordinated emergency response measures and strategies across sectors based on systematic impact/vulnerability mapping/assessment. Clear emergency procedures at national and sub-national levels are needed. Critical precursors include the mapping of vulnerable populations and future scenarios, and SDS economic impact assessments, including the costs/benefits of preventive actions.

Source mitigation

Identify and monitor SDS source areas. Source area mitigation strategies must be based on up-to-date scientific information on the character of source areas, particularly the nature and degree of anthropogenic influence, if any. Such information is of particular importance for appropriate specification of the nature and spatial and temporal distribution of dust sources in dust prognostic models.

Identify and scale up best-practice techniques for source mitigation. Many appropriate techniques already exist and are implemented at national and regional levels as part of sustainable land management (such as reduced tillage practices, dune stabilization schemes) and integrated land and water management approaches at landscape scales (for example, to prevent undesirable hydrological changes in potential source areas). Incentives towards (and, as importantly, barriers against) widespread adoption of good practice at the local level also need to be understood in order to avoid repetition of historical 'technical fix failures'.

Highlight synergies among the Rio Conventions and related mechanisms and initiatives for SDS source area mitigation strategies. Sustainable land/water management and integrated landscape management practices, restoration interventions and climate change mitigation options can all contribute towards the mitigation of anthropogenic SDS source areas, taking into account the future UNCCD strategic framework (2018–2030) and within the context of LDN and relevant decisions. Examples include CBD decisions relating to ecosystem restoration and the Aichi target 15. UNFCCC provides opportunities to address SDS-related issues, including the Agriculture, Forestry and Other Land Use framework and the Warsaw International Mechanism for Loss and Damage Associated with Climate Change Impacts. Actions required to tackle the drivers of SDS have to be consistent with actions recommended to tackle the three Rio Conventions and other United Nations commitments.

Integrate SDS source area mitigation practices into national efforts towards achieving SDG target 15.3 "land degradation neutrality". SDS source mitigation could be linked to LDN target setting and included as a voluntary sub-target in source countries.

Cross-cutting and integrated actions

Identify best-practice policy options and policy failures at regional/national/sub-national scales. Many SDS-relevant policies exist at national and regional levels, but could be better documented and shared.

Identify key SDS knowledge gaps for focused research. Many details of our knowledge of SDS processes and impacts are yet to be fully understood. Knowledge gaps pertinent to successful policy options need to be identified (for example by data collection, modelling of the nature and extent of SDS source regions, or impact analysis/assessment).

Mainstream SDS into disaster risk reduction. SDS should be fully integrated into multi-hazard management plans for disaster risk at all levels and across all sectors.

Build institutional capacity for coordinated and harmonized SDS policy development and implementation at regional, national and sub-national levels. SDS policies are exercised by different institutions at different levels. Coordination among institutions and sectors is imperative for successful integrated and synergistic actions at national level.

Explore innovative financing opportunities and other resources needed for SDS actions. To support the implementation of SDS policies at national and regional levels, appropriate funding is needed, including via existing financing mechanisms and opportunities such as the GEF and GCF. Integrating SDS source mitigation into current work programmes and projects on climate adaptation and impact mitigation, biodiversity conservation, disaster risk reduction and LDN will highlight co-benefits and strengthen the implementation of integrated landscape management, and increase synergy among the Rio Conventions.

Establish a coordination mechanism and partnership of relevant United Nations organizations for the consolidation of global policy around SDS in order to strengthen synergies and cooperation at a global level. A dialogue framework among existing instruments including UNCCD, UNEP, WMO, UNFCCC, CBD, the World Health Organization, UNOOSA, the United Nations Development Programme, and the United Nations International Strategy for Disaster Reduction, inter alia, can be tasked to develop a coordinated common strategy directly responding to SDS issues, considering the specific mandates and responsibilities of the relevant organizations, and to enhance the creation of synergy among the Rio Conventions in implementing SDS policies.

Establish an international platform for the dissemination of critical data and the exchange of experiences. A global SDS knowledge virtual centre involving an SDS- Warning Advisory and Assessment System (SDS-WAS), operated by WMO and other United Nations agencies, and interested countries and organizations, which may include:

i. a global scientific initiative,

ii. a platform for early warning and resilience, and

iii. a global platform for policy dialogue and coordination, would support global implementation.

Strengthen regional and subregional cooperation. The priority for regional cooperation includes information sharing, joint research, technology transfer and implementation of joint projects.

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