

WCC-2012-Rec-182-EN

International cooperation towards the mitigation of adverse impacts of aeolian aerosols

CONSIDERING that occurrence frequencies and the intensities of dust and sand storms (DSS) from many arid and semi-arid regions, including Northern China, Central Asia and Mongolia, are on an increasing trend due to the rapid desertification caused by climate change and unsustainable land uses such as overgrazing, intensive farming, deforestation for other uses, and that anthropogenic aerosol emission also has a remarkably increasing trend as a result of expanding industrial activity worldwide;

RECOGNIZING that increasing aeolian aerosols cause severely adverse impacts on the environment, ecosystems, and human health and socio-economic activities not only in the source regions but in the far downwind regions;

RECALLING that aeolian aerosols cause far-reaching adverse impacts on air pollution, visibility reduction and climate change affected by radiative balance;

ALSO RECALLING that aeolian aerosols impact terrestrial and marine ecosystems, such as damage to young plants, cattle suffocation, reduction in biological productivity, enhancement of plankton blooms, coral mortality in the ocean and eutrophication;

FURTHER RECALLING that aeolian aerosols convey endemic micro-organisms and potential microbial pathogens such as bacteria and fungi, which may cause adverse impacts on human health and cause respiratory (asthma) and eye diseases even in regions far downwind of the source regions;

FURTHER RECALLING that aeolian aerosols cause visibility degradation, leading to airport closures, traffic accidents and increased defect rates of sensitive scientific and industrial facilities;

AWARE that international cooperation is essential to effectively prevent desertification by identifying best practices to address primary causes of desertification in source regions, to establish a monitoring and early warning system for severe aerosol events, and to accurately assess the potential microbial risk in aeolian aerosols travelling long distance for the mitigation of adverse impacts of aerosols;

CONCERNED that the cause of desertification differs from region to region, however the countermeasures are indiscriminate and few international cooperation projects have been implemented to enhance capacity for the prevention of desertification;

ALSO CONCERNED that there still does not exist an integrated aerosol monitoring network, something that is essential for the accurate issuing of early warnings of aerosol events even though the World Meteorological Organization (WMO) has recognized the importance of aerosol events as a serious environmental issue, enough to establish a Sand and Dust Storm Warning and Advisory and Assessment System (SDS-WAS); and

FURTHER CONCERNED that microbiological understanding and analysis methodology are poorly established for assessing microbial risk in aeolian aerosols;

The World Conservation Congress, at its session in Jeju, Republic of Korea, 6–15 September 2012:

1. CALLS ON IUCN Members to:

- a. encourage affected and neighbouring countries to actively participate in efforts for preventing and controlling desertification and land degradation to mitigate DSS, in establishing an integrated aeolian aerosol monitoring network, and in conducting microbial risk assessment by establishing a network; and
 - b. cooperate with national and international agencies concerned with air quality, human health and natural disaster reduction, especially with the United Nations Convention to Combat Desertification (UNCCD) and the WMO Sand and Dust Storm Warning Advisory and Assessment System (SDS-WAS) to deliver high-quality observation data to users in a timely manner;
2. REQUESTS the Director General and IUCN Council to contact the WMO with a view to underlining the importance of establishing an integrated and global aeolian aerosol monitoring network; and
3. ENCOURAGES governments to:
 - a. establish a regulatory system for monitoring aeolian aerosols and for assessing their ecological and human health effects;
 - b. provide financial support for international, regional and sub-regional programmes for preventing desertification and monitoring aeolian aerosols and their ecological and human health effects; and
 - c. develop and apply a system to cooperate with international, regional and sub-regional institutions for evaluating the environmental impacts of aeolian aerosols.