



SOFIMUN
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COMMITTEE:
UNITED NATIONS ENVIRONMENT
PROGRAM

CHAIRPERSON:
LIDIYA SHTILYANOVA & JUN-HWAN
PARK

TOPIC: (B) – DESERTIFICATION

BACKGROUND GUIDE





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Topic B: Desertification - summary



Throughout the last decades, climate change has taken a bigger role to the international community due to its growing effects on necessities of mankind. Desertification is taken as a matter of the utmost importance due to its detrimental effect on agriculture. Food supply has never reached the shortages that they have in recent years. Droughts have caused forced migration which have ultimately lead to ethnic conflicts amongst borders. The United Nations Convention to Combat Desertification is the only legally binding framework which addresses the issue. Countries Party to the convention must increase on efforts to combat desertification for it is an issue that will carry on for decades, threatening the survival of many, particularly

those in underdeveloped countries.

Topic B: Desertification – background guide

Desertification (or desertization) is the spread of a desert environment into arid or semiarid regions, resulting primarily from climatic changes, human influence, or both. Climatic factors include periods of temporary but severe drought and long-term climatic changes toward dryness. Human factors include artificial climatic alteration, as through the removal of vegetation (which can lead to unnaturally high erosion), excessive cultivation, and the exhaustion of water supplies. Desertification drains an arid or semiarid land of its life-supporting capabilities. It is characterized by a declining groundwater table, salt accumulation in topsoil and water, a decrease in surface water, increasing erosion, and the disappearance of native vegetation. Current desertification is taking place much faster worldwide than historically.

The causes of desertification are numerous and very different.

- Overgrazing is the major cause of desertification worldwide. Plants of semi-arid areas are adapted to being eaten by sparsely scattered, large, grazing mammals which move in response to the patchy rainfall common to these regions. Early human pastoralists living in semi-arid areas copied this natural system. They moved their small groups of domestic animals in response to food and water availability. Such regular stock movement prevented overgrazing of the fragile plant cover;
- Cultivation of marginal lands, i.e. lands on which there is a high risk of crop failure and a very low economic return;
- Destruction of vegetation in arid regions, often for fuel wood (or deforestation);



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- Poor grazing management after accidental burning of semi-arid vegetation;
- Incorrect irrigation practices in arid areas can cause salinization, (the build up of salts in the soil) which can prevent plant growth;
- The exhaustion of surface-water or groundwater supplies for irrigation, industry, or domestic use;
- Global climate change

When the practices described above coincide with drought, the rate of desertification increases dramatically.

Effects of desertification

Desertification reduces the ability of land to support life, through which it affects wild species, domestic animals, agricultural crops and people. The reduction in plant cover that accompanies desertification leads to accelerated soil erosion by wind and water. As vegetation cover and soil layer are reduced, rain drop impact and run-off increases.

Water is lost off the land instead of soaking into the soil to provide moisture for plants. Even long-lived plants that would normally survive droughts die. A reduction in plant cover also results in a reduction in the quantity of humus and plant nutrients in the soil, and plant production drops further. As protective plant cover disappears, floods become more frequent and more severe. Desertification is self-reinforcing, i.e. once the process has started, conditions are set for continual deterioration.

Another major impact of desertification is biodiversity loss and the loss of productive capacity, for example, by transition from grassland dominated by perennial grasses to one dominated by perennial shrubs. The reduction in biodiversity has resulted not only in losses in the area of agriculture, but has also ripped us off from the benefits biodiversity applies in the areas of science and medicine, industrial materials, ecological services, in leisure, and in cultural, aesthetic and intellectual value.

Consequences of desertification also include reduction in biological productivity, a gradual loss of agricultural potential and resource value, loss of food security, reduced carrying capacity for humans and livestock, increased risks from drought, and in extreme cases, barren lands that are effectively beyond restoration.

Current situation

About one third of the world's land surface is arid or semi-arid. It is predicted that global warming will increase the area of desert climates by 17% in the next century. The area at risk to desertification is thus large and likely to increase.

Worldwide, desertification is making approximately 12 million hectares useless for cultivation every year. This is equal to 10% of the total area of South Africa.



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In the early 1980s it was estimated that, worldwide, 61% of the 3257 million hectares of all productive dry lands (lands where stock are grazed and crops grown, without irrigation) were moderately to very severely desertified. The problem is clearly enormous.

Desertification became well known in the 1930's, when parts of the Great Plains in the United States turned into the "Dust Bowl" as a result of drought and poor practices in farming. During the dust bowl period, millions of people were forced to abandon their farms and livelihoods.

Overgrazing has made the Rio Puerco Basin of central New Mexico one of the most eroded river basins of the western United States and has increased the high sediment content of the river. Overgrazing is also an issue with some regions of South Africa such as the Waterberg Massif, although restoration of native habitat and game has been pursued vigorously since about 1980.

The Desert of Maine is a 40 acre dune of glacial silt near Freeport, Maine. Overgrazing and soil erosion exposed the cap of the dune, revealing the desert as a small patch that continued to grow, overtaking the land.

In Madagascar's central highland plateau, 10% of the entire country has been lost to desertification due to slash and burn agriculture by indigenous peoples. In Africa, if current trends of soil degradation continue, the continent might be able to feed just 25% of its population by 2025, according to UNU's Ghana-based Institute for Natural Resources in Africa.

Desertification is widespread in many areas of the People's Republic of China. The populations of rural areas have increased since 1949 for political reasons as more people have settled there. While there has been an increase in livestock, the land available for grazing has decreased.

By 1973, the drought that began in 1968 in the Sahel of West Africa and the land-use practices there had caused the deaths of more than 100,000 people and 12 million cattle, as well as the disruption of social organizations from villages to the national level.

The chief cause of desertification in the Sahel is slash-and-burn farming practiced by an expanding human population. The Sahara is expanding south at an average rate of 30 miles per year.

Ghana and Nigeria currently experience desertification; in the latter, desertification overtakes about 1,355 square miles (3,510 km²) of land per year. The Central Asian countries, Kazakhstan, Kyrgyzstan, Mongolia, Tajikistan, Turkmenistan, and Uzbekistan, are also affected. More than 80% of Afghanistan's and Pakistan's land could be subject to soil erosion and desertification. In Kazakhstan, nearly half of the cropland has been abandoned since 1980. In Iran, sand storms were said to have buried 124 villages in Sistan and Baluchistan Province in 2002, and they had to be abandoned. In Latin America, Mexico and Brazil are affected by desertification

While desertification has received tremendous publicity by the political and news media, there are still many things that we don't know about the degradation of productive lands and the expansion of deserts. In 1988 Ridley Nelson pointed out in an important scientific paper that the desertification problem and processes are not clearly defined. There is no consensus among researchers as to the specific causes, extent, or degree of desertification. Contrary to many popular reports, desertification is actually a subtle and complex process of deterioration that may often be reversible.



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Measures

In 1977, the United Nations Conference on Desertification (UNCOD) adopted a Plan of Action to Combat Desertification (PACD). Unfortunately, despite this and other efforts, the United Nations Environment Program (UNEP) concluded in 1991 that the problem of land degradation in arid, semi-arid and dry sub-humid areas had intensified, although there were "local examples of success".

As a result, the question of how to tackle desertification was still a major concern for the United Nations Conference on Environment and Development (UNCED), which was held in Rio de Janeiro in 1992. The Conference supported a new, integrated approach to the problem, emphasizing action to promote sustainable development at the community level. It also called on the United Nations General Assembly to establish an Intergovernmental Negotiating Committee (INCD) to prepare, by June 1994, a Convention to Combat Desertification, particularly in Africa. In December 1992, the General Assembly agreed and adopted resolution 47/188, in which, under its auspices, an intergovernmental negotiating committee was established for the elaboration of an international convention to combat desertification in those countries experiencing serious drought and/or desertification, particularly in Africa, with a view to finalizing such a convention by June 1994.

One of the key instruments for the implementation of the Convention are the National Action Plans (NAP) to combat desertification which generally include long-term strategies for combating desertification within the context of the UNCCD. National Action Programs are developed in the framework of a participative approach involving the local communities and they spell out the practical steps and measures to be taken to combat desertification in specific ecosystems. NAPs are strengthened by Action Programs on Sub-regional (SRAP) and Regional (RAP) level.

Besides National Action Plans, Biodiversity Action Plans have been developed, reflecting the importance to combat the great negative effects desertification has on the endangered flora and fauna.

To summarize, the main goal of SOFIMUN's UNEP regarding desertification is to close agreements with as many countries as possible, to protect the existing environment, to combat soil degradation and to aid underdeveloped countries in the struggle against desertification. If this goal is reached, it will be a successful beginning of the long battle against detrimental agricultural practices, food shortages, ethnic conflicts and diminished water supplies, and an unending hope for the future.

World Day to Combat Desertification and Drought - 17 June 2008!



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Suggested Reading and Additional Sources

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- www.unep.org - Official United Nations Environmental Program website
- <http://www.unep.org/desertification/successstories/> - UNEP reports and success stories
- www.unccd.int - United Nations Convention to Combat Desertification;
- <http://www.millenniumassessment.org> - Millennium Ecosystem Assessment website, contains various useful assessment reports
- <http://www.fao.org/landandwater/agll/glasod/glasodmaps.jsp> - National Soil Degradation Maps

Maps are available here for every country's national soil degradation levels

- www.isric.org - International Soil Reference and Information Centre; except useful data on soil degradation the ISRIC Database contain reports of various Sub-regional and Regional action programs
- www.google.com - *Via Google or any other search engine information and reports are available for every country's Biodiversity Action Plan as well as the National Action Plan to combat desertification. *The Global Assessment of Human Induced Soil Degradation (GLASOD), digital database containing information on soil degradation within a map, includes the type, degree, extent, cause and rate of soil degradation.