

Desertification

Desertification is not the advance of deserts, though it can include the encroachment of sand dunes on land. Rather, it is the persistent degradation of dryland ecosystems by human activities and climatic variations. Because of its toll on human well-being and on the environment, desertification ranks among the greatest development challenges of our time.

Desertification occurs when the tree and plant cover that binds the soil is removed. It occurs when trees and bushes are stripped away for fuelwood and timber, or to clear land for cultivation. It occurs when animals eat away grasses and erode topsoil with their hooves. It occurs when intensive farming depletes the nutrients in the soil. Wind and water erosion aggravate the damage, carrying away topsoil and leaving behind a highly infertile mix of dust and sand. It is the combination of these factors that transforms degraded land into desert.

There are many factors that contribute to desertification. Prolonged periods of drought can take a severe toll on the land. Conflict can force people to move into environmentally fragile areas, putting undue pressure on the land. Mining can cause damage. In the coming years, climate



IFAD/G.M.B. Akashi

change will accelerate the rate of desertification in some areas, such as the drier areas of Latin America.

The effects of desertification can be devastating. Desertification reduces the land's resilience to natural variations in climate. It disrupts the natural cycle of water and nutrients. It intensifies strong winds and wildfires. The effects of dust storms and the sedimentation of water bodies can be felt thousands of kilometres away from where the problems originated.

The cost of desertification is high, and not just in economic terms. Desertification is a threat to biodiversity. It can lead to prolonged episodes of famine in countries that are already impoverished and cannot sustain large agricultural losses. Poor rural people who depend on the land for survival are often forced to migrate or face starvation.

Desertification not only means hunger and death in the developing world, it also

increases threats to global security for everyone. War, social disorder, political instability and migration can all result from scarce resources. For millions of people, halting desertification is a matter of life and death.

Desertification is not always inevitable. Human factors, such as overgrazing and clear-cutting of land, can be controlled by improving agricultural and grazing practices. Other factors, such as rising temperatures, can be predicted and dealt with proactively. Degraded land can sometimes be rehabilitated and its fertility restored. In many cases, the best methods of rehabilitating land involve using traditional or indigenous knowledge and land management techniques. But rehabilitation efforts can fail or eventually have a negative impact on ecosystems, human well-being and poverty reduction. It is less costly, and less risky, to limit the damage in the first place.



IFAD/D. Rose

IFAD's experience with desertification

At IFAD we are confronted every day by the human cost of desertification. We work with subsistence farmers, nomadic herders, day labourers and others whose survival depends on ecologically fragile or marginal lands. Through our work over the past 30 years, it has become clear that to eliminate rural poverty we must also address the issue of how land and natural resources are managed.

IFAD's very existence has its roots in the fight against desertification. The decision to create IFAD was taken in 1974 in the wake of the great droughts and famines that had struck Africa in the previous six years.

Combating desertification, including land degradation, is central to IFAD's work. It is reflected in our investment programmes, grants and policy initiatives. Between 1999 and 2005 alone, IFAD committed about US\$2 billion to programmes and projects related to the objectives of the United Nations Convention to Combat Desertification (UNCCD).

Women are often at the front line in fighting desertification or managing land degradation because very often, in many parts of the world, women are the farmers. They are also often the ones who are responsible for getting fuelwood and water and for tending the fields. As a result, IFAD pays particular attention to the role of women in dryland management.

Today, approximately 70 per cent of IFAD-supported programmes and projects are in ecologically fragile environments that are prone to severe environmental degradation. All of our programmes and projects are screened for potential adverse and positive effects on the environment, natural resources and local populations.

IFAD works with a number of partners to fight desertification.

In 2001, IFAD became an executing agency of the Global Environment Facility

(GEF). This was in recognition of its proven expertise in rural sustainable development, integrated natural resource management, sustainable land management and its role in implementing the UNCCD. The partnership with the GEF has rapidly expanded and IFAD has been granted access to other GEF focal areas, such as biodiversity, climate change and sustainable forest management.

IFAD's Environment and Climate Division promotes environmental programmes and projects, including those on climate change adaptation and mitigation. The division also shares information and new findings on environmental matters relevant to IFAD's work. It participates in technical and policy meetings organized by the secretariats of the United Nations Framework Convention on Climate Change and the UNCCD.

IFAD also works closely with the Global Mechanism, a subsidiary of the UNCCD, which helps countries find resources to combat desertification. The Global Mechanism has been hosted at IFAD since 1997, in recognition of IFAD's role in rural development, agriculture and sustainable land management.

Similarly, IFAD hosts the secretariat of the International Land Coalition, a global alliance of organizations dedicated to working with poor rural people to increase their secure access to natural resources, particularly land.

FACTS

- Land degradation is often a cause and a consequence of rural poverty. Desertification can cause poverty, and poverty can cause further desertification.
- The livelihoods of nearly one billion people in some 100 countries are threatened by desertification.
- Desertification contributes to internal displacement and international migration of people.
- About 25 per cent of the Earth's land, or 3.6 billion hectares, is desertified.
- Every year about 12 million hectares worldwide are lost to land degradation, and the rate is increasing.
- More than 1 billion people in China could face reduced freshwater availability because of climate change and population growth.
- Every year desertification contributes to an estimated US\$42 billion in lost incomes.
- By the 2050s, 50 per cent of agricultural land in Latin America will be subject to desertification.

“Dealing effectively with desertification will lead to a reduction in global poverty.”

Ecosystems and Human Well-Being, a report of the Millennium Ecosystem Assessment

The grass is greener: rehabilitating the Syrian Badia

The Syrian steppe or 'Badia' covers 10 million hectares of the central and eastern Syrian Arab Republic. Characterized by poor soils and low rainfall, it is suitable only as grazing land for small ruminants, equines and camels. Bedouin communities herd about 12 million animals here. After years of severe drought and intensive grazing, the Badia has become badly degraded.

An IFAD-supported project has restored vegetation in about one third of the Badia rangelands. The key to project success has been involving local people in decision-making, encouraging them to take full ownership of the rehabilitation and management of the rangelands.

Bedouin herders, with their extensive local knowledge, worked with project experts to draft and implement management plans, determining how many animals should graze in a given area at a given time and taking seasonal conditions into account. The project used a variety of approaches – films, meetings with communities, field days and workshops – to bring communities on board and communicate the new rangeland management techniques. Once communities had agreed to collaborate, the project worked with them to establish boundaries and select sites suitable for rehabilitation.

The project took three approaches to rehabilitation: resting, reseeding and planting. Where possible the land was simply rested for up to two years. Native

plants that had long since disappeared returned, and the full range of vegetative cover has come back to life.

Where degradation was too advanced, the project introduced reseeding, using native rangeland forage plants or plants acclimatized to local conditions. Soils were first furrowed to encourage rainwater infiltration. The project's seed production units now produce 160 tons of seed per year.

More than 930,000 hectares of the Badia have been regenerated by resting, a further 225,000 have been reseeded, and about 94,000 hectares have been planted with nursery shrubs, each plant surrounded by a small handmade soil bank to protect the plant and collect rain. In this way, the shrubs are watered just once, when they are planted, and afterwards rely on this

simple irrigation method. Regular cropping by livestock keeps the shrubs from becoming woody and prolongs their life. Eventually, they reseed themselves.

Breeders have seen the average productivity of the land increase as much as tenfold, from 50 to 500 feed units per hectare. Rehabilitation has not only provided fodder, it has led to a healthier ecosystem: birds, insects and animals are returning to the area.



IFAD/S. Mergan

Voices from the desert: living with desertification

Diramo lives in the village of Siminto in Ethiopia. She grew up as a herder, but now the abundant grasslands that fed the cattle are gone and the people are no longer able to migrate in search of pasture.

"During my childhood, the grass was the height of a person," Diramo says. "Now, the shortage of water and grass has led to the emaciation of cattle; we have nowhere to go. Our life is tied to our cattle. When the cattle are fat, we get fat; when they are emaciated, we too lose weight."

Chuqulisa from Ethiopia is divorced and supports her six children by selling firewood. "It is during acute droughts that we enter into conflict with other clans,"

she says. "It is during this time that the Boran wander with their animals in search of pasture and water. A group called the Digodi moves around with the same purpose. The two groups clash, [both] claiming the land is theirs. The conflict is so serious and it claims many lives."

More stories from the Desert Voices project by Panos London, funded by an IFAD grant, can be found on the Panos website: www.panos.org.uk/?lid=435

Desertification is land degradation in arid, semi-arid and dry subhumid lands.

Land degradation is persistent reduction of biological and economic productivity.

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LINKS

IFAD
www.ifad.org

IFAD and desertification
www.ruralpovertyportal.org/web/guest/topic/home/tags/desertification

Global Environment Facility
www.thegef.org

Global Mechanism
www.gm-unccd.org

Intergovernmental Panel on Climate Change
www.ipcc.ch

TerrAfrica
www.terrafrica.org/

United Nations Convention to Combat Desertification
www.unccd.int

United Nations Environment Programme
www.unep.org

European Space Agency:
Observing the Earth
Tracking desertification from space
www.esa.int/esaEO/SEMPMCWJD1E_index_0.html

Scientific Facts on Desertification
www.greenfacts.org/en/desertification/index.htm

Where does desertification occur?

No continent, except Antarctica, is immune from desertification. The problem is particularly acute in Africa, which has 37 per cent of the world's arid zones. About 66 per cent of its land is either desert or drylands. The impact is also severe in Asia, which holds 33 per cent of the world's arid zones.

Degraded areas include the sand dunes of the Syrian Arab Republic, the steep mountain slopes of Nepal, the deserts of Australia and the deforested highlands of the Lao People's Democratic Republic. In the Americas there are deserts that stretch from southern Ecuador along the entire Peruvian shoreline and into northern Chile. Italy, Portugal, Spain and Turkey all experience desertification.

The effects of desertification are often felt far beyond the regions where it is occurring. Airborne particles affect cloud formation and rainfall patterns. Dust storms from the Gobi Desert affect visibility in Beijing. Dust from the Sahara has been implicated in respiratory problems in North America and has affected Caribbean reefs.

Tree regeneration in Niger

Almost 270,000 people live in the Aguié Department of Niger. For many years, poor people in the area cut down trees for fuel, building and other uses. With each year's rains, tiny tree shoots would emerge from the soil, a reminder of the thousands of stumps and roots lying just below the surface. Animals grazed on the shoots and farmers cleared them to make way for crops. But without the trees, the land became unproductive and the crops failed.

IFAD recognized that the only way to improve food security and incomes in the region was to come up with a programme that would allow the trees to grow. In 2000, an assisted natural regeneration programme was implemented on more than 100,000 hectares of land. IFAD has been a major contributor to the programme.

The programme has been a resounding success. An evaluation found there were about 50 new trees per hectare in the programme area. Vast zones of the 100,000-hectare area are now protected from sandstorm damage. Reforestation rates were lower in non-programme areas. Assisted natural regeneration has also contributed to restoring soil fertility. The benefits of tree regeneration have been so dramatic that farmers not directly involved in the programme are also following the practice.

Greening a grey land

Naelson Medeiros was born about 30 years ago in Sombras Grandes, a small community in the vast 'grey land' of the Caatigna forest in north-eastern Brazil, which gets its nickname from the monochrome colours of the landscape, a result of the annual nine-month drought when there is precious little green to be seen. Medeiros remembers the difficult times in the harsh landscape, when survival seemed almost impossible.

For families living in the community, firewood collected for charcoal production and temporary farming were the only sources of income. "Firewood was becoming scarce," says Medeiros. "Stones were all we had, and you could see people breaking them to sell the gravel to building companies." The number of people migrating to the cities in search of work increased.

Working with the federal government, an IFAD-funded project introduced irrigation schemes and technologies to ensure efficient provision of water. Today, the community has been transformed into an oasis. Water tanks capable of storing up to 16,000 litres and filled by only 200 millimetres of precipitation are now supplying good-quality water to families. Small underground dams and a range of different wells have allowed rainwater to be stored under the soil without flooding the best land for planting.

Local families are now growing enough vegetables to feed themselves and earn a better living. "Today we see our land as full of potential," says Medeiros. "We are happy to see that it is worth investing and staying here. We do not need to migrate anymore."



IFAD is an international financial institution and a specialized United Nations agency dedicated to eradicating poverty and hunger in rural areas of developing countries.

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