

Desertification



Enabling poor rural people
to overcome poverty

Desertification has been called the greatest environmental challenge of our times. It 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 climactic variations.

Desertification occurs when the tree and plant cover that binds the soil is removed. It occurs when trees and bushes are stripped away for firewood 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.

There are many causes of desertification. Prolonged periods of drought can take a severe toll on the land. Conflict can force people to move into environmentally fragile areas, putting the land under undue pressure. Mining can cause damage. Climate change is expected to accelerate the rate of desertification in coming years.

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 and streams 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 starve.

Desertification not only means hunger and death in the developing world, it also increases the risks to global security for everyone. War, social disorder, political instability and migration all result from desertification. Experts say the Sudan, for example, is unlikely to see a lasting peace unless its widespread land degradation is addressed. For millions of people, halting desertification is a matter of life and death.

People who live in drylands lag far behind the rest of the world in human well-being and development indicators. They suffer from the poorest economic conditions and have the highest average infant mortality rates.

Desertification is not always inevitable. Human factors, such as overgrazing and clear-cutting land, can be controlled by improving agricultural and grazing practices. Other factors, such as rising temperatures, can be predicted and dealt with proactively. Where the damage is already done, land can sometimes be rehabilitated and its fertility restored. But at times 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's commitment to combating 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 upon fragile 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 is central to IFAD's work. It is reflected in our investment programmes, grants and policy initiatives. Between 1999 and 2005 IFAD committed about US\$2 billion to programmes and projects related to the objectives of the United Nations Convention to Combat Desertification (UNCCD) and arranged nearly US\$2 billion in cofinancing.

Our commitment to investing in areas prone to land degradation predates the establishment of the UNCCD. In response to severe droughts in Africa in 1986, IFAD launched the Special Programme for Sub-Saharan African Countries Affected by Drought and Desertification. In the ten years that followed, 47 programmes and projects worth more than USD\$750 million were initiated in 24 countries.

At the end of 1995 the programme was absorbed into IFAD's regular work. At the same time, IFAD began a process of evaluating its experience in sub-Saharan Africa. Those early lessons have helped strengthen our ongoing response to the challenges of poverty eradication and sustainable land management around the world.

Women are often at the front line of 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 fuel 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. These include the Global Mechanism (GM), a subsidiary of the UNCCD, which helps countries find resources to combat desertification. The GM 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.

IFAD is an executing agency of the Global Environment Facility (GEF), an independent financial organization established in 1991 to provide grants to developing countries for projects that have global environmental benefit and contribute to sustainable livelihoods. This relationship strengthens IFAD's ability to link projects addressing land degradation to poverty reduction.

FACTS

- Land degradation is often a cause and a consequence of rural poverty. Desertification can cause poverty, and poverty can cause further desertification.
- About 2 billion people are potential victims of the effects of desertification.
- Desertification contributes to internal displacement and international migration of people. If the rate of desertification remains unchecked, 50 million people will be displaced over the next ten years.
- Forty per cent of the earth's land, or 5.2 billion hectares, is threatened by desertification.
- Every year about 12 million hectares worldwide are lost to land degradation, and the rate is increasing.
- Ninety per cent of dryland populations live in developing countries.
- By 2025 more than 2.8 billion people in 48 countries are expected to face water stress or scarcity.
- Every year desertification contributes to an estimated US\$42 billion in lost incomes.

Sources: United Nations Convention to Combat Desertification, United Nations Environment Programme, United Nations University, Millennium Ecosystem Assessment

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

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



Fruit trees grow in former wasteland

In the south of Jordan, where global warming has exacerbated water scarcity, IFAD-supported soil and water conservation activities have had impressive results.

“Before the project, this land was waste – barren and full of stones and thorny shrubs, nothing else,” says Maliha Maita, who owns 25 *dunums* of land (about 2.5 hectares) in Raba village near Karak.

The project helped poor farmers like Maliha build stone walls and terraces to stop erosion and water run-off. They built more than 1,000 cisterns to collect winter rainfall to irrigate their farms during the drier seasons. These cisterns use gravity to drive water through the farm irrigation systems instead of using fuel-powered water pumps.

The project’s engineers planned where Maliha should build stone terraces and where the water cisterns should be excavated. Maliha received credit to dig three cisterns, and additional small loans for planting trees. Now she is able to collect rainwater for her farm in the water cisterns. Precious topsoil and water remain trapped in the strategically built terraces. Her land has become more fertile, and she has been able to plant olive and pistachio trees, grapes and barley.

As a result of the project, household incomes for the 4,500 farming families (about 42,300 people) involved have risen by 12 per cent and family nutrition has improved. The second phase, which began in 2005, is directly helping some 22,300 households. It promotes water harvesting techniques, including *wadi* bank protection (stone barriers), instead of relying on groundwater for irrigation. It also finances the construction of off-farm water storage facilities. It has helped establish associations of water users and supports research on using treated domestic wastewater to irrigate trees. Initiatives such as this have helped Jordan diversify its agriculture and increase the replenishment of groundwater.



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.”

These powerful stories are part of *The Desert Voices* project by Panos London that was funded by an IFAD grant to mark the International Year of Deserts and Desertification in 2006. More stories can be found on the Panos website: <http://www.panos.org.uk/global/desertvoices.asp>

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

Land degradation is persistent reduction of biological and economic productivity.

CONTACT

Sheila Mwanundu
Senior Technical Adviser
Environment and Natural Resource
Management
Technical Advisory Division
IFAD
Via del Serafico, 107
00142 Rome, Italy
Tel: +39 06 5459 2031
Fax: +39 06 5459 3031
E-mail: s.mwanundu@ifad.org

LINKS

IFAD
www.ifad.org

IFAD and Desertification
<http://www.ruralpovertyportal.org/english/topics/desertification/ifad/index.htm>

Rural Poverty and Desertification
<http://www.ruralpovertyportal.org/english/topics/desertification/index.htm>

Consultative Group on International
Agricultural Research
<http://www.cgiar.org/>

European Space Agency:
Observing the Earth
http://www.esa.int/esaEO/SEMPMCWJD1E_index_0.html

Global Environment Facility
<http://www.gefweb.org/>

Global Mechanism
www.gm-unccd.org

Intergovernmental Panel on Climate Change
<http://www.ipcc.ch>

Scientific Facts on Desertification
<http://www.greenfacts.org/en/desertification/index.htm>

TerrAfrica
<http://www.terrafrica.org/>

United Nations Convention
to Combat Desertification
www.unccd.int

United Nations Environment Programme
www.unep.org

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. In Europe, Italy, Portugal and Turkey all suffer from 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 50 new trees per hectare in the programme area. Vast zones of the 100,000 hectare area are now protected from damage from sandstorms. Reforestation rates were lower in non-programme areas. Assisted natural regeneration has also contributed to restoring soil fertility. The benefits of encouraging tree regeneration have been so dramatic that farmers not directly involved in the programme are also following the practice.



Safe from the sand dunes

The 20,600 farming families in Yemen's Tihama plain can attest to the importance of halting desertification. The arid plain is one of Yemen's most important agricultural areas. In the early 1990s, wind erosion, sand dune encroachment and pressure on groundwater threatened the livelihoods of thousands of poor rural people and risked undermining the positive impact of previous agricultural work in the area.

In 1993, IFAD approved a loan to combat sand dune encroachment on farmland and to increase water use efficiency. The project established sand dune stabilization belts, as well as on-farm 'shelter belts' – trees or shrubs that act as wind barriers. It also supported the rehabilitation and development of irrigation infrastructure and access roads. Village communities now manage the shelter belts and derive income from the sale of wood and other products.

The benefits of protection are clearly visible: the 47 project communities still exist. Others, not protected from the dunes, have been buried under seas of sand.



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

Via del Serafico 107, 00142 Rome, Italy
Tel.: +39 06 54591
Fax: +39 06 5043463
E-mail: ifad@ifad.org
www.ifad.org, www.ruralpovertyportal.org