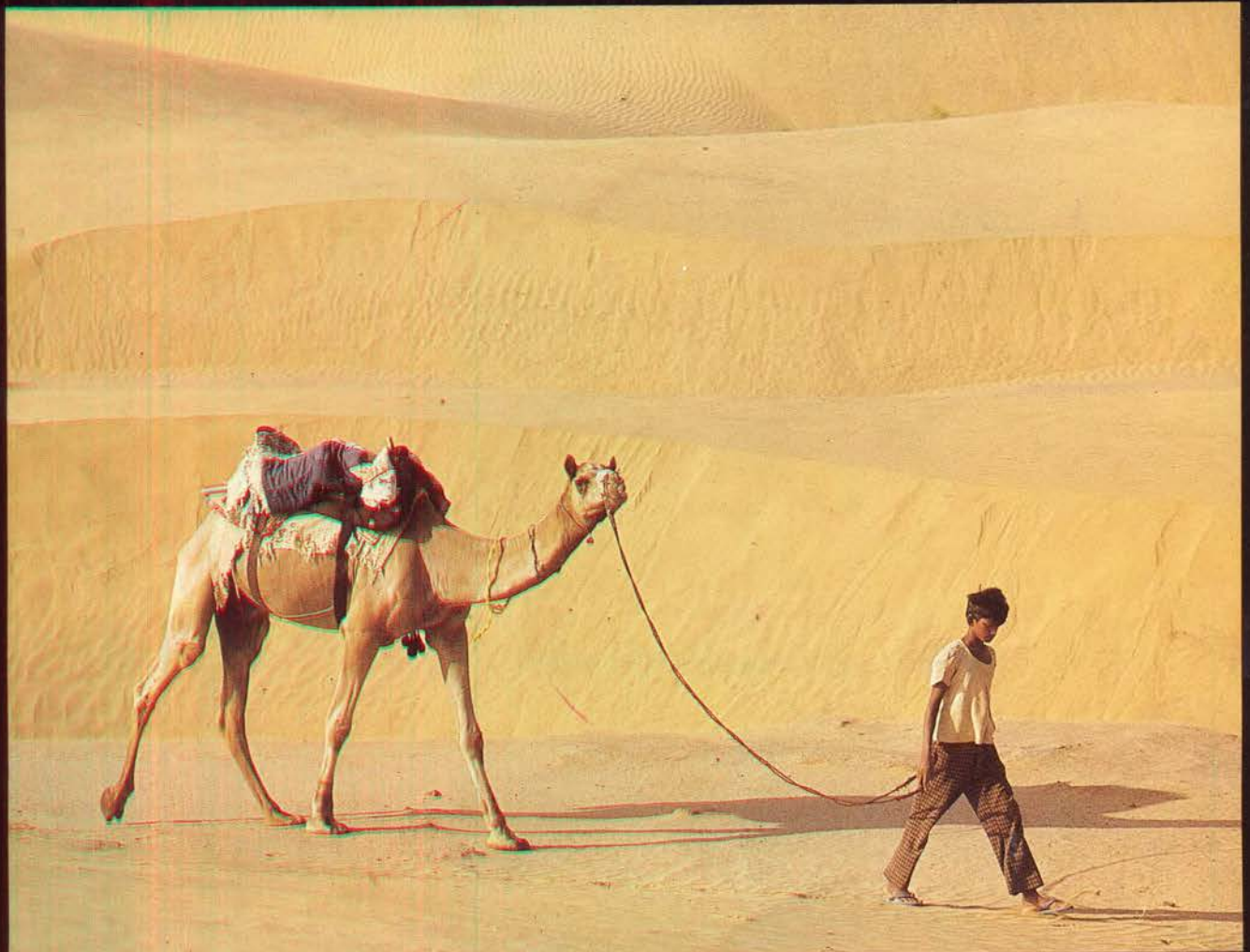


# Voices from the desert



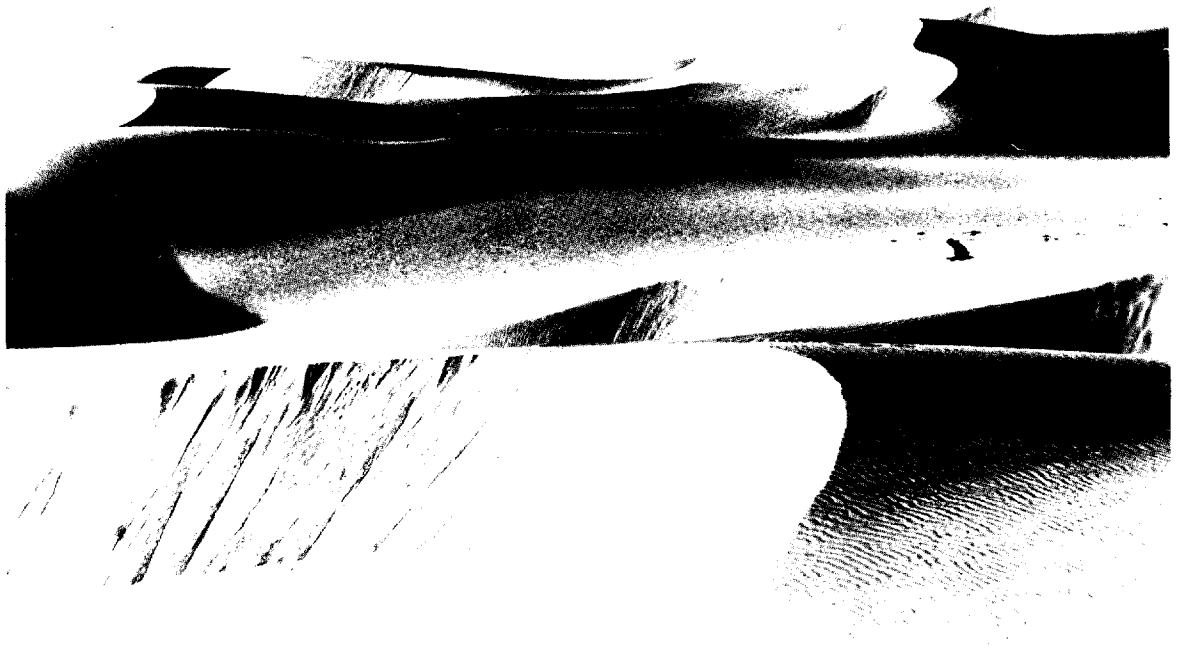
© United Nations Environment Programme, 1985.

Published by the United Nations Environment  
Programme, P.O.Box 30552, Nairobi, Kenya. Printed  
in Bangkok, Thailand.

Text: Janet Bruhjell  
Photographs: Jill Paul  
Design: Enid Ngaira

Cover: Boy and camel walk the desert, UNEP.

ISBN 92 807 1105 9



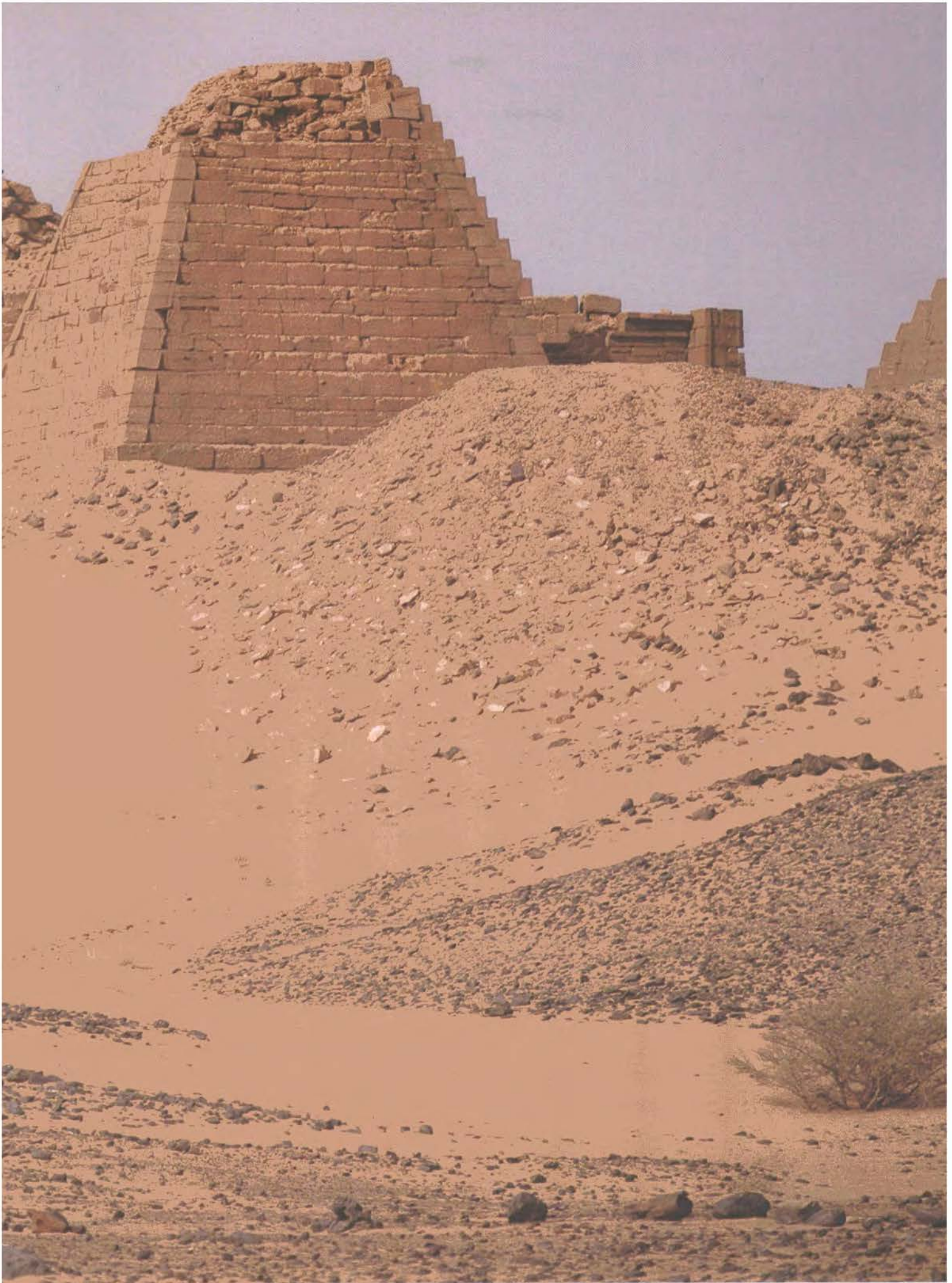
Kordofan province of the Sudan, Mark Edwards, Earthscan.

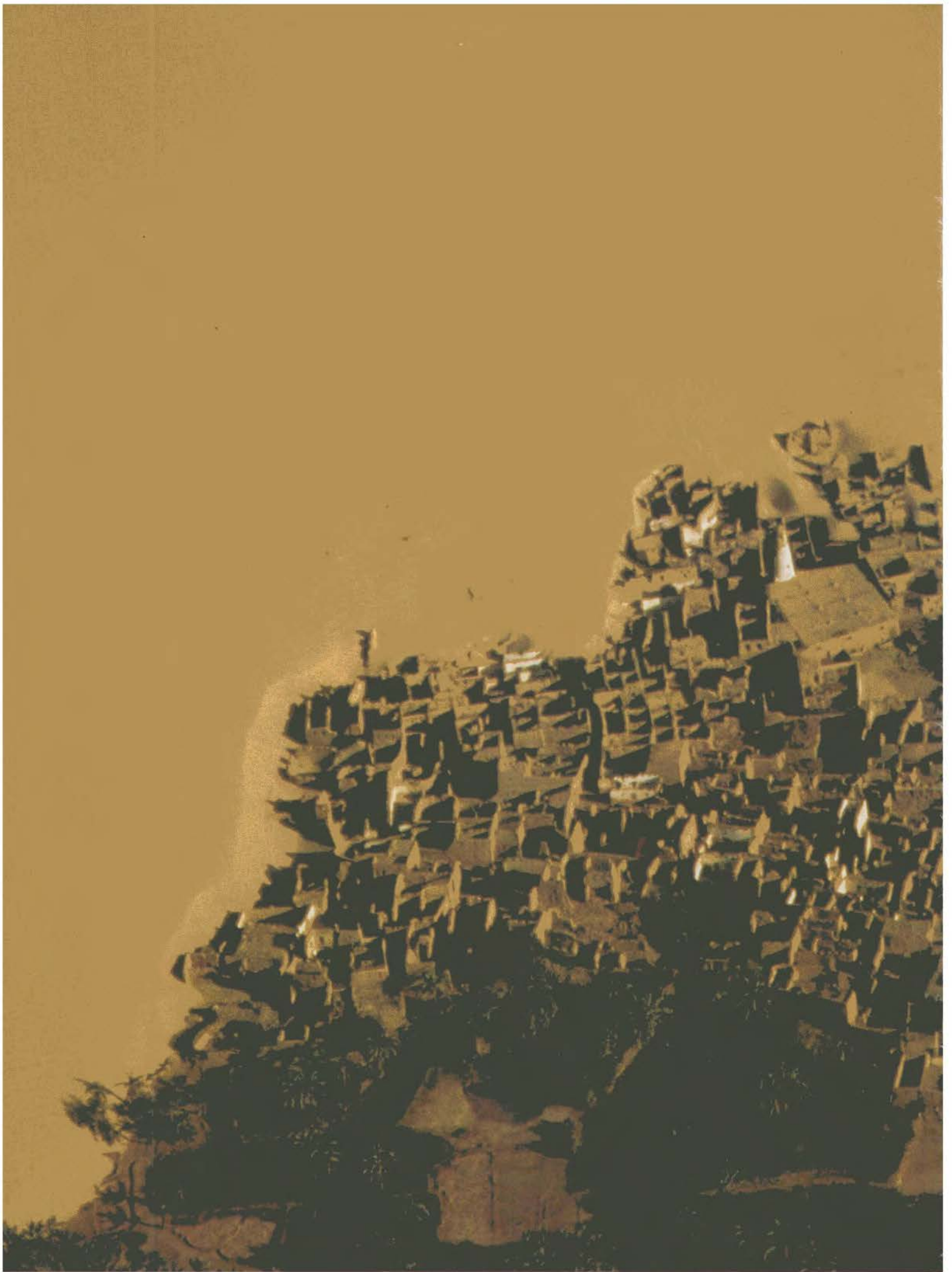
I met a traveller from an antique land  
Who said: Two vast and trunkless legs of stone  
Stand in the desert ... Near them, on the sand,  
Half sunk, a shattered visage lies, whose frown,  
And wrinkled lip, and sneer of cold command,  
Tell that its sculptor well those passions read  
Which yet survive, stamped on these lifeless things,  
The hand that mocked them, and the heart that fed:  
And on the pedestal these words appear:  
My name is Ozymandias, king of kings:  
Look on my works, ye Mighty, and despair.  
Nothing beside remains. Round the decay  
Of that colossal wreck, boundless and bare  
The lone and level sands stretch far away.

Ozymandias, Percy Bysshe Shelley  
1792-1822



Ancient pyramids in Sudan, Duncan Willetts, Camerapix.



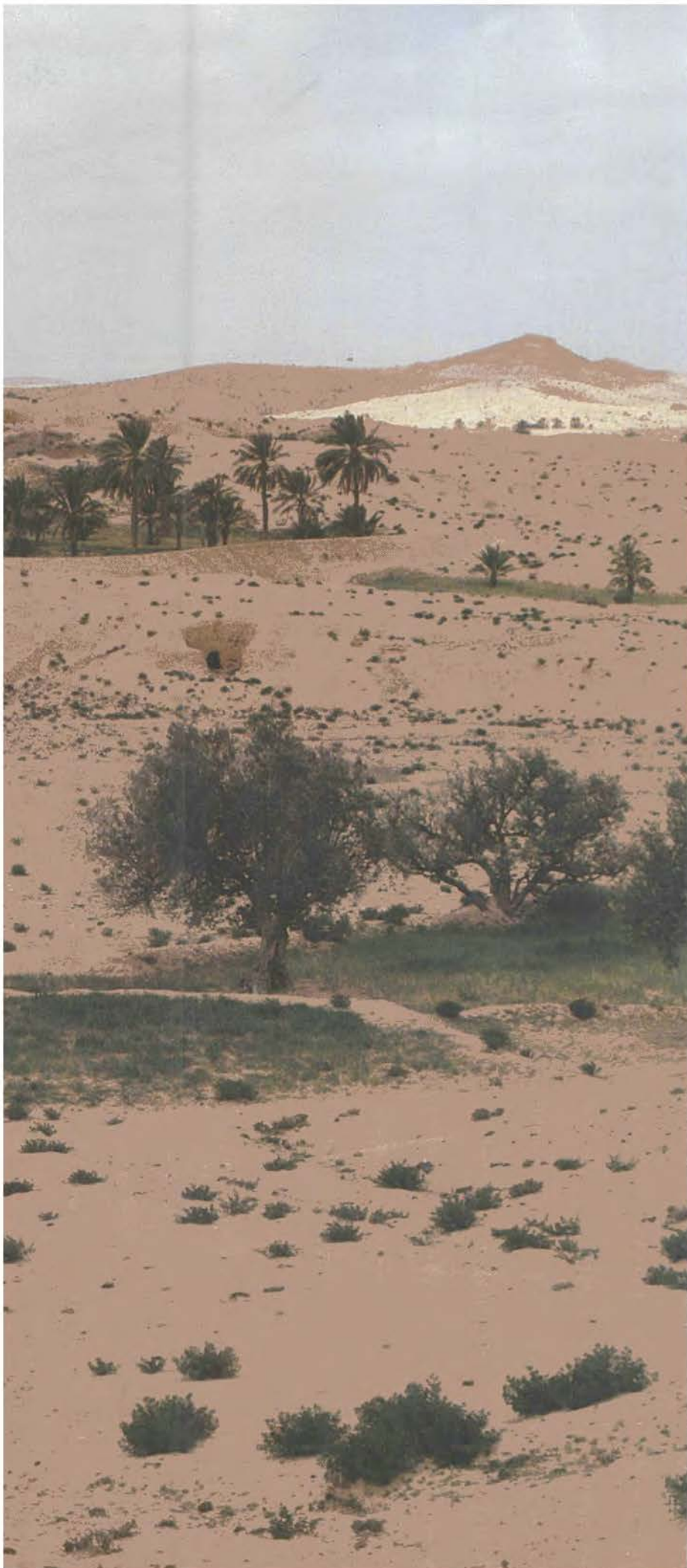




*Desertification manifests itself in  
famine*

**A**ncient civilizations that once reigned over green and fertile lands are now ruins shrouded in shifting sands. These haunting silhouettes of tired stone serve as a reminder of a threat which, if not impeded, moves swiftly to smother all forms of struggling life in its path. Now another civilization, our own, is falling prey to this terror. It manifests itself in famines and the rapid depletion of precious agricultural land. It is the underlying problem, the little-known cause. It is **DESERTIFICATION.**

Shifting sands, Egypt.  
Georg Gerster © National Geographic Society.



Threadbare in patches from constant wear, the fabric of nutrient-rich topsoil which cloaks our earth, the layer which allows vegetation to thrive and animal life to subsist, is being worn out.

As the interwoven roots of vegetation are loosened from the binding soil by the gripping claws of wind and water erosion, the ensuing sand undermines fragile life-support systems. Over time, the once healthy and productive soils are transformed into large patches of unproductive sand or are eroded away, exposing bedrock. By then desertification has succeeded in unravelling the vital ecosystem of the earth's protective overcoat of soil.

Desertification spreads in patches, UNEP





Gully eroded hillside in Ethiopia, Charles Stewart, UNEP.

Desertification, in simple terms, is a biologically degrading process which rapes the earth of its natural resources. It is caused by people taking more from the land than is given back. Usually, desertification progresses from patches that grow and eventually coalesce until huge areas take on desert-like characteristics.

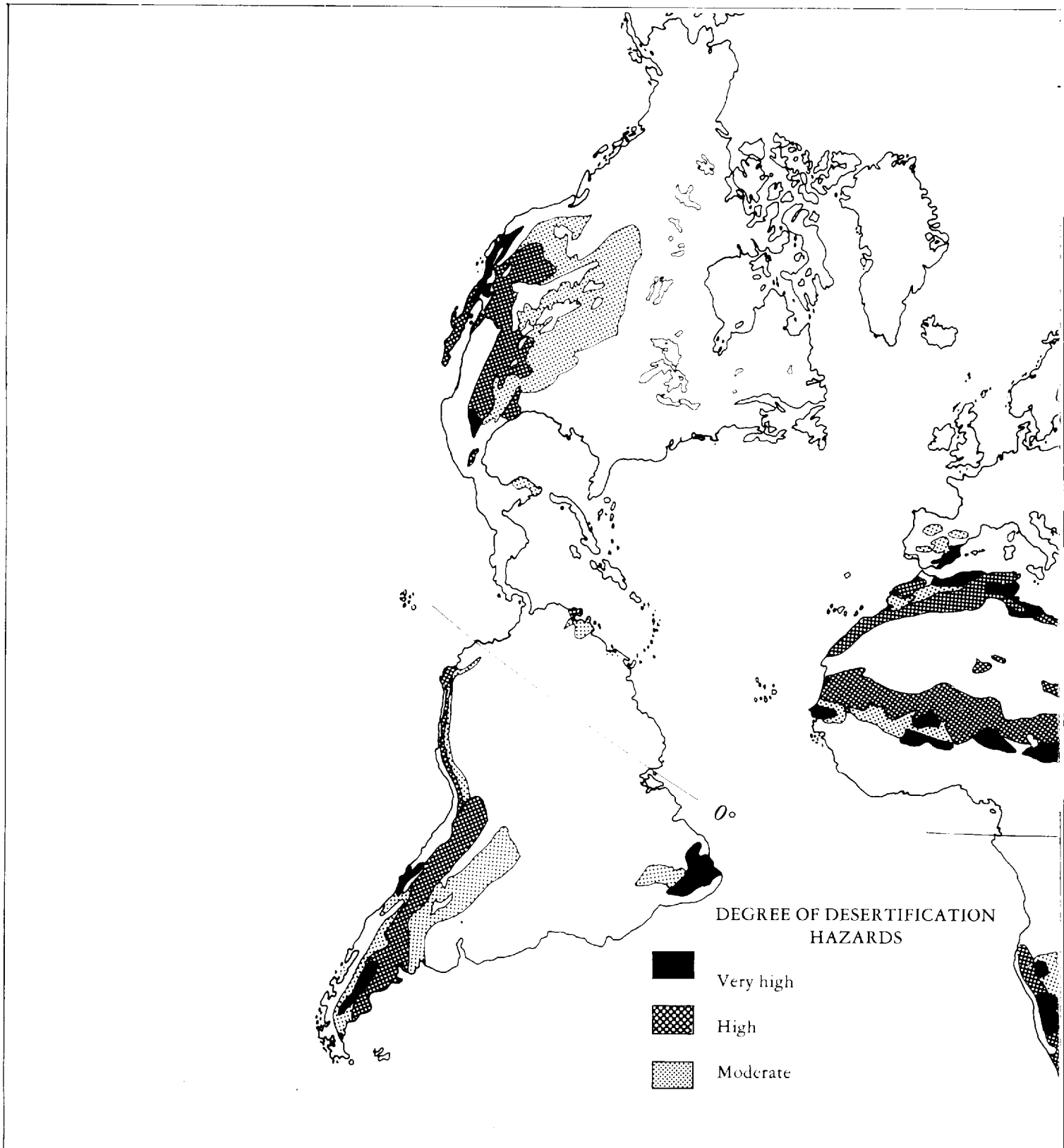
Desertification is not a natural phenomenon. Slowly, sometimes over aeons, deserts can form. But desertification

is different; it is human handiwork and often takes only a few years. Neither climate nor the other vagaries of nature can fully explain the formation of desertified land because desertification is a condition that people create by degrading the land. The earth's natural desert areas are not really the problem, unless the fragile natural barriers separating them from greener areas are destroyed. Then the deserts can advance, sometimes creeping over inhabited areas in the form of mammoth sand dunes.

Desertification results in the loss of productive agricultural land and valuable genetic resources. It increases atmospheric dust and disrupts the earth's natural water-

recycling processes. Desertification can be a factor in causing social and political breakdowns that ultimately affect the global community. When this happens, desert-

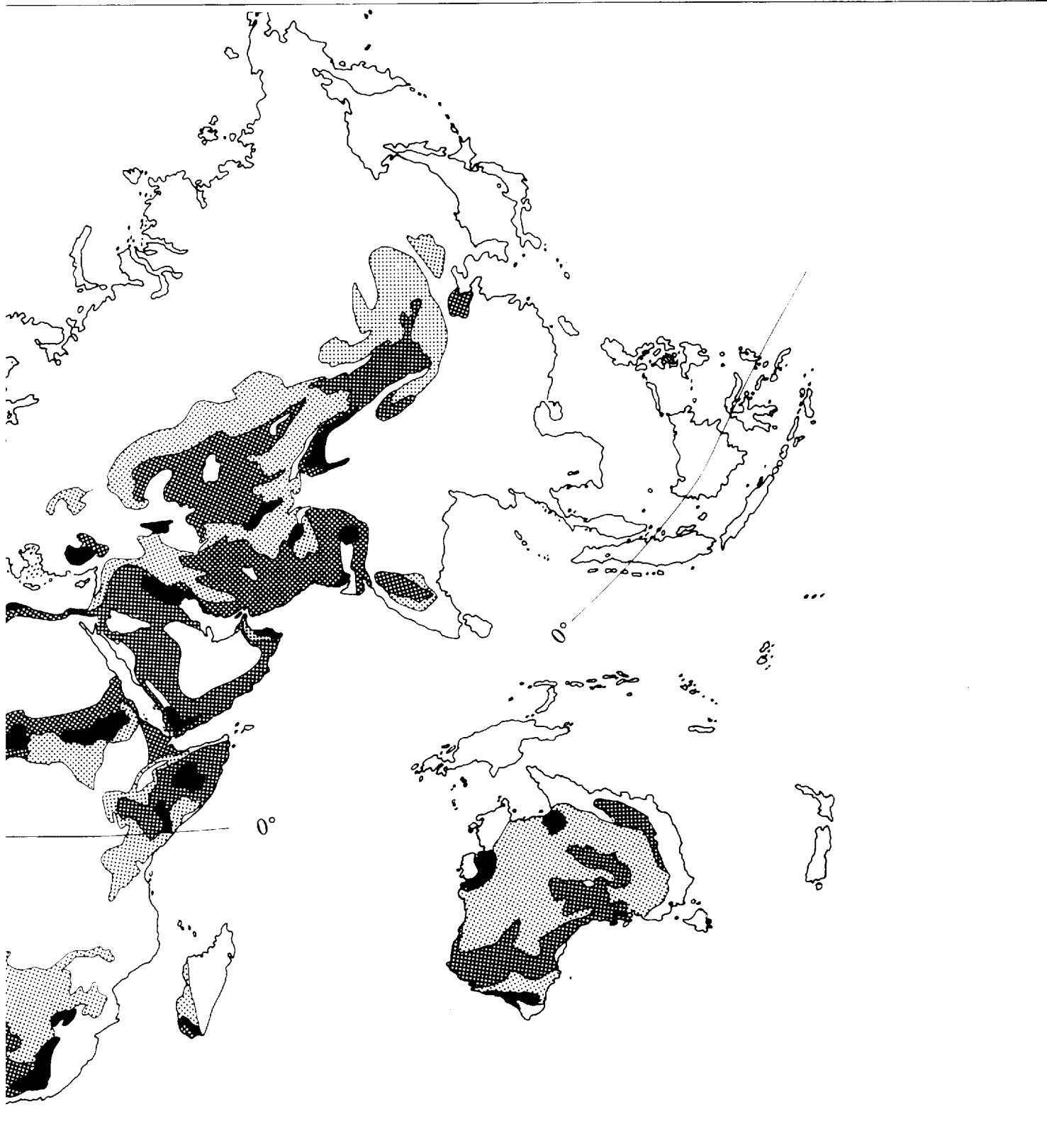
*The arid and semi-arid areas of the world support 850 million people, 80 million*



ification is no longer a localized problem. It is a threat to international stability. One third of the earth's surface is arid or semi-arid and supports some 850 million

people, more than 80 million of whom are directly affected by desertification. But how and why do people bring the disaster of desertification upon themselves?

*of whom are directly affected by desertification.*





Bororo nomads water their cattle in eastern Niger, FAO.

Unknown to the people of many cultures, some of their land use practices are no longer compatible with the dwindling land resources on which their burgeoning populations of people and livestock depend.

For instance, where there was once a symbiotic relationship between pastoralists and rain-fed crop farmers, there is now competition to secure the remaining arable land. There used to be a rotational system between the two land users; cattle would graze on land that was left fallow during the dry season, allowing the soil to repair itself. With the help of natural fertilizers, the land

was again ready for farming by the next wet season. But with more people and more animals, less land has been left fallow and the natural cycle of soil regeneration has been disrupted.

Nomadic pastoralists are the main exploiters of arid lands. In many areas, increased populations of nomads with ever-larger herds have far exceeded the land's carrying capacity, causing severe overgrazing. Available pasture areas are decreasing because of expanding rain-fed cropping and because degraded land is being abandoned.

*People cause  
desertification*

**W**ells and boreholes, created to facilitate life in the drylands, have encouraged herders and their animals to hover around them for long periods of time. This also contributes to overgrazing, because instead of moving constantly and allowing vegetation to regenerate, the soil around the waterholes is frequently stripped bare and trampled hard, sealing it against the healing rains. Consequently, in times of drought, animals rarely die of thirst, but rather of hunger.



Goats finding feed, UNEP.

Water-hole stripped bare, UNEP.



## *Overcultivation leads to desertification*

**G**rowing farming communities desperately try to meet the demands of more hungry mouths as traditional rain-fed cropping systems break down. A demand for foreign exchange in failing economies has led to an increase in cash crop cultivation, an expansion of irrigated cropping and a shortening of fallow periods. To increase the area under cultivation, farmers have ventured out onto marginal lands that were once preserved solely for livestock grazing. This overcultivation, along with the crowded conditions in the pasturelands, causes crop and livestock productivity to fall, and soil erosion to increase. Overcultivation leads to desertification.

Many of these people depend on forests to provide them with shelter materials and fuel for cooking and heating. It is not uncommon in many parts of the developing world to see women trekking home burdened with a bundle of cut wood on their backs. It is estimated that over 60 per cent of the developing world's energy needs are met by fuelwood. The greatest amount of forest area, however, disappears from the routine clearing of land for agriculture and industry.

Cultivating marginal land, Charles Stewart, UNEP.





Harvesting Barbados sugar cane. E. Rice, WHO.

Women carrying wood in Ethiopia, UNEP.



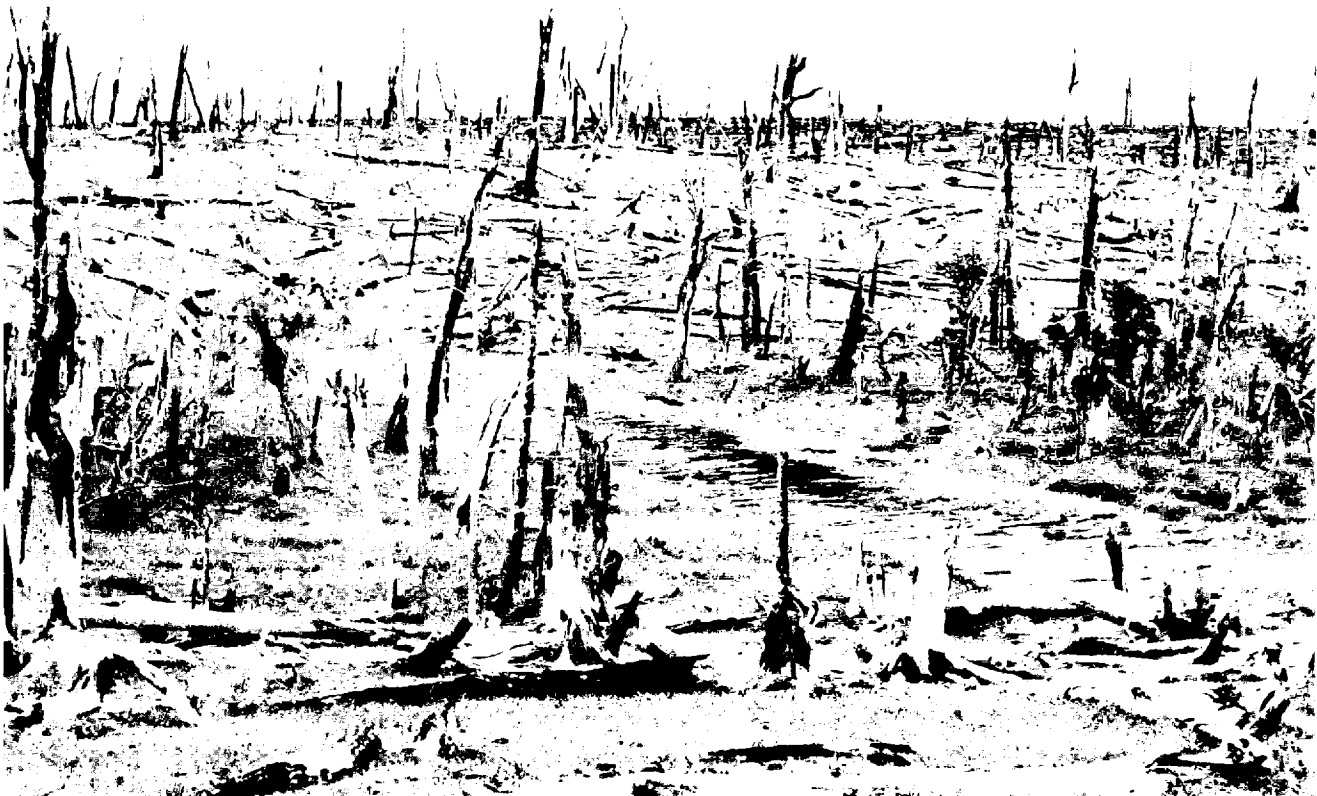


Slash and burn farming in Burkino Faso, Archives of the Royal Tropical Institute, Amsterdam.

The biggest scourge is slash and burn agriculture which quickly denudes large areas of forest. This method provides only a few years of productive cultivation because forest soils are not very fertile and afterwards land is typically abandoned. For those in quest of productive land it is only a

short-term solution and the end result is often desertification. People must realize that forests play an integral part in keeping desertification under control by binding the soil and acting as wind breakers to prevent erosion. It is a simple fact that when the trees disappear, deserts will come.

Forests destroyed in Chile, Aubert de la Rue, UNESCO.







Salinized soil in the Soviet Union, Steve Jackson, UNEP.

Irrigation systems, a cornerstone in many development plans, are lauded for their ability to increase agricultural productivity, especially for those who cultivate in places with erratic rainfall. But they are only a boon when they are properly designed and managed. All too often, irrigation systems wreak environmental havoc in desertification-prone areas when water from irrigated lands has nowhere to drain off. Under these conditions waterlogging occurs, and the salts are not leached away. The end result is that the soil becomes salinized or alkalinized with formation of a salt crust on the surface. Dependable drainage is expensive, but if the investment

is not made at the onset, some farmers can end up with wastelands laden with water, wet deserts.

When wells are used as a source of irrigation water, over-use can cause the surrounding water tables to fall. Persistent use can make wells go dry and the land has to be abandoned. In some cases, underground aquifers, that have taken thousands of years to develop, are being depleted so quickly that it will take thousands more years to replenish them. Soils surrounding mismanaged irrigation systems are in danger of becoming damaged and unproductive, and can usher in the waiting deserts.

For the many people who inhabit the arid fringe around deserts and the semi-arid lands adjoining them, the loss of productive and healthy topsoil to sand is usually a harbinger to the end of a way of life.

For subsistence farmers it means that after toiling under the hot sun their spades will sow nothing but sand, and their food supply will cease because their land is finished. They will have to abandon their farms and move on to find productive soil elsewhere.

For desert nomads it means their cattle, a source of food, wealth and pride, will wander aimlessly, searching for nutritious forage but finding only scrub — the last hearty vegetation before the sand takes over.

Cattle wander in Ethiopia, Charles Stewart, UNEP.





Cash croppers face a major loss in profits; businesses fail and there is less food to offer on the international market. Commodity prices will soar, and those least able to afford the increases, the poor and the hungry, will suffer most.

If degraded land conditions are coupled with a wild card, such as a climatic fluctuation, a drought for example, the results can be disastrous. The land, already weakened from abuse, fails to sustain itself through the crisis. In Africa, recurrent droughts and famines seem to have become commonplace rituals.

Voices from the desert, relayed through the media, tell of the suffering caused by the spreading deserts. The voices are those of a new generation of environmental refugees — families and communities — uprooted from their homes and land which in some cases have belonged to them for generations. Solutions are at hand, but lie in wait for the commitment to apply them.

Homeless and landless, an Ethiopian refugee, Ian Steele, UN.

## *Commitments to halt desertification*

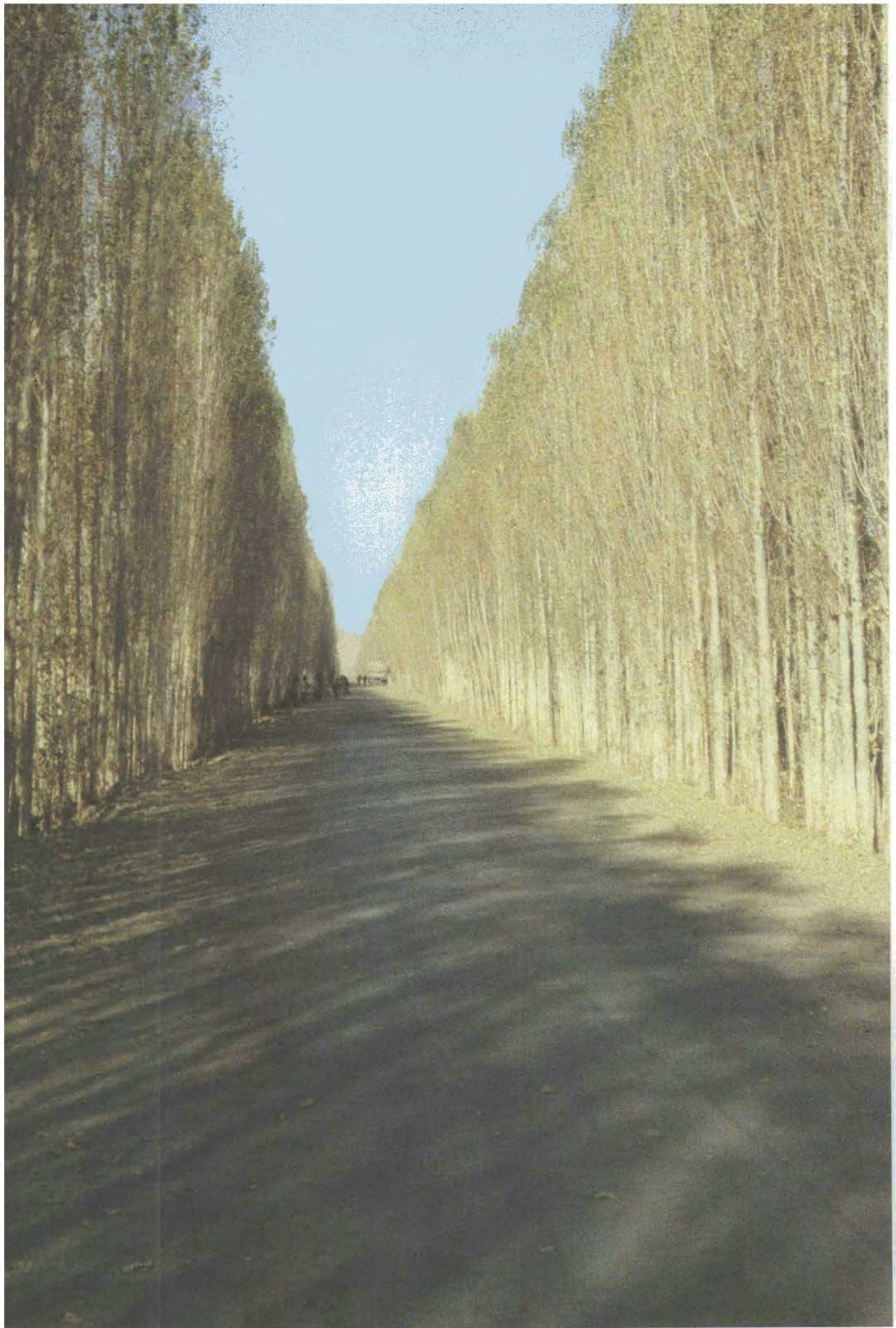
As far back as 1974, the United Nations General Assembly resolved to convene the United Nations Conference on Desertification (UNCOD) to be held in 1977. The Conference discussed and agreed on a comprehensive *Plan of Action to Combat Desertification* around the world. UNCOD recognized that to carry out the plan successfully, co-operation must be instilled between people, governments, scientists and aid agencies.

Appropriate technology is not the problem; will and wealth are. It has become increasingly evident that governments and aid agencies are often not interested in ecological development because tangible results can take a long time to achieve. There is no quick visual evidence to show the worth of their investments, unlike large development projects such as dams, roads and bridges. International financiers sometimes fail to realize that all the emergency assistance they are generously sending to drought-stricken areas may eventually become regular aid assistance, because against the backdrop of desertification these societies can never hope to become self-sufficient again.

It was decided after UNCOD that the United Nations Environment Programme, based in Nairobi, Kenya, would follow-up, co-ordinate and implement the *Plan of Action to Combat Desertification*. A special programme was developed to carry out this responsibility.

At UNEP, the Desertification Control Programme Activity Centre is devoted to combating desertification. Experts formulate solutions and pinpoint areas most in need of help. The Centre acts as a catalyst and co-ordinator for training, education and spreading desertification-control expertise and information. However, it can only advise. It will take the strength of individual governments working in concert with each other and with organizations and individuals to make real progress.

Sustainable projects that focus on proper land conservation and use, directly involving those who use it, are encouraged. In the past, many projects have failed because the people using the land were not involved. The tools and techniques for better land management lie around us. With the co-operation of land users the desert can be made to bloom.



Windbreaks in China stop the sand, UNEP.

## *Forestry curbs desertification*

**T**he regeneration of deforested areas through social forestry is a sure way to curb desertification and reclaim denuded woodland areas. Trees, which bind the soil, break erosion-causing winds, supply people with much needed fuel and animals with fodder, help ward off desertification. Through planting trees, people in local communities can learn the importance of greening the forest areas they use to ensure the survival of a sound environment for future generations.

For many countries, the need for afforestation is already a race against the clock. There is often conflict between land users because land needed for the new forests is already under cultivation or used for raising livestock. To diminish this problem agroforestry, forestry blended with agriculture, can be introduced. Trees are planted in such a way that crop and livestock production is enhanced rather than displaced. Social forestry and agroforestry often overlap and represent

Planting seedlings in India, Steve Jackson, UNEP.



appropriate development with human concerns in the forefront.

There are many ways of increasing the productivity of rain-fed farming that can reduce the need to cultivate on marginal lands. Irrigation schemes with proper project design and management can help to increase yields without wasting soils. Drought resistant varieties of seeds are available. Biofertilizers can restore the

land's fertility and raise crop yields. By farming crops appropriate to given areas and using integrated systems of rotation and fallow, crop failures will decrease. Once farmers attain higher yields they can break out of the vicious circle of reducing fallow periods and constantly expanding the area under cultivation to maintain previous production levels. There is a lot of research underway that is shedding light on appropriate farming technology.

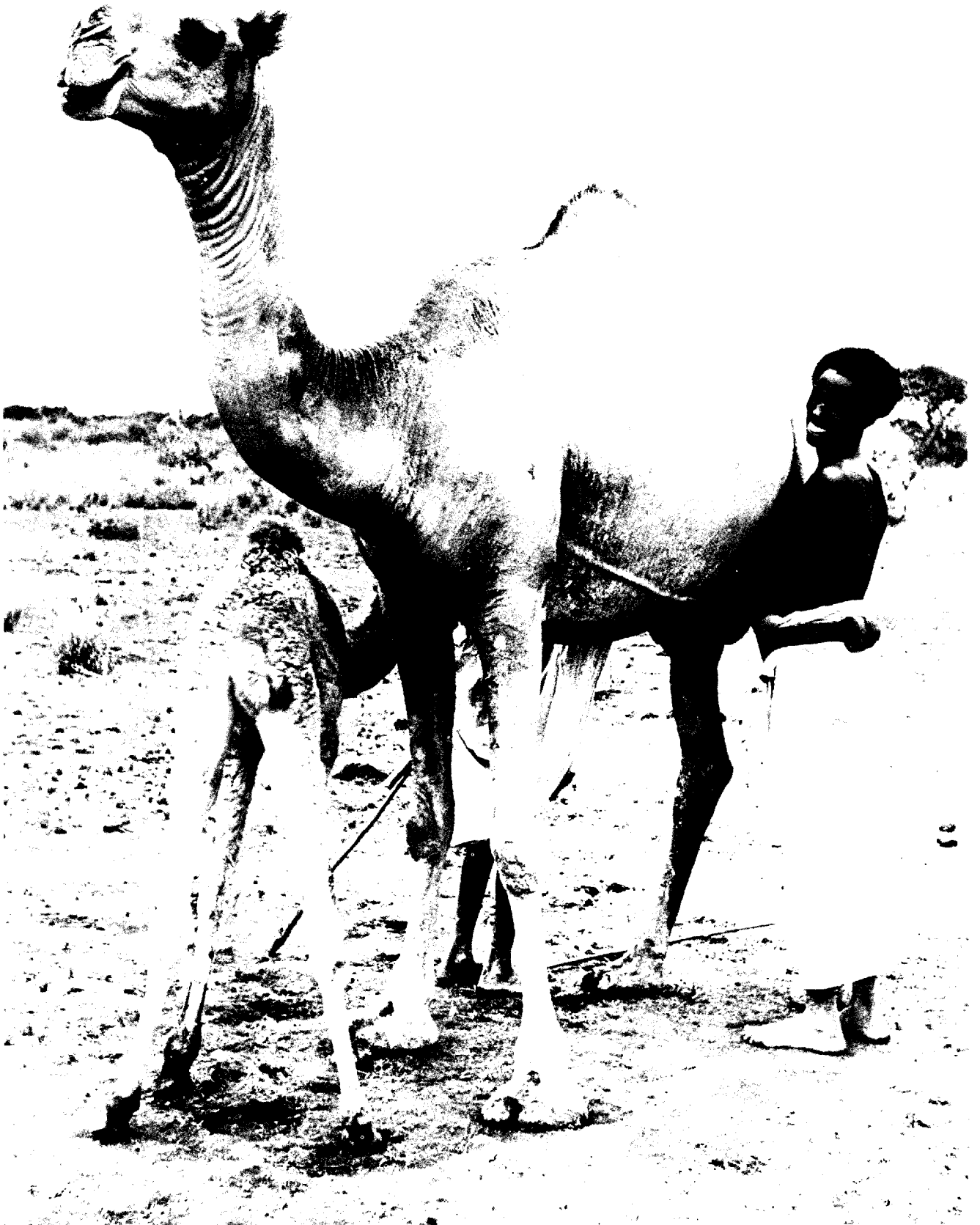
Terracing Rajasthan, Steve Jackson, UNEP.





UNEP.





Somali man with camel, Eric Schwab, WHO.





Camels at a water hole in Sudan, Jill Paul, UNEP

Pastoral problems, such as livestock breeding and rangeland use, are also under scrutiny. Because of the environmental destruction that cattle, sheep and goats can cause, alternatives to pastoralism with these kinds of livestock are being sought. One viable alternative is the camel. Often linked with the past, camels are now being promoted as the animal of the future. They seem to be the key animal to help stop desertification.

Camels have a great capacity to supply meat and milk and are versatile in their grazing and water needs. They do not overgraze areas and can eat at several vegetation levels, reducing pressure on the

low levels. They disperse more and travel further, again allowing vegetation to thrive. Their flat, hoofless feet do little damage to the soil compared to sharp hooved cattle, goats and sheep. Camels are also dependable beasts of burden.

It is unreasonable to expect pastoralists to give up cattle, goats and sheep altogether, but it is feasible to slowly reduce their numbers and replace them with camels. Pastoralists need help in acquiring these expensive animals. Conversion to camels would take a long time, but they do offer part of an appropriate and sustainable solution to the desertification dilemma.



UNEP.

**T**hese are only a few of the ways that deserts can be controlled and reclaimed, and the creation of new deserts stopped. Nearly ten years have passed since UNCOD declared the urgent need for action to halt desertification. But the years are blowing, by with little progress being made. Every day we lose more ground to sand — land that could be used to feed people. The people on the front-line in the fight against desertification are up against long odds: a dearth of financial assistance, passivity on the part of policy makers, and a lack of the co-operation necessary to put the available technology to work.

Time is short, and it is up to all of us to change our attitude to the environment. We could begin by shifting our focus from droughts, famine relief, refugees, political conflicts and other related problems, and address the underlying menace: desertification.

A brief sprinkle of rain in the desert can cause flowers to spring to life. As people have demonstrated, vegetation can once again flourish in wasted forest beds, rock-hard soils, and pastures devoid of a blade of grass. Do we want lands of plenty or swirling dust bowls?

The choice is ours.