

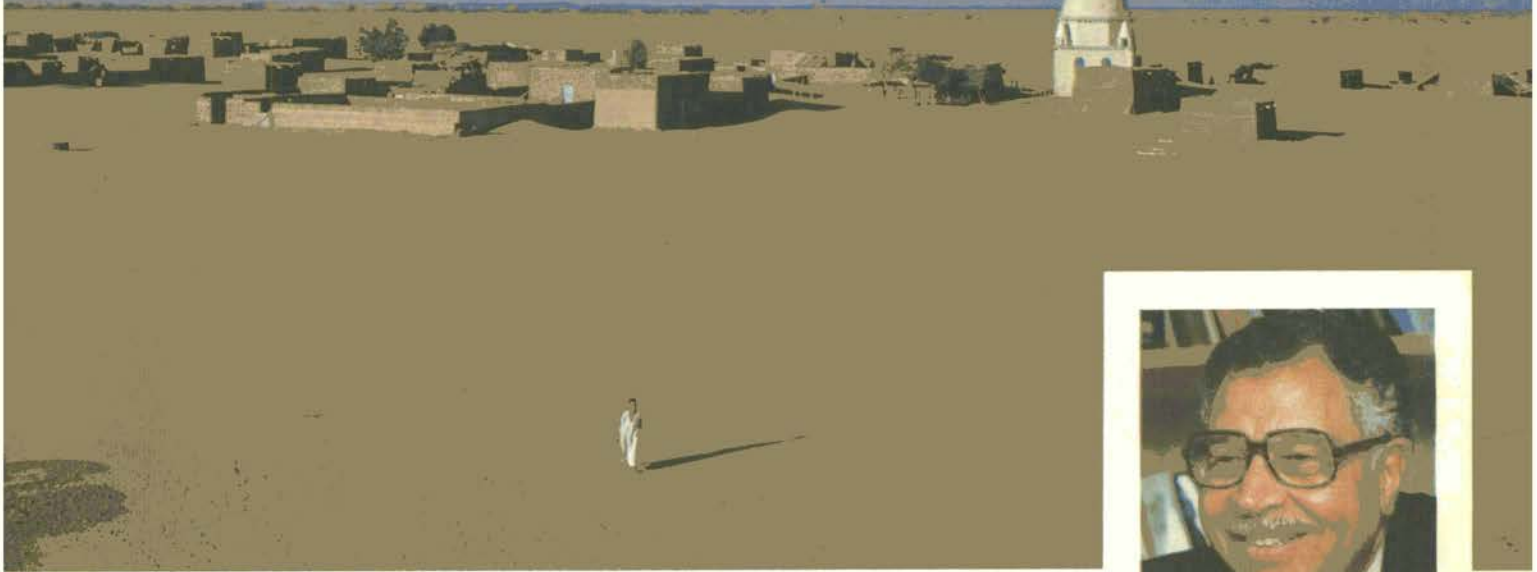
ROLLING BACK THE DESERT

Ten Years after UNCOD



DESERTIFICATION CONTROL PROGRAMME ACTIVITY CENTRE

This village near the Nile Valley in Sudan used to have trees and shrubs growing around it. Man has learned to live in a 'treeless desert', but at great expense. (UNEP/Monique Mainquet)



Mostafa K. Tolba
Executive Director, UNEP

"Desertification is a human tragedy"

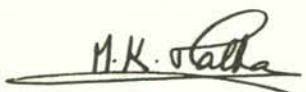
Ten years ago in Nairobi the United Nations Conference on Desertification was held. I was the Secretary-General of the Conference and I have vivid memories of the spirited debate, long working sessions and great sense of satisfaction all of the participants experienced at the end when the Plan of Action to Combat Desertification was approved. I realized that the road ahead would not be easy for UNEP, as the designated agency to follow up on co-ordination and implementation of the Plan, or for myself. I believe desertification to be one of the most serious environmental threats facing mankind, and I am dedicated to halting its spread.

Where are we ten years after UNCOD? It grieves me to say it, but more land and, tragically, more people are affected by desertification today than in 1977. In spite of hundreds of millions of dollars devoted to controlling the spread of deserts over the past ten years, they continue to roll forward. The task before us, the international community, is immense. A few hundred million dollars is not enough. If we are to save the lands threatened by degradation we need billions of dollars.

These billions need to be well spent and well managed. We are talking about saving at least 4.5 million square kilometers of land, over a third of the Earth's land-surface, and almost one billion people who live on that land.

Desertification is a human tragedy. People chop down more trees than they plant, put too many livestock on the rangelands, cultivate on marginal lands and steep slopes and cause waterlogging and salinization from improper irrigation. There are many different reasons why these things occur, but generally they need not if appropriate outside help is forthcoming. The people who cause desertification inevitably suffer from its effects.

UNEP has not lost hope. I personally believe that desertification is stoppable. This brochure is intended to explain to the reader what UNEP's Desertification Control Programme Activity Centre is and how it has been fighting and plans to fight in future the destruction of mankind's most precious heritage - its land. Our goal is to roll back the desert.


Mostafa K. Tolba

ROLLING BACK THE DESERT

Ten Years after UNCOD

DESERTIFICATION CONTROL PROGRAMME ACTIVITY CENTRE
UNITED NATIONS ENVIRONMENT PROGRAMME – 1987

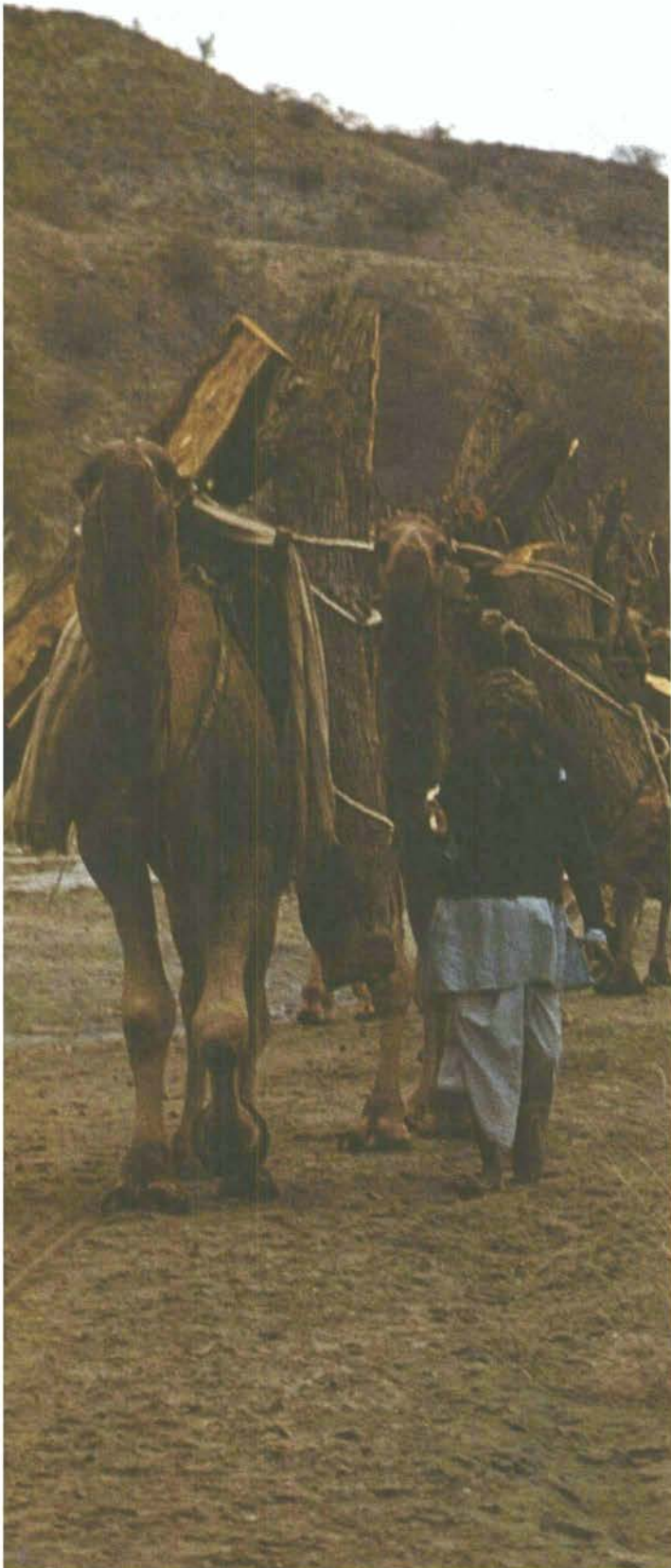


**Hauling wood from the mountain forests down to the
devegetated plains in the Potwar Plateau of Pakistan.**
(UNEP/Daniel Stiles)

COVER PHOTOS:

With proper care, gardens can flourish in the desert.
(Earthscan/Mark Edwards)

Sand dunes of the Erg Oriental in southern Algeria.
(UNEP/Monique Mainguet)



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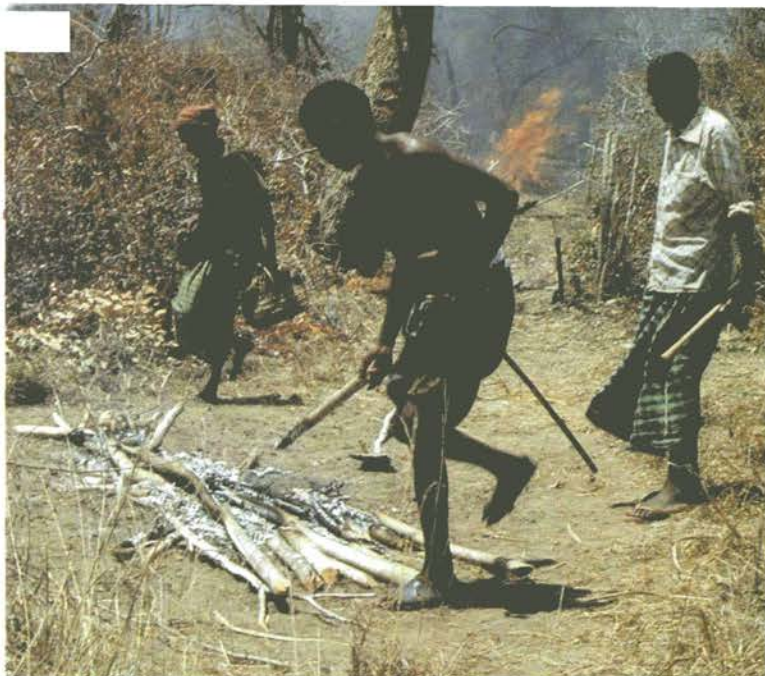
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At least a hundred hectares of forest is destroyed every year in the Lamu District of Kenya by slash-and-burn agriculture.
(UNEP/Daniel Stiles)





The United Nations Conference on Desertification

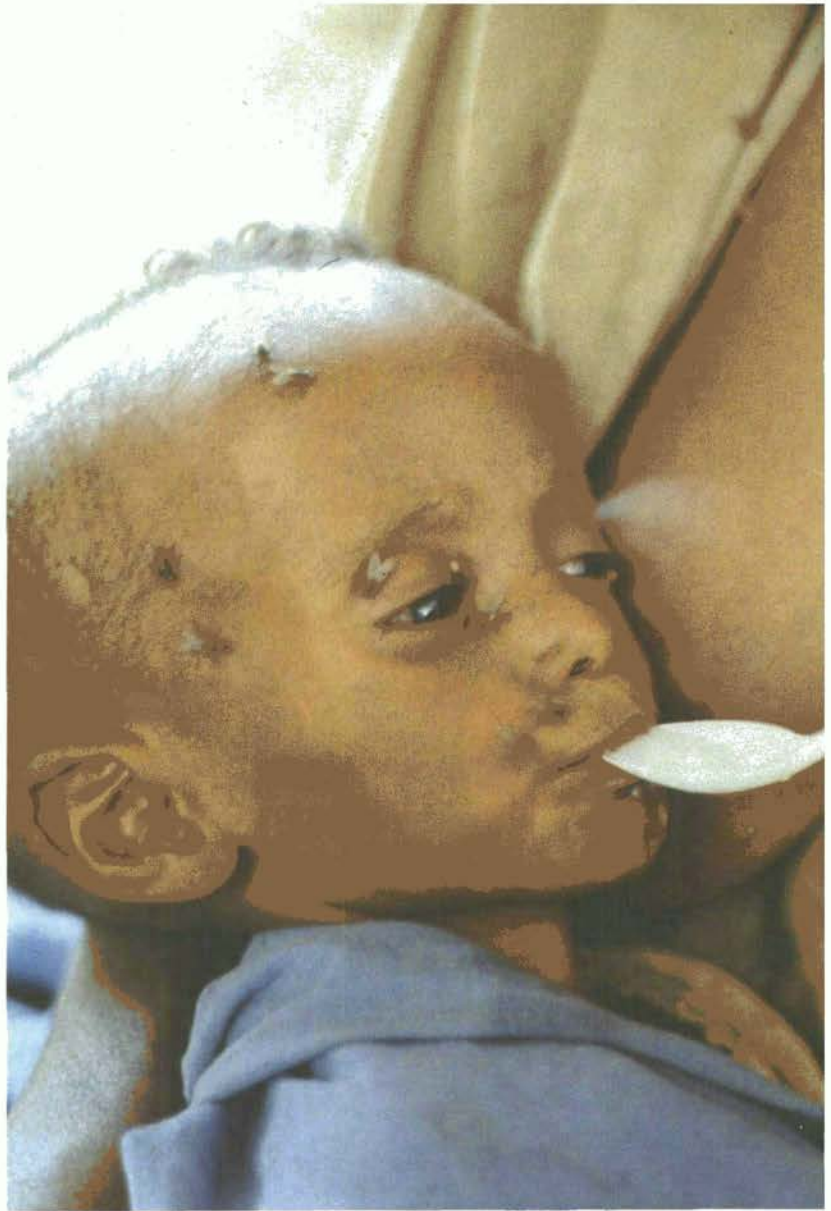
The scars of desertification were "visibly etched in the ecology of the region." That's how one account described it. Beginning in the late 1960s, a catastrophic drought and famine would cripple the six western African countries collectively known as the Sahel and leave an inheritance of hunger and dust for generations to come. The environmental cataclysm would eventually also bring about the UN's entire strategy to reverse the processes of desertification that had turned the roots of agriculture here into stubble.

"By 1971, Lake Chad was reduced to one-third its normal size," relate Hal Sheets and Roger Morris in their article entitled "Disaster in the Desert." "The great Senegal and Niger rivers were shrunken ... to shallow streams. Each year the wasteland of the Sahara moved relentlessly southward across the 2,600-mile belt. Ten miles here, 50 miles there, the desert consumed the parched land without vegetation or moisture to hold it back. The flight of some pastoral people began as early as 1968 as hunger hit various areas. By 1972 the migrations were massive, ending in the refugee camps, new urban slums or death."

At least 200,000 people had succumbed to and were bannished beneath the dead and dying soil of the Sahel by 1973. One analyst feared that "We don't know if the Sahel countries will even be here in ten years. It may be that all we can do is forestall the doom".

As the Sahel became daily international news, the horror of its environmental disaster was also etched into world consciousness in haunting visions of peanut fields gone to dustbowls, livestock turned to mummies and starving children wasted into pot-bellied skeletons. The Sahel was a turning point. The word Sahel is derived from the Arabic for border. And just as the Sahel forms the border between the insatiable Sahara and fertile lands to its south, so this juncture in its history would form the border between human ignorance of desertification processes and the beginning of a slow evolution toward knowledge. Thus, we can see the origin of the UN's desertification control, a Phoenix of sorts rising from the ashes of a burnt-out land.

By 1977 the UN was sufficiently alarmed and horrified by the prospects for more moonscapes such as those brought to mind by the Sahel that it convened the United Nations Conference on Desertification (UNCOD). Many of the questions that were seeds for this meeting, attended by some 500 delegates who gathered in Nairobi from 29 August to 9 September 1977, grew out of the sterile earth of the Sahel. Was the Sahelian drought evidence of larger changes in the global climate? Was the Sahara expanding southward? What implications did this expansion have for countries in its path? Or for the international community? And most importantly, what could



Desertification is one of the main contributing causes of famine. (UNEP/Charles Stewart)

be done to stave off this "harvest of dust" and retrieve the productiveness now locked beneath the scorched earth?

But the purposes and implications of UNCOD were even more far-reaching than the devastation extending across the Sahel. At least 35 percent of the earth's land surface is now threatened by desertification, an area that represents places inhabited by 20 percent of the world population. Each year 21 million hectares of once-productive soil are reduced by desertification to a level of zero or negative economic productivity, and six million hectares become total wasteland, beyond economic recoverability. To place these figures in a monetary context, \$26 billion a year were lost in agricultural products as a result of desertification in 1980. The loss is certainly higher today.

UNCOD served another purpose besides simply gathering the world's environmental community and decision-makers to consider the problems. It also acted as a rallying cry for a new viewpoint on desertification. The popular belief had been that desertification was mainly an act of nature; the ravages of unpredictable climate, drought and "outrageous fortune." By the time of the UNCOD in Nairobi, we were beginning to



recognize that assumption as naive at best. Perhaps a quote by UNEP Executive Director Dr. Mostafa K. Tolba expertly expressed this new outlook, as backed up by extensive scientific preparation for the conference. "In the case of desertification the main cause is not drought as many still believe; drought tends to exacerbate the problem, but human overexploitation of lands through overcultivation, overgrazing, poor irrigation practices and deforestation is the true culprit. And, in turn, the underlying causes of these reside in bad management, rural neglect and in political and economic forces resulting mainly from the world's inequitable financial arrangements and terms of trade. To this extent the developed world, the least victim of desertification, must accept a much greater responsibility and contribute to the shared effort in combating this global menace."

Inherent in Dr. Tolba's statement is a truth that environmentalists and other scientists were only beginning to glimpse before Sahel: The root cause of all desertification is population pressure on the land. Or as a forestry official in the Sahel said: "The Sahara is not moving south; we are pulling it south".

The General Assembly resolution that called for UNCOD (Res. 3337-XXXIX) delegated the responsibility of preparing for the meeting to the Executive Director of UNEP, with UNEP's 58-member Governing Council serving as the inter-governmental authority in charge. To ensure, as the Assembly resolution directed, that "all available knowledge in this area is fully utilized," the UNEP Executive Director Dr. Tolba drew extensively on the resources of the world scientific community. Four scholarly reviews were commissioned that looked at the relationship of desertification to climate, ecological change, technology and society. Underpinning these reviews were a further set of studies, funded by the UN Development Programme, that looked not at the global scene but at the actual processes of desertification in a number of countries. They analyzed the processes in different ecological and socio-economic circumstances and looked at the possibility of remedial action. Yet another group of scientists looked at the feasibility of transnational attempts to fight desertification. Other scientists within and outside the UN system prepared world and regional desertification maps. Based on all these activities, an overview was prepared which served as the main document for conference delegates.

What emerged from this intense pre-conference preparation was a fascinating picture of the fluid relationships between humanity and the biosphere. What became clear as well was that desertification is not just the concern of a few isolated countries. More than a third of the earth's surface is to some degree under siege by the degrading process.

So it was that on the heels of one of the single worst ecological collapses of recent history, representatives from 95 states, 50 UN offices and bodies, the UN Council for Namibia, the Palestine Liberation Organization, the South West African People's Organization, the Pan

Africanist Congress of Azania, eight inter-governmental organizations and 65 non-governmental organizations (NGOs) came together in Nairobi. Their major task was to use the scientific documentation prepared by UNEP and formulate a comprehensive, effective and co-ordinated Plan of Action to Combat Desertification (PACD), which could attack the problem at its roots and act as a basis for future UNEP programmes.

Ironically enough, the life-giving long rains had not petered out in Nairobi when the meeting convened in August of 1977 at the Kenyatta Conference Centre. The sight of nearby Uhuru Park glistening in the rain and the Jacaranda trees dripping perhaps gave the participants a feeling of symbolic hope that in other less-fortunate parts of the world fertility would eventually win over the forces of sterility. UNCOD too was a fertile ground for ideas. As Lloyd Timberlake commented in his book *Africa in Crisis*, "UNEP mounted one of the best UN conferences ever in terms of scientific data and explication of an issue." In fact, one result has been universalizing the term "desertification" itself, an ugly, unwieldy word for an ugly, unwieldy condition.

As time has revealed, some of the promises of UNCOD and its PACD have reached fruition; many have fallen upon barren ground. Why? and Why not? are questions as complex as the drifting, eroding and sterilizing processes of desertification in its entirety. Indeed, they are the essential questions that have propelled UNEP's anti-desertification campaign, based on the PACD, these ensuing 10 years.



The Kenyatta International Conference Centre hosted the 1977 United Nations Conference on Desertification.

The Plan of Action to Combat Desertification

rehabilitation costs rise exponentially. Action to combat desertification is required urgently before the costs of rehabilitation rise beyond practical possibility or before the opportunity to act is lost forever."

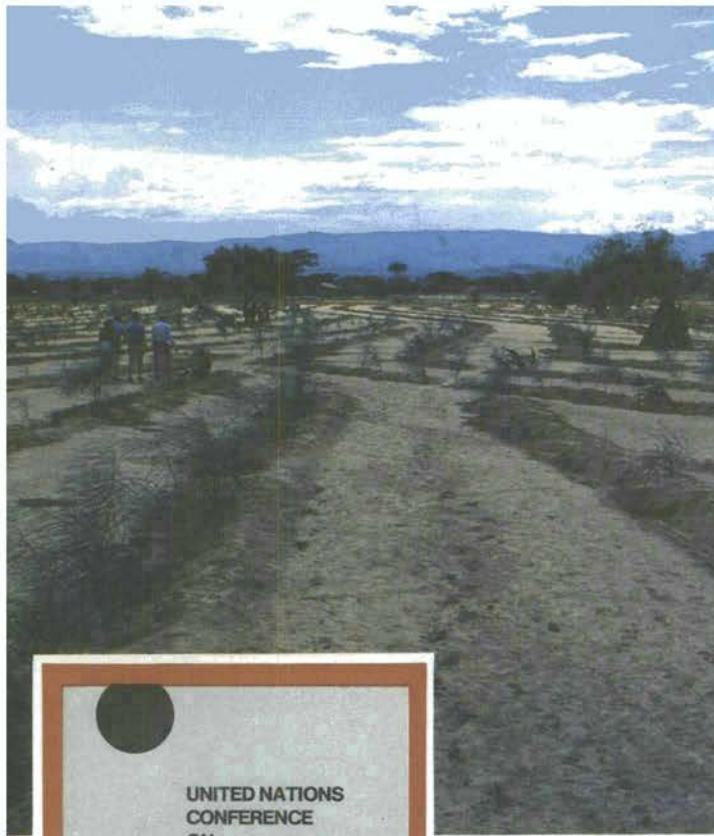
It is not surprising, considering that UNCOD presented this kind of viewpoint about the encroaching deadlands created by desertification, that the central theme of the PACD is that action must not await complete knowledge of the complex causes and effects of the process. The PACD recognized the need for immediate action to apply existing knowledge, not only to halt the physical deterioration manifested by the phenomenon, but also to educate people about it. They must learn to minimize the harm done to fragile drylands by using existing techniques for sane and healthful use. For example, the plan pointed out the necessity of basing improved systems of land use on the inevitability of periodic drought. And it acknowledged that drylands have a low level of natural biological productivity. Trying to stretch such productivity puts the land under dangerous stress.

During the two-weeks of UNCOD, the delegates spent most of their time considering the plan of action. A draft plan had previously been prepared by the conference secretariat, in consultation with an international group of experts, as well as with the help of governments at four prior regional meetings. The draft plan had also been taken up during meetings of UNEP's Governing Council. The draft plan and the extensive scientific documentation prepared for UNCOD gave the delegates a palette of ideas with which to work. As one conference document reports the arduous work of creation, "the delegates, considered the draft paragraph by paragraph, strengthening, reshaping and moulding it according to the needs of governments."

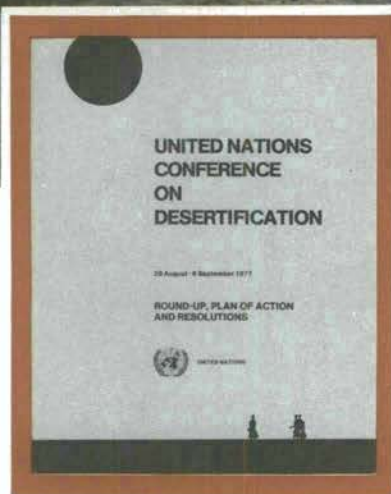
What resulted, five percent inspiration and 95 percent perspiration as Benjamin Franklin would have said, was a document consisting of 104 paragraphs and presenting 28 recommendations for action. Its heart and soul was a summons to humanity to rid the earth of the sterilizing menace by the end of this century.

That original and perhaps overambitious goal of the PACD, neutralizing desertification within 23 years, based its optimism on a scheme for immediate attack. The first seven years were set aside as the time for first-strike actions against desertification, after which a 1984 general assessment would analyze the success and/or failures of the strategy. The PACD proposed provisions for dealing with climate, water management, ecologies, soils and the sociology of affected peoples. It called for actions taken by nations, by regional bodies and by the international community.

Besides its immediate goal to arrest desertification and reclaim degraded lands, the



Water harvesting techniques are used to revegetate degraded land in the Baringo Valley of Kenya. (UNEP/Daniel Stiles)



UNCOD booklet cover

This booklet commemorates the 10th anniversary of the UN Conference on Desertification and its Action Plan to Combat Desertification. That UNCOD set in motion a ripple effect of far-reaching activities is beyond question. A professional paper written in 1978 by the International Institute for Applied Systems Analysis in Austria found that UNCOD produced unprecedented "reverberations" in the form of increased spending on desertification control, attempts to formulate plans and strategies, additional research and the spread of awareness about the issues. Finally, the paper said that "UNCOD has generated more post-conference discussion than any previous UN conference."

But the true test of UNCOD would be its action plan. An explanation for the strategy that UNCOD took in its PACD can be located within the landscape of the following statement issued by the conference. "In general, the quest for greater productivity has intensified exploitation and carried disturbance by man into less productive and more fragile lands... In exceptionally fragile ecosystems, such as those on the desert margins, the loss of biological productivity through the degradation of plant, animal, soil and water resources can easily become irreversible, and permanently reduce their capacity to support human life. Desertification is a self-accelerating process, feeding on itself, and as it advances,



PACD also espoused an ultimate objective to sustain and promote the productivity of all arid, semi-arid, sub-humid and other lands in order to improve quality of life for their inhabitants.

As stated in paragraphs 97-99 of the PACD, "the body designated by the General Assembly for implementing the Plan," or UNEP, was "to request and co-ordinate actions throughout the UN systems; stimulate national and regional action; provide assistance in project design; suggest strategies for financing projects; and arrange for and co-ordinate publications, training and research." UNEP, in this case, would act in its traditional role of catalysis and co-ordination, while the actual hands-on work of treating desertification would fundamentally be handled by governments through their national institutions.

Since UNEP was handed the responsibility for following up the PACD, Dr. Tolba went about setting up the administrative machinery. So it was that in 1978 UNEP's newly created Desertification Unit went to work with a mandate to put into motion the 28 comprehensive recommendations for national, regional and international action. In addition, the UNEP Governing Council and the UN General Assembly would specify particular activities for priority action. As part of this mechanism, the UNEP Executive Director would annually submit a detailed report to the Governing Council outlining the progress made on the PACD.

The name and status of the original Desertification Unit has been upgraded twice: In 1980 it became the Desertification Branch; and in 1985 it assumed its present identity as the Desertification Control Programme Activity Centre. DC/PAC, its administrative nickname, now operates out of UNEP headquarters in Nairobi using nine full-time professionals. It carries out seven types of work that fulfil its PACD function:

- assisting governments in national policy and planning
- supporting international bodies and networks
- co-ordinating and catalyzing anti-desertification activities
- monitoring, assessing and mapping
- operating pilot demonstration plots
- setting up research and training projects
- collecting and disseminating information.

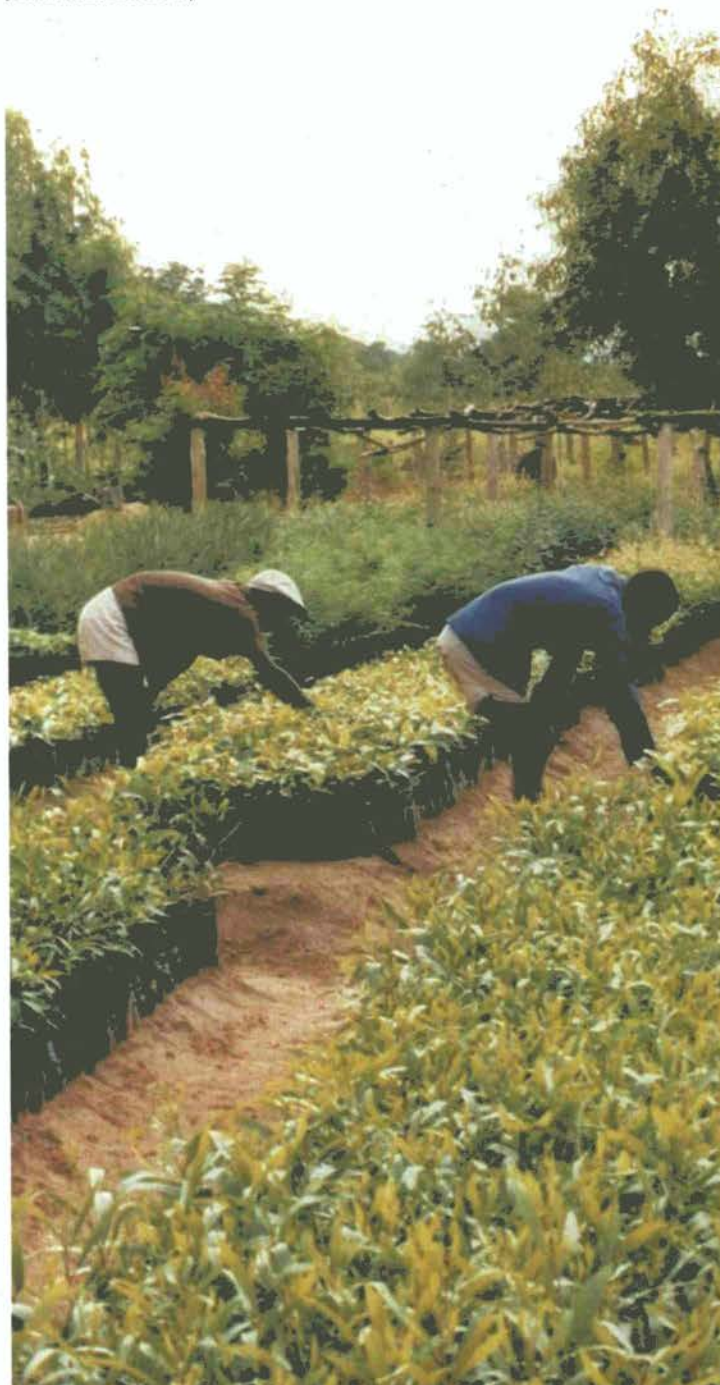
With an intelligent, well-thought-out PACD to work with and an organized mechanism for carrying it out, one should have hoped that UNEP would realize fast success in mobilizing governments and stabilizing the threat of rampant desertification. But more trouble was ahead. As stated, the PACD called for a First General Assessment of Progress in 1984. An anecdote about preparations for this assessment (called the GAP) showed that general concern by governments over desertification was not really much greater in the 1980s than it had been before UNCOD. To cull information for the GAP, UNEP sent out questionnaires to all affected nations. Response was at first so apathetic that UNEP was forced to hire consultants to help the governments fill out the forms. Even so, as Timberlake reports in *Africa in Crisis*, "The data

in the responses of those countries that did bother to respond was so poor that UNEP found them virtually unusable. Governments, even those rapidly losing good ground, simply do not know the extent of the problem within their own boundaries."

Excepting a few scattered activities, the "immediate actions" that PACD called for were clearly and simply not happening, even in countries that desperately needed them. As was becoming alarmingly apparent to UNEP, a sense of will and the resulting financing that expresses it were woefully lacking. There was, on more than one level, a Desertification GAP. The 1984 General Assessment would try to determine why. It was time to take the counsel of the late Indian Prime Minister Indira Gandhi: We must "once again put our ear to the ground so that the earth can whisper its secrets to us."

UNEP provides support to an AGFUND-UNSO project in Benin which produces thousands of tree seedlings annually for farmers for planting.

(UNEP/Hussein Abaza)





General Assessment of Progress (The GAP)

During the hard year of 1984, when desertification was fiercely imposing its geological leprosy on the landscape of Africa, US Vice-President George Bush delivered a vital message to delegates attending a UN conference on the emergency: in effect, where there's a will, there's a way. "In the 1930s, in the central plains of the United States, my country, Americans experienced something we call the Dust Bowl," he remarked. "The land kicked up dust as dense as it is in areas of the Sahel. People said that the land would never produce crops again. That was just in the 1930s and today an important part of the food America ships to Africa comes from what was once known as the Dust Bowl... Africa too will reclaim its once-productive land."

Unfortunately for the six million people who faced starvation in the highlands of Ethiopia in 1984, and the millions more in a similar predicament elsewhere, the will of decision-makers on many levels had not been committed to the principles of the PACD.

By the time of the first general assessment of the PACD in 1984, an ironic gulf had formed between the many citizens knowledgeable about desertification and the government officials in positions to apply such knowledge. UNCOD had inspired numerous conferences, seminars, workshops, articles and books on desertification. Professional societies, such as the International Geographical Union and the International Society of Soil Sciences, had established working groups on the process. Desertification had become the focal point for the UN University arid and semi-arid lands programme. The UNEP Desertification Branch (as it was called then) had sent exploratory missions to Bangladesh, Benin, Botswana, Burundi, Lesotho, Nepal, Tanzania, Uruguay, Yemen Arab Republic and Yemen People's Democratic Republic, while UNEP support made possible missions to 19 countries in the Sudano-Sahelian region of Africa. Meanwhile, the Desertification Branch had maintained working relationships with desertification scholars and specialists throughout the world and within the elements of the UN.

But most governments were not responding. As James Walls commented in a comprehensive article in one of the Branch's information forums, its *Desertification Control Bulletin*: "Between professional awareness and government performance a gap exists that is not easy to explain... One cannot escape the feeling that the very lack of political will to confront desertification is an expression of fundamental issues and circumstances. Holding back from vigorous action against all expert advice is too widespread a phenomenon to be accidental."

In fact, despite energetic efforts by UNEP to initiate national action plans through missions

and other communications throughout the world, the results were disappointing at best. "Two national plans and nine draft plans constitute the meagre results of five years of effort on the part of the Desertification Branch," said a report called an *Evaluation of Institutional and Financial Arrangements* done in 1982 for UNEP. This report, written by Sir E.R. Richardson, Ambassador to the UN from Jamaica, was one of several in-depth evaluations that UNEP commissioned as documentation for its 1984 General Assessment of the PACD.

In introducing the GAP, which distilled these evaluations and other data (about 4000 pages worth) into a manageable document, UNEP's Dr. Tolba gave a lucid and perceptive vision of why the PACD was not working as planned:

"Desertification and the other threats to the planet's life support systems are causing social and political breakdown which in turn threatens our tenuous global security. In UNEP we believe that a failure to recognize this ultimate, environmentally induced threat lies at the root of the apparent unwillingness of nations to tackle desertification and resource exhaustion on anything like the scale demanded.

We need to look no further than the absurdly inadequate level of contributions to the Special Account set up in 1979 to finance the PACD for an illustration of the low priority nations attach to tackling the problem. By the end of 1983 it had received less than \$50,000 — all from developing countries. The special machinery the General Assembly set up to mobilize funds to tackle desertification has raised in its six years of existence only \$26 million, 25 percent of the minimum target figure. These sums should be weighed against the \$4.5 billion needed annually over a period of the next 20 years to stop desertification. If this seems like a great deal it should be balanced with the UN's 1980 estimate which would put the cost of agricultural production lost through desertification at \$26 billion.

Population pressure forces poor farmers out into marginal areas to plant their crops. The infertile soil produces one harvest, then the land is abandoned and another section is cut and burned out of the bush the following year. If this system persists, one day there will be no bush — and no habitats for wildlife — left in Africa. (UNEP/Daniel Stiles)





Wood is becoming so scarce in the Ethiopian Highlands that people now are buying roots and litter to cook their meals with. (UNEP/Daniel Stiles)

From every angle — cost effectiveness, political and social stability, self interest, humanitarian concern — the case for a massive mobilization of resources to tackle the global problem of desertification appears overwhelming. UNEP says that this will not come about unless, and until, decision-makers and the general public alike develop a new perception of the nature of the threats."

The findings of the GAP related to the current status of desertification made it clear that the "massive mobilization of resources" spoken of by Dr. Tolba had not taken place during the seven years of the PACD. Some of these revelations, as summarized from the GAP, were that:

- The scale and urgency of the desertification problem as presented to UNCOD were confirmed. The goal set by UNCOD to arrest the advance of desertification by the year 2000 no longer seemed feasible.

- In the seven years since UNCOD, desertification had extended and intensified in all its forms. Accelerating desertification was shown in five regions, two of them in Africa, one each in West and South Asia and one in South America.

- The total desertified area on earth now made up 75 percent of the productive area of the world's drylands and 40 percent of the world's productive area.

- The number of people who inhabited lands undergoing desertification had increased by 35 percent over the number presented to UNCOD in 1977.

J. A. Mabbutt in his *Assessment of the Status and Trend of Desertification*, one of the documents used to create the GAP, found a number of conditions explaining desertification's proliferation. For example, climatic conditions in many desert areas were particularly unfavourable during the first seven years of the PACD. Human and livestock populations had tended to increase unchecked. On the other hand, productivity had failed to meet the demands of increased pressure. Simultaneously,

economic conditions during the world recession had deteriorated, especially in the Third World where terms of trade had become increasingly disadvantageous to developing countries. And in several regions, warfare and political strife had disrupted the continuity of anti-desertification programmes.

Of those conditions, the reality of "unrelenting demographic pressure," as Mabbutt called it, was the one he considered most important. It's the underlying cause of all desertification. He also noted that people living in areas strongly hit by desertification display the highest birth rates in the world. As his accompanying tables and graphs indicate, Mabbutt additionally found a tight correlation between desertification and underdevelopment. "Given the interdependence of the development process, population change, relevant technologies and biological productivity," he concluded, "it follows that the effects of desertification on productive ecosystems can best be ameliorated if action takes into account all these elements." That concept translates to the now cliched and much abused expression "sustainable development."

When examining the particular constraints that were cutting into the effectiveness of the PACD, the GAP again leveled criticism at what had become an administrative bugaboo for the entire desertification endeavour: the absence of will, a lack of firm commitment by both suffering countries and the donors who might contribute support against desertification. Dr. Tolba commented that "Governments do not see desertification as a high-priority item. Lip service is paid to combating desertification but the political will is directed elsewhere. There seems to be little appreciation that a major goal of many developing nations, that of food self-sufficiency, cannot be attained if soil and plant resources are allowed to deteriorate."

The proof of commitment, of course, is in the money. The second constraint on the PACD, the GAP found, was financial resources to back up fine words and intentions. Insufficient financing was indeed sucking dry the activities of the PACD, and the GAP cited an urgent need to develop external sources to meet the staggering costs of maintaining a stand against all the forces causing desertification. The Special Account set up to finance the PACD was proving a bust. "The weak drawing power of the Special Account," said Walls in his article, "provided a melancholy backdrop to these financial deliberations." Undaunted, however, several expert groups suggested a wide variety of financial options for bucking up the resources of the economically woebegone plan of action. Some of the clever suggestions included:

- Establishment of a trust fund from gold sales by the IMF
- links between development finance and special drawing rights
- taxes or parking fees levied on geostationary satellites
- levies on revenues from seabed mining
- levies on the Common Fund for Commodities.

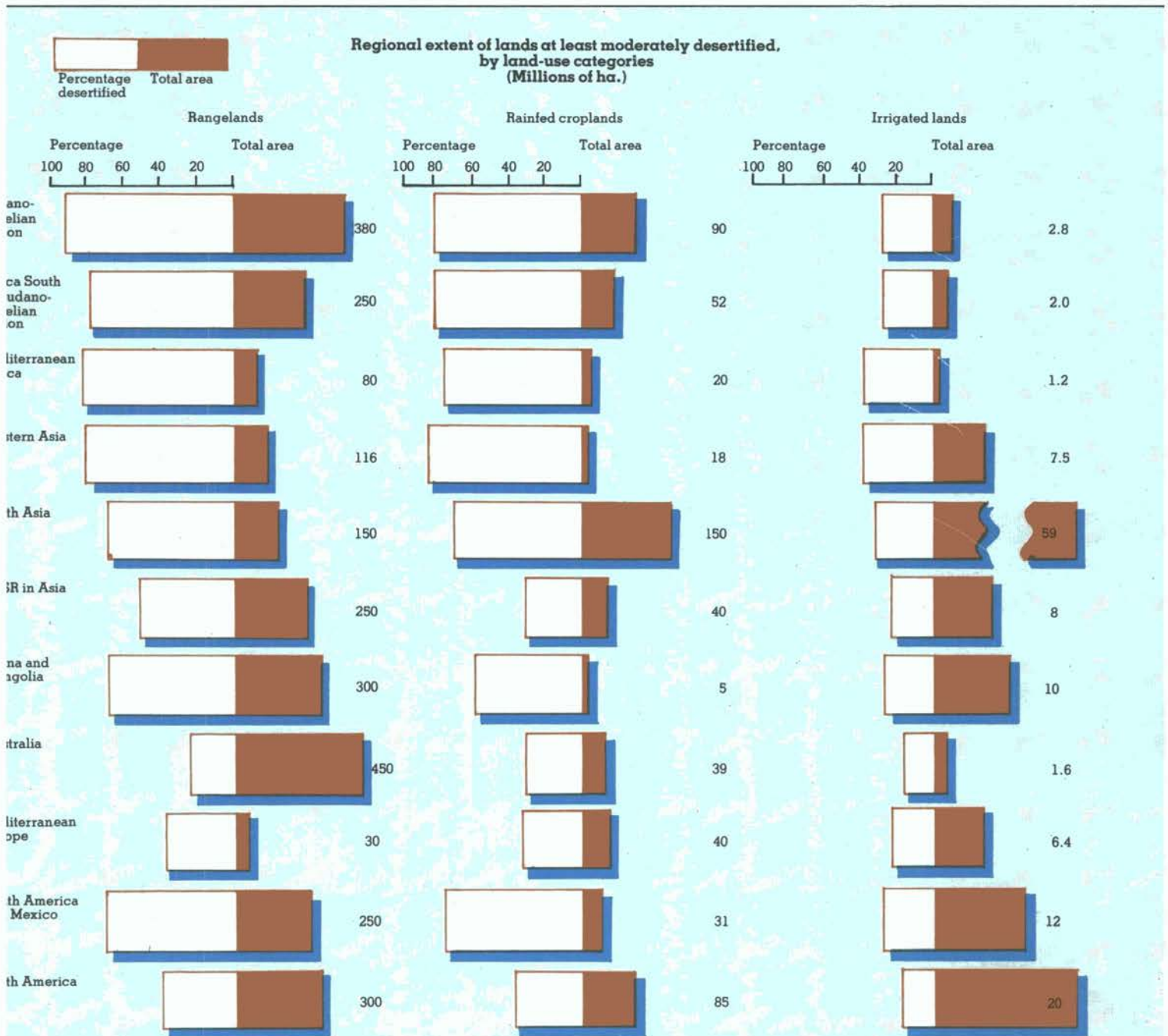


Even as scientists, administrators and financial experts worked over the PACD and their findings were being announced to the world in a disturbing General Assessment, the harvest of their stern warnings was being gathered in places like Ethiopia and Sudan. In Ethiopia the Socialist Government had for years been organizing farmers living in the highlands into Peasant Associations to plant trees and construct soil terraces for saving soil and water. But some 70 percent of the country's 42 million people live in these highlands. That factor and the drought of 1983-84 totally overwhelmed the efforts of the Government and people. By May of 1984, six million people were living on the brink of starvation. A report by the International Disaster Institute about the Ethiopian crisis virtually authenticated dire predictions presented in the GAP: "With population growth constantly outstripping growth in agricultural production; and with virtually no alternatives to agriculture as

a means of livelihood for the vast majority, the agricultural base of the Ethiopian economy becomes ever more vulnerable to the periodic droughts which are an inescapable fact of life in the Horn of Africa, as elsewhere. It can be confidently predicted that the scale of suffering and death will likewise grow."

An Ethiopian peasant spoke for millions in similar dire straits around the world when he told the UN that 10 years ago his crops were healthy, but in the meantime his top soil had washed away. He probably entered a permanent expression into the language of desertification when he said that "Now all I have is a harvest of dust."

In Sudan the drought of 1984 was as deadly as in Ethiopia, complicated by the fact that streams of hungry refugees from Ethiopia were pouring over the border. Thousands of rural people clogged up the cities and towns, while only 5 percent of the rainfed crops were successfully harvested. By 1985 Government agricultural



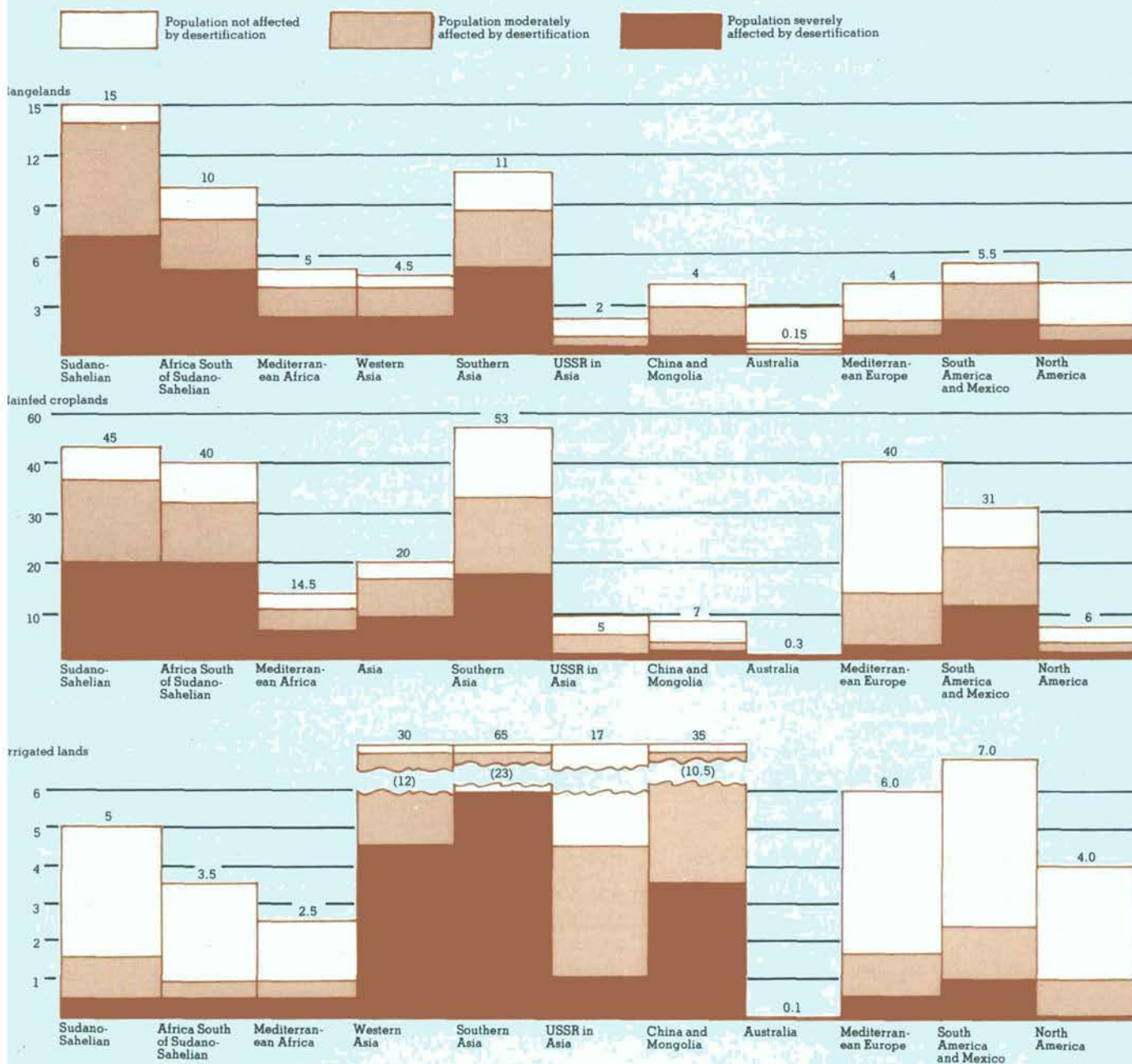
adviser Omer Al Amin admitted that the country faced long-term problems in feeding its people, "not only because of drought, but because of soil deterioration."

These poignant illustrations formed the sad background music for the message DC/PAC and the General Assessment were attempting desperately to communicate to the world. "There is almost nothing to indicate a reversal in the deteriorating trends leading to more desertification and more loss of cropland and consequently less food for man and animals," Dr. Tolba said, expressing this message. "That developing countries affected by desertification still continue to accord low priority to desertification in their development plans and in their bilateral assistance negotiations still constitutes ground for serious concern; available solutions cannot be applied to problems which are not presented for solutions."



Check dams made up of stones serve to catch eroding silt behind them when water flows, thus filling up the gullies. (UNEP/Daniel Stiles)

Rural human populations affected by moderate or severe desertification (Millions)





UNEP in Action

If the first General Assessment revealed a critical gap between knowledge and action, and sketched out a sad still life of accelerating world desertification, its findings left room for much hope. Progress toward holding back the tide of sand lay in motivating national governments to act. Dr. Tolba put the proposition this way: "Economic self-interest, compassion and concern for the fate of coming generations are the motivations that must be appealed to."

One ray of hope was the work of UNEP and other UN agencies. "United Nations agencies can take most of the credit," said a 1984 article by Harold Dregne for the journal *Environmental Conservation*, "for the development during the 1977-83 period of a heightened awareness of environmental issues (about desertification) among scientists, governmental officials and professional and non-professional people. Political support for action however, remains weak."

In the period between 1977, when the PACD was adopted, until 1985, at least 30 desertification-control projects were completed with UNEP support at a cost exceeding \$15 million, \$11 million coming directly from UNEP. By 1985 there would be another 20 projects in progress, costing another \$51 million (\$21 million from UNEP; \$30 million from co-operating agencies and organizations).

There was also hope in the universal view held by all involved in the GAP, including independent scientists, administrators, UNEP personnel and members of the Governing Council, that desertification can be stopped, and that the PACD still showed exactly how to do it. The key might well be putting more clout into those activities that had been working, and de-emphasizing those that hadn't. The first step, quite naturally, was to put more metal into the mechanisms that UNEP had created to carry out anti-desertification activities.

One obvious way to do so was to bring the Desertification Branch up to full strength, a luxury the group had never enjoyed because of that hobgoblin of all desertification activities, fiscal constraints. Thus fortified, the Branch would continue to act as a central information base and provide a periodic compendium of activities. It would still work with governments on setting up national action plans and their structures. But in addition it could take on increased responsibilities, including serving as a programming centre to co-ordinate the global attack on desertification in full co-operation with all other specialized agencies.

There was much justification for fortifying the Desertification Branch. In Dregne's article he outlined the accomplishments of the Branch during its first seven years of activity.

"The Desertification Branch has assisted some 30 countries of Africa and Asia to assess the status of desertification, to plan a desertification control programme, and to prepare project proposals for submission to DESCON (see below). Reports

published by the assessment missions sponsored by the Branch accomplished much — at low cost — in raising governmental awareness of desertification problems. Unfortunately, many governments did not take advantage of UNEP's invitation to have an assessment mission visit their countries. Meanwhile, the Branch sponsored training courses in the USSR and China, and assisted FAO in preparing a methodology for the assessment and mapping of desertification.

"The Desertification Branch also publishes *Desertification Control*, a periodical which now carries high-quality articles and is the prime source of information on UN activities on desertification and its combatment."

So it was that during the next few years the Branch was upgraded to its present status of Programme Activity Centre and its professional staff was filled out to a number which could meet the new demands. DC/PAC now acts as a bustling control centre for a wide-flung campaign of activities, all owing their conception to UNCOD, the visionary "twinkle in the eye" that led to the birthing of all UN attempts to thwart desertification. A look at some of DC/PAC's projects and activities will give one a better understanding of the scope and ambition of UNCOD's active progeny in the battle against land sterilization.

One of the key mechanisms set up to implement the PACD was DESCON, the Consultative Group on Desertification Control. Composed of UN agencies, donor agencies and national governments, DESCON has the responsibility of mobilizing financial resources for desertification programmes and projects. The object of DESCON is to identify existing resources, stimulate new ones and undertake collaboration between donor groups and receiving countries. DESCON also acts as a forum for donor and recipient countries to meet every two years and discuss desertification-control policy. DC/PAC serves as DESCON's secretariat, and also channels project proposals from governments to DESCON for consideration and support.

During its first seven years of activity DESCON failed to live up to its potential as a funding source, therefore the Group was the object of careful scrutiny by the GAP. One finding was that DESCON was "afflicted with low morale," its members having judged their own performance as insufficient. So the GAP suggested ways of reactivating the Group. DESCON was reoriented, in a way, by taking on the additional tasks of continually reviewing its own progress under the PACD and of advising the Executive Director on priorities and on approaches to knocking down constraints and mobilizing resources. This tack seems to have put new wind into DESCON's sails. The Group has now mobilized more than \$45 million in anti-desertification funding. At its meeting in 1985 DESCON considered 14 desertification projects at a total cost of about \$35 million and expressed interest in supporting six of them, worth about



\$20 million.

At its last meeting in March 1987 DESCON discussed 13 project proposals costing almost \$29 million, and several received expressions of interest. DC/PAC is now vigorously facilitating implementation.

But there is still concern at UNEP about constraints on the Group's effectiveness. UNEP's 1986 Annual Report said this: "If the Group is to carry out its mandates, and assist meaningfully in the implementation of the PACD, it is necessary that the international donor community become more actively involved in the work. The recipient countries themselves must ensure that the anti-desertification project proposals they submit to the Group for consideration are prepared in the context of their national development priorities."

Another key mechanism, and one examined closely by the GAP, is the Interagency Working Group on Desertification (IAWGD), a body whose important purpose is to co-ordinate activities having to do with desertification control among UN agencies. Under this mandate IAWGD must also: exchange information on agency anti-desertification projects; plan the implementation of short- and long-term objectives of the PACD; recommend readjustment of ongoing activities; formulate projects for co-operative action; and prepare

annual reports. Serviced by DC/PAC, IAWGD has "undoubtedly served to reduce duplication of effort and to inform agencies of new ideas on desertification control," according to Dregne's evaluation. What had been missing in the desertification field. The Group has been working to establish regional networks for sand-dune stabilization, along with research and training. And the IAWGD is also co-operating in the gathering and spreading of data on desertification control to all UN agencies concerned.

As this booklet described in an earlier chapter, one PACD tactic — that UNEP induce as many countries as need be to produce and carry out National Plans of Action to Combat Desertification (NPACDs) — was meeting with disappointing response from governments. Nevertheless, a shift in emphasis in the years after the GAP has re-energized the effort. The new policy of concentrating UNEP's limited resources on a few countries has met success. The Sudan was the first country to receive UNEP's technical and financial support under the new policy, and as of 1986 it had formulated a NPACD, which was approved at the highest levels of Government, and a national machinery and co-ordinating body was being set up to carry through the process. DC/PAC has also recently assisted

Success story in Tunisia

Two-thirds of the land area of Tunisia is being eaten away by desertification. With that underlying tragedy as an unstable foundation for any efforts to establish productivity on the Spartan rangelands of the country, UNEP has been fighting the good fight against land sterilization there since 1978. UNEP co-operated with UNESCO and the Institute of Arid Regions, southern Tunisia, in the Integrated Project on Arid Lands (IPAL) from 1978 to 1985, and later in a follow-up pilot project, both of which are described elsewhere in Chapter Four. It also funded a desertification-awareness campaign that had a strong training component in it.

In 1985 Tunisia became one of the first countries in DC/PAC's concentration strategy and, as such, began to integrate desertification-control into overall development plans in order to veer away from the piece-meal attention that desertification often receives if unrelated projects are spread too thin. Thus, the road was paved for Dr. Tolba's official visit to Tunisia for high-level discussions with Government officials to set up an integrated, concentrated strategy for the land. One offshoot was an agreement that UNEP would provide technical assistance to help Tunisia formulate its National Plan of Action to Combat Desertification. As a consequence, two experts with long-term working experience in Tunisia worked for several months with government personnel to create a draft NPACD.

This national strategy concentrated efforts on the six governorates of southern Tunisia, where mean annual rainfall averages 100 to 200 mm. Together the

governorates cover a land area of 8.5 million hectares, of which 2.8 million are unproductive desert and 5.1 million are suitable as range only. The remaining .6 million hectares, only marginally adequate for agriculture, are nonetheless almost entirely under the plough, being planted with arboriculture, cerealiculture and irrigated agriculture. Adding to the stress on the land, which, one official quipped with black humour and poetic license, exists on the "blink" of disaster, is the fact that population in the six governorates totals one million, a soil-sapping increase of 62 percent from 20 years ago.

The national plan aimed to reverse the greedy terms imposed by desertification by the turn of the century, a possibility that seems more credible in this situation of concentrated efforts than in other less-responsive countries. The tactic here is to encourage farmers and herders to undertake by themselves protection and management actions, knowledge that will be imparted through information campaigns and rural extension.

The plan contained 21 proposals for priority projects. The projects all fell into five categories: (1) natural resource inventories; (2) protection and development of land; (3) desertification-control research; (4) training and information; and (5) evaluation and follow-up.

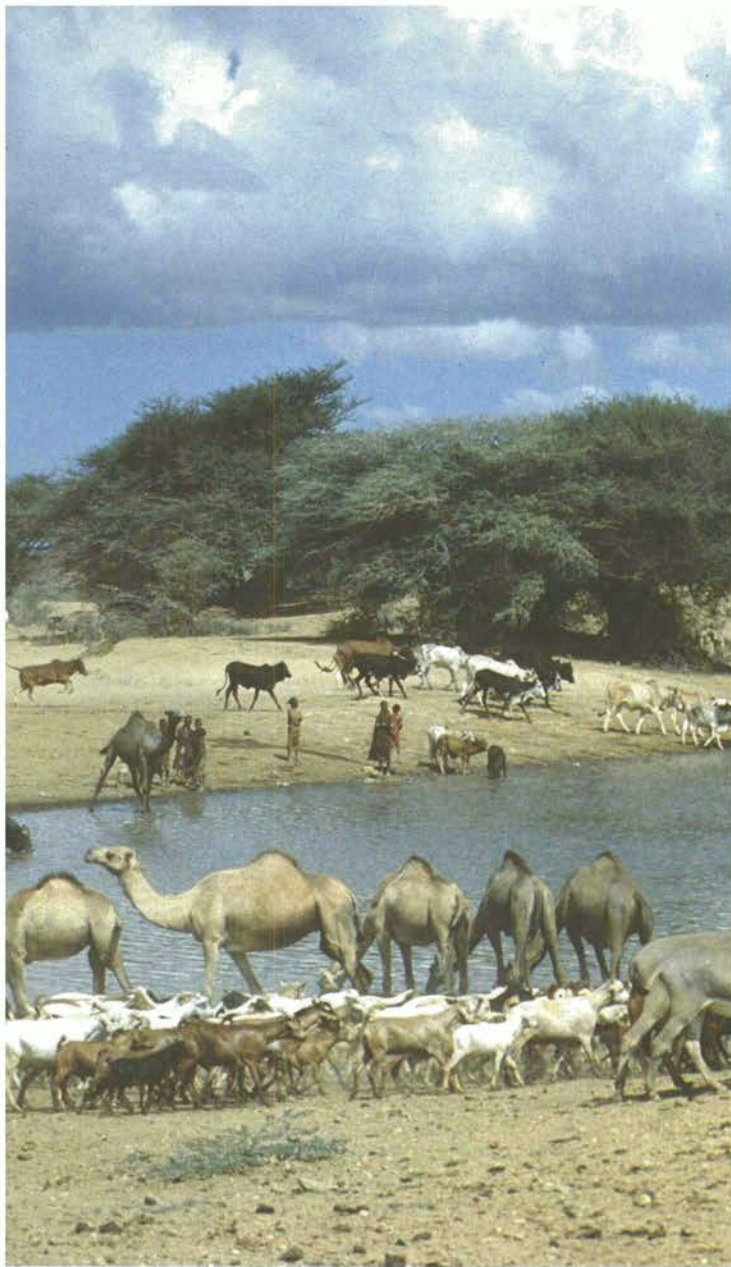
As we shall see below, UNEP kicked off action on the draft plan by presenting it during a national seminar in November of 1986 which also brought Government officials and donor



Sand dune fixation is one of the activities supported by UNEP in southern Tunisia.

(UNEP/Tibor Farkas)

representatives together, thus setting the funding wheels in motion. To prime the pump for drawing donor money, UNEP itself funded the number-one priority project, the pilot seed bank mentioned at the end of this chapter. Within several months, five priority projects were already funded and a half dozen donors had responded to the stimulus of the seminar and had met the crisis at hand with support.



The Integrated Project on Arid Lands, part of UNESCO's Man and the Biosphere programme, started up in Kenya in 1976 with UNEP's support. One of the major goals was to arrive at an understanding of the social and ecological aspects of livestock in the arid lands. (UNEP/Daniel Stiles)

Tunisia to formulate a NPACD and new processes of this kind are underway in Botswana, Jordan, Syria and Pakistan.

The PACD recommended a series of Transnational Projects, "But in virtually all cases these failed due to strained political relationships between countries," Dr. Tolba said in 1984. Fortunately, joint ventures on the regional level have been more successful of late. One of the most important ongoing transnational projects is the "Transnational Green Belt in North Africa." DC/PAC helped form a Permanent Joint Committee to establish the green belt, a buffer of trees, shrubs and other vegetation planted along the fringes of the Sahara to keep the dunes from spreading northward.

Another transnational project is "The Regional Aquifer of North-East Africa," which is evaluating the potential of the regional Nubian Sandstone Aquifer for anti-desertification purposes and has enlisted the co-operation of Sudan and Egypt. DC/PAC provides the co-ordination secretariat.

One transnational setup that has become a

model for others to follow is the UN Sudano-Sahelian Office (UNSO). It undertakes the co-ordination and follow-up of the PACD in the 22 countries of that region on behalf of UNEP. DC/PAC provides both institutional and programme support to UNSO. UNSO has been successful at employing a number of innovative ideas in the area, including the two transnational approaches listed above. Another example is that it has established pilot projects to introduce drought-resistant crops, such as the oil-producing jojoba plant which is native to the American southwest and can replace sperm-whale oil. UNSO has also been experimenting with alternative sources of energy to replace wood burning, which is a prime cause of desertification. Using solar and biogas stoves, engineered for simplicity and efficiency, is one way. And yet another project has been using small dams, placed strategically here and there to conserve surface water and irrigate crops, and UNSO of course also catalyzes the surrounding tree-planting activities.

After observing the ecological collapses in the Sahel, Ethiopia and other places during the last 15 years, desertification experts must admit that the life of the nomad, always living on the edge of extinction, must be examined in depth. That was the purpose of the Kenya- and Tunisia-based Integrated Project on Arid Lands (IPAL). IPAL's objectives were to study the processes of desertification and their causes in these nomadic areas, to design management guidelines and, ultimately, to train scientists, administrators and, above all, local land users in proper methods of land management. What kind of practical results are being realized by IPAL? The Kenya project is encouraging the tapping of a species of acacia tree that produces gum arabic, currently in short supply on the world market. The possibility of using this tree as a cash crop would provide a much-needed alternative living for nomadic people. An IPAL follow-up activity is looking at ways to increase the productivity and use of camels, now recognized to be much superior to cattle in terms of food production, survivability and environmental adaptation to drylands. These are but two of many examples of the work at IPAL Kenya, a joint UNEP/UNESCO project that is now financially and technically supported by the Federal Republic of Germany. See the accompanying box for more details on IPAL Tunisia. Both the Kenya and Tunisia projects produced management plans now being used to plan desertification control and development activities.

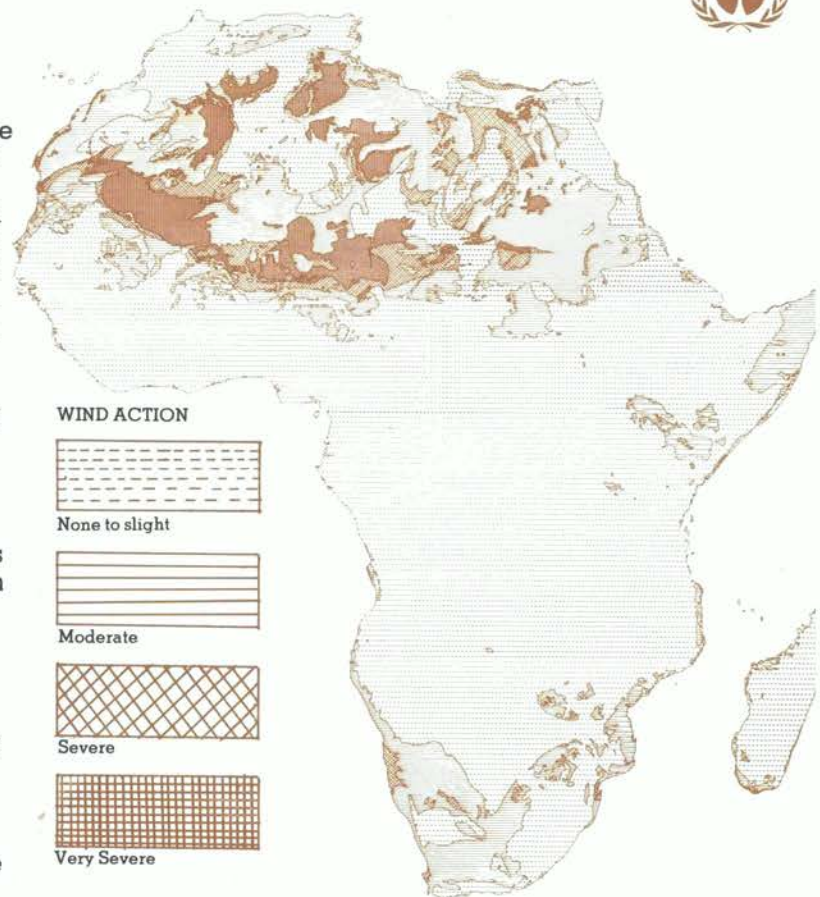
The PACD called for an extensive FAO/UNEP collaboration on Desertification Assessment and Mapping of the World. Phase I, starting in 1979, developed a provisional methodology for assessing and mapping desertification dynamics, taking into consideration the potential risk, called "hazard" in this case, for given areas. Scientists field tested the methodology in Mexico, Texas (USA), Burkina Faso, Sudan, Tunisia, Syria, Pakistan, Turkmen SSR and Australia; then cartographers produced draft maps at various scales. In addition, a pilot study in north-central Algeria analyzed multi-temporal Landsat data with a view to identifying spectral



parameters related to desertification that could be used in mapping. Phase II of the FAO/UNEP mapping project began in 1983 and, based on the methodology above, drew up a world map of soil elements used in assessing desertification at a scale of 1:10,000,000. Since the map itself would be tantamount to inscribing an epic novel on the head of a pin, the scientists needed to organize a plethora of information on world desertification. They therefore set up a Geographic Information System (GIS) using methods and software then being developed for use by UNEP's Global Environment Monitoring System (GEMS). Using automated digital cartographic techniques, the Environment Systems Research Institute of California produced the world map on soil elements as well as a map of desertification hazards in Africa, both demonstrating use of this provisional methodology. A national application to test the methodology began in Kenya in 1987 and it will subsequently be disseminated to appropriate countries as a standardized tool for assessing, mapping and monitoring desertification. UNEP will also use the methodology for preparation of a *World Atlas of Thematic Maps on Desertification*, as called for by UNEP's Governing Council. And the Kenya results will form the foundation for DC/PAC's establishment of a desertification database at the national, regional and global levels, a clutch of pertinent information linked to GEMS' Global Resources Information Database (GRID).

Since information is one of the most pertinent products that UNEP has to offer to the world community at odds with desertification, the organization has set up many ways of dispensing it. One is the preparation of Teaching and Management Manuals and Reports on various aspects of desertification. Another channel of information is UNEP's *Annotated Directory of Institutions Concerned with Desertification*, published in 1986. The directory contains more than 500 entries from around the world.

Films and slide shows remain one of the best ways to get serious information across painlessly. That's one reason why UNEP has produced a number of audio-visual shows related to desertification. Films include: *Trees for Tomorrow*, a focus on tree-planting activities in a DC/PAC project in Southern India; *Tomorrow's Famine*, a 30-minute documentary examining the deadly link between desertification and lost food production in Africa; and *Camels*, a seven-minute documentary extolling the environmental virtues of the dromedary and aired on Worldwide Television News in 1986. Yet another set of films was produced by the Television Trust for the Environment with DC/PAC support: *The Crowded Desert*, a look at India's Thar Desert; *China Shifting Sands*; and a series of films on the Ethiopian Highlands (*Seeds of Despair*, *Seeds of Hope*, *After the Harvest* and *Seeds of Hope, the Village*) that has won the US Emmy and Peabody Awards. Plans are now in the works for additional Television Trust films in Southeast Asia. DC/PAC also produced the slide show *Harvest of Dust*, a commented, single-projector presentation that has been put out in English, French, Spanish and Arabic.



The Wind Action component analysis map prepared in the production of the FAO/UNEP Map of Desertification Hazards in Africa at 1:25 million scale.

Certainly, one of DC/PAC's most effective devices for spreading the word on desertification is *Desertification Control Bulletin*, a bi-annual publication whose stated purpose is "to disseminate information and knowledge on desertification problems and to present news on the programmes, activities and achievements in the implementation of the PACD." In his evaluation article, Prof. Dregne commented that the bulletin was "a periodical which now carries high-quality articles and is the prime source of information on UN activities on desertification and its combatment."

During 1986 DC/PAC took action to establish another tactical means for getting information out, especially, to decision makers in governments, donor agencies and NGOs. This is the Desertification Information System (DESI). To this end, DC/PAC installed an IBM PC-AT micro-computer with appropriate peripherals, then set up a corresponding programme for development of databases. Five such databases will be at the disposal of people who need them: a Desertification Library (DELI), which will be an annotated bibliography of publications and reports; Desertification Projects (DEPRO), containing a compendium of all UNEP and other UN projects and activities; Desertification Organizations (DIOR), a directory of desertification groups worldwide; Wind Erosion, Its Effects and Control Solutions (ACWIND), a collection of technical information on that subject; and Wind Erosion Bibliography (BIWIND).



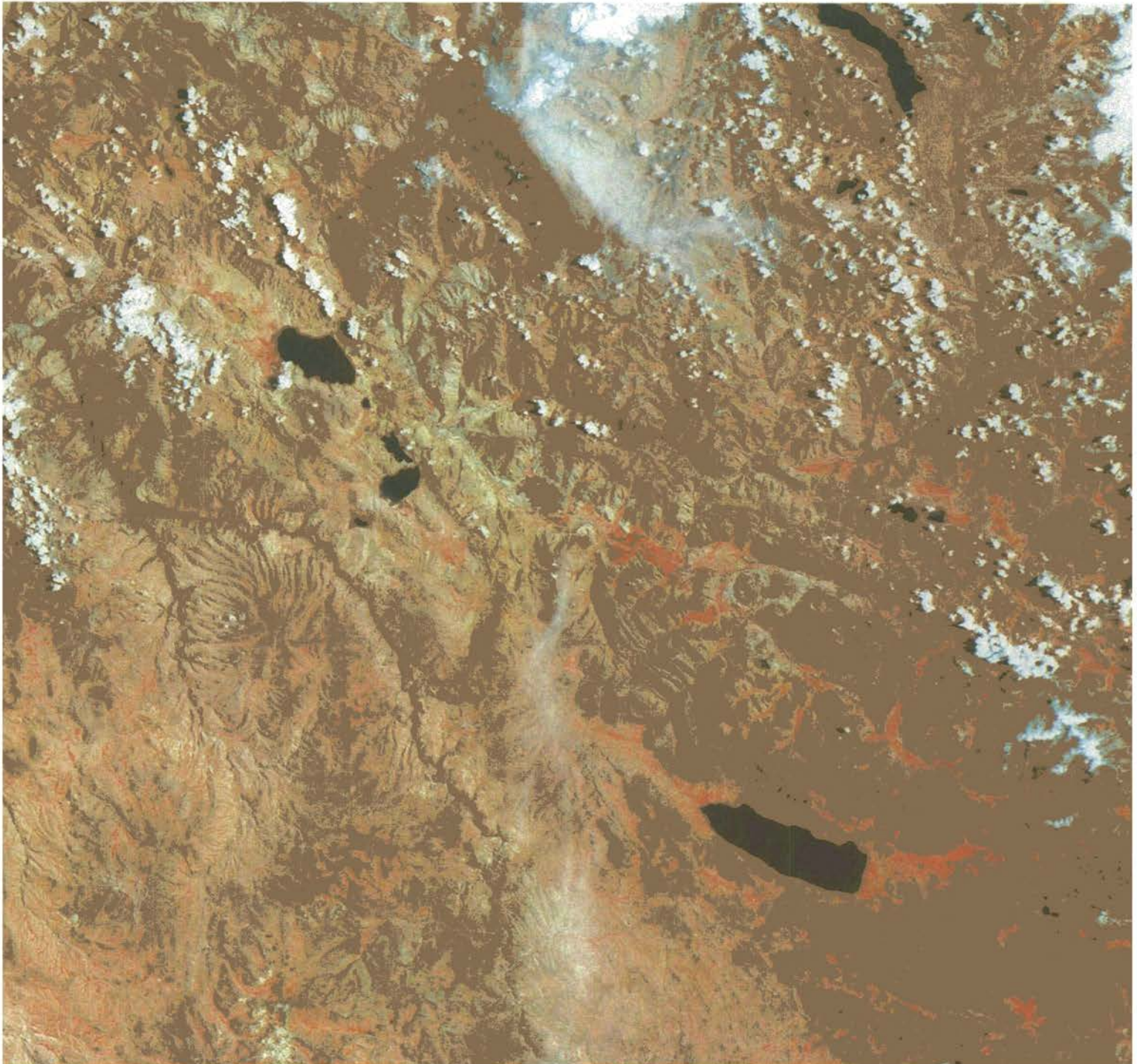
The most direct, and perhaps most lasting, method of passing information is through Training. DC/PAC supports training in desertification control under projects in cooperation with the Government of China, the UN members of IAWGD, regional training institutes and the USSR Commission for UNEP (UNEPCOM). During 1986 alone, a total of 2,184 trainees were exposed to desertification control in UNEP-supported projects, and 1,600 of those were at the grass-roots level. Since 1979, UNEPCOM has been sponsoring training courses in desertification control at the Desert Institute in the Turkmenian S.S.R. and in Moscow. The Chinese Government is also planning to create an International Research and Training Centre on Desertification Control in Beijing which will be done in association with UNEP.

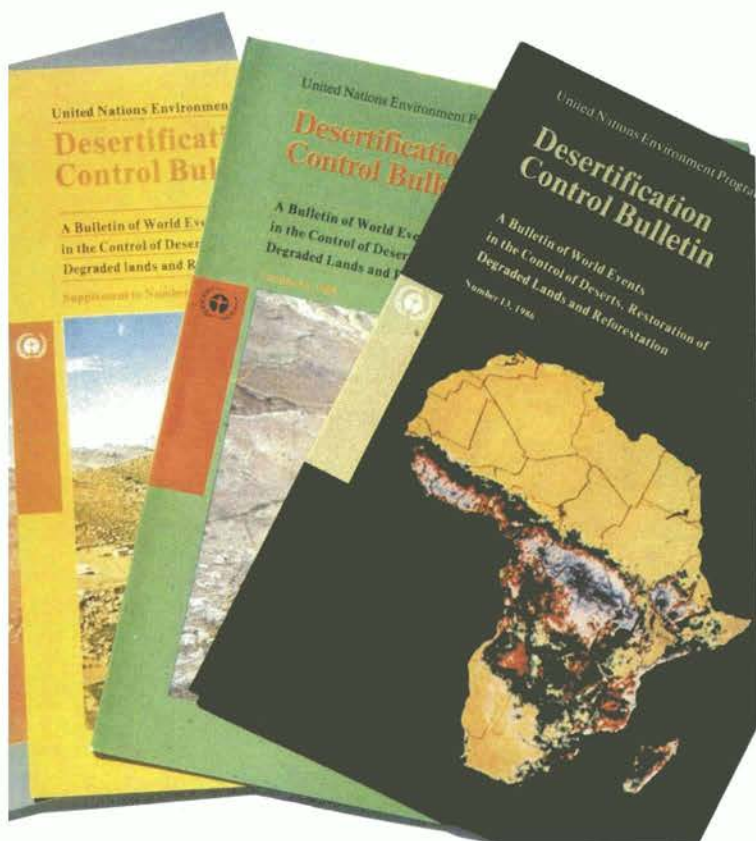
In response to a Governing Council decision, UNEP has also begun setting up networks of research and training centres on desertification

in the ESCAP and ESCWA regions.

In many ways, Non-Government Organizations (NGOs) are the most effective groups that DC/PAC works with on desertification control at the village level. Dregne cited a study that analyzed a sample of desertification projects run by NGOs around the world and showing that half were directed toward on-the-ground reduction of desertification. And 70 percent were devoted to field work and supporting actions. "Moreover, the project costs were miniscule in comparison with what the larger donors spent." No wonder the UNEP Governing Council decided to utilize this grass-roots resource by ordering the formation of regional networks of NGOs which had been performing hands-on desertification control. Recent activity related to these networks includes an effort to strengthen the African NGOs Environment Network (ANEN) by supporting particular NGO field projects in selected

DC/PAC is using satellite imagery as one of the tools in assessing and mapping of desertification. (NASA)





The Desertification Control Bulletin appears twice a year and acts as UNEP's main source of information dissemination on desertification matters. (UNEP/Daniel Stiles)

countries. UNEP will also train NGO staffers with desertification-control manuals prepared for NGO field workers. In the Asia-Pacific region, UNEP is supporting the establishment of a network within a network: a grouping of NGOs engaged in anti-desertification activities which are already members of an existing environmental network. In Latin America, meanwhile, UNEP financed a consultancy for locating all NGOs engaged in desertification actions in Argentina, Columbia, Uruguay, Chile and Peru, the first step in setting up a network there.

Yet a final way to distribute information is through demonstration. With that concept in mind, DC/PAC has set up Pilot Demonstration Projects in widespread locations as illustrations of what UNEP believes is good land-use management. See the accompanying box for one good example in southern India. Another is a seed bank which UNEP and UNDP are setting up in southern Tunisia and which will supply the plants needed to implement a wideflung revegetation plan formulated previously by the joint UNEP/UNESCO IPAL project. In a way, this pilot flies us full circle, because the project harks back to the original strategy that UNCOD, through its PACD, established to combat desertification. How? The seed bank, you see, is part and parcel of the Tunisian Government's National Plan to Combat Desertification. The gist is that all the above activities are not spur-of-the-moment solutions to sweep shifting sands back in place wherever they happen to break out. Rather they are all linkages in an expanding chain of controlled events, set in motion 10 years ago by the momentum of the UNCOD meeting in Nairobi.

Forest Knowledge Centres and People's Nurseries

An underfunded, understaffed NGO in Southern India has set in motion a chain reaction of planting, training and other desertification-control activities that UNEP considers a model for grass-roots projects everywhere. That's why DC/PAC has been supporting the effort as one of its special demonstration pilot projects. The G. G. Soans Memorial Farmers' and Rural Afforestation Training Centre, a seemingly humble community forestry movement, since 1985 has produced more than two million tree seedlings, planted more than one million trees, established more than 21 "Peoples' Nurseries" to supply plants for these purposes and set up upwards of 1,000 school children's tree nurseries.

Motivated by community spirit, and also receiving support from the Indian Government, the NGO has also organized five Van Vigyan Kendras, or Forest Knowledge Centres, located in five villages in the Karnataka and Tamil Nadu states. These centres give short, intensive training courses during the monsoon season in which school children and farmers learn general environmental concepts and techniques of establishing nurseries and propagating shrubs.

Following training sessions at the Forest Knowledge Centres, teachers hold massive tree plantings using the seedlings grown in their nurseries. The nurseries not only serve to combat desertification encroachment, but add important alternative livelihoods for local farmers. The seedlings act to prevent erosion and other soil degradation on the ravaged plains and hillsides of southern India.

The pilot project involving the activities of the Soans Centre and its relative the "Millions of Trees Club," shows that, with a little help from their friends, modestly endowed, locally run and self-motivated groups can make immediate and lasting impacts on desertification with a level of cost-effectiveness that puts to shame many expensive and massive projects. The motto of the pilot could perhaps read "Small is bountiful."



Women and children work in a People's Nursery in Karnataka State of India in a UNEP supported tree planting project. (UNEP/Daniel Stiles)



The Road Ahead

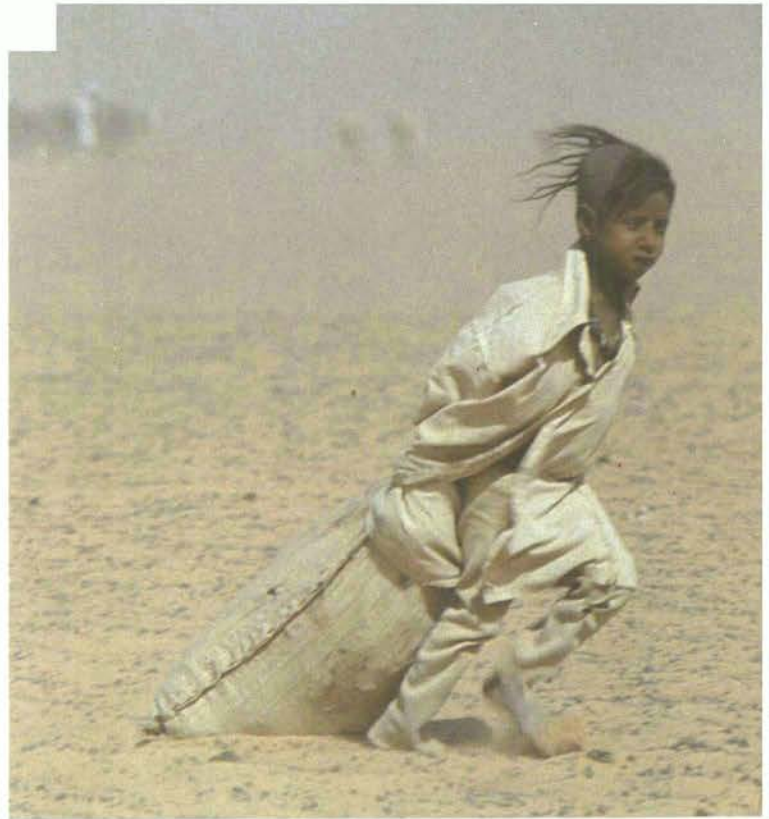
During a speech at the Gulf University in Bahrain in November of 1986, Dr. Tolba mapped the lay of the land for UNEP and DC/PAC as it begins to steer through the mean rains, unforgiving landscapes and shifting sands of the future. He made it clear the trip will not be easy.

"Desertification is a human tragedy. Rooted in human mismanagement it is neither unpredicted nor unstoppable. And yet the deserts are on the move. It is a tragedy that locks the greater part of a billion people into a cycle of poverty and destruction. It is a catalyst for famine and for conflict. It feeds upon itself, and it promises still greater destruction in the years to come. Its causes, however, remain largely unaddressed; its effects are misunderstood, and the tools to bring about its end lie around us — largely unused and sometimes unnoticed."

The difficult task of DC/PAC as it heads toward the year 2000 is to identify those "tools" for the world at large and make sure they are understood and put to use in the dying soils. Else some areas, and even more entire nations, will literally dry up and blow away.

One promising omen for the future took place from 16-18 December 1985 in Cairo, when the First African Ministerial Conference on the Environment convened. Put on by UNEP in co-operation with the UN Economic Commission for Africa and the Organisation of African Unity, the conference served as a forum on the environment for ministers from almost every African country and observers from more than 15 non-African countries and 30 UN and specialized agencies and NGOs. As far as UNEP's desertification campaign in Africa is concerned, the conference plotted a specific and workable strategy for the foreseeable future called the Cairo Plan. Through DC/PAC's help, UNEP is responsible for carrying out two types of regional desertification projects as a follow-up to the Plan.

One type is based on the simple concept that if fodder is available in central locations during the dry season, livestock will not overgraze the surrounding drylands. In each African country having a semi-arid zone in which stock-raising is practiced — a specification that includes 30 countries — a pilot project covering 280,000 to 400,000 hectares will act to demonstrate the feasibility of the concept. Villagers will farm small plots to raise enough fodder to feed a large percentage of their livestock for eight months each year. They will irrigate these plots by using "animal traction water pumps," which work through the abundant power of donkeys, camels, bullocks or other animals walking in a circle and turning a wheel to draw water. Livestock will come to these central feeding stations to eat. Thus, the project will remove much of each herd for long periods of time from the rangeland, giving land and vegetation time to regenerate. The plan also calls for nurseries to be worked near each animal-driven pump, and for useful grass seeds and woody plants to be grown. Later, local villagers will sow the seeds in strategic locations and plant the trees where they will protect the soil. And these irrigated areas can



A small child struggles with a bag loaded with camel dung destined for the irrigated fields along the Nile Valley. Survival is a constant battle in the desert. (UNEP/Daniel Stiles)

also be used for growing cereals to feed local people.

The other plan is to take three villages from separate environmental zones in each of 50 African countries and undertake an integrated development scheme on each village. The goal is to make these villages self-sufficient in food and energy by utilizing local traditional skills and experience in the application of economically feasible, environmentally sound and socially acceptable methods. Desertification control will be the foundation of this methodology. In a way, the aim of this back-to-the-soil movement is — after adding appropriate technology — to return to the cultural and economic self-reliance and know-how that rural people possessed and used before much of the trickle-down kind of development dictated by outside agents was forced upon them. Top-down development often serves not to wipe out poverty but to modernize it. These pilot projects will show that environmental principles and local participation sustain good development.

The importance of working at the grassroots level, as these two plans do, was pointed out by Dr. Tolba during his speech at the Gulf University. "There is awareness among many of our farmers that in the process of pursuing a Western model of capital growth that we have to some extent forgotten our traditional knowledge of, and respect for, the environment. It is significant that when a multi-million-dollar irrigation project failed in Iraq, the local people avoided total disaster by switching to ancient drainage methods which had been passed down from generation to generation. In terms of material possessions these people were poor, but in their respect for what we nowadays refer to as a balance between people, resources, environment and development they were very rich indeed."

The plans outlined above also indicate UNEP's re-emphasis on the need for new approaches that make use of grassroots decision-making to avoid top-down development. Thus, DC/PAC will actively seek to work with many more NGOs in the future, for these are the groups in the forefront of innovative environmental planning at the village level.

These two plans, combined with UNEP's continuing policy of establishing NPACDs, represent DC/PAC's main plot for putting a timely end to desertification's current reign of terror on the African continent.

The Cairo Plan also re-affirmed the principle of "concentration," which applies to the rest of the world as much as it does to the African continent. Because of limited financial and human resources, so goes this principle, UNEP now focuses desertification-control efforts on a few countries at a time. UNEP's two main thrusts for the future will be the concentration strategy and following up the Cairo Plan.

"We are also going to try to work much more closely with the International Union for the Conservation of Nature and Natural Resources (IUCN)," says DC/PAC Programme Officer Daniel Stiles in explaining other activities. "That group is carrying out the World Conservation Strategy (WCS), a process which means establishing in each country a national conservation strategy that in many cases is similar to UNEP's NPACD. There is a lot of overlap. So it is more sensible for UNEP and IUCN to do these plans together, to send mutual missions."

Stiles explains that "many countries have so many similar plans that it is confusing." They have NPACDs; they have NCSs; they have national soils policies; they have forestry strategies through FAO: all often operate through different ministries. This example of unintegrated planning illustrates one of the major problems that UNEP and DC/PAC must solve for the future.

"Co-ordination is still a big problem," says Stiles. "There are still many people from many agencies going out and doing similar plans, and they are not working together. As a result, they duplicate efforts and waste resources."

One improvement would be to strengthen and streamline the co-ordinating capabilities of the IAWGD, whose problems have been outlined elsewhere in this booklet. Another possibility, as Stiles relates, is that many aid agencies have been considering working co-ordinating bodies into their structures. These bodies would all collaborate with each other. In addition, Stiles suggests, countries should have a central unit, as some already do, through which all development projects are funnelled. Then every country would have a unit cognizant of every project in effect within its borders.

As always, another ongoing problem for DC/PAC will be mobilizing finances for desertification projects. An international conference held in Canberra, Australia in 1986 may very well make such mobilization easier.

The International Conference on the Economics of Dryland Degradation and Rehabilitation produced technical guidelines



DC/PAC is developing pilot projects for irrigated fodder production using animal driven pumps under the Cairo Plan of Action for rehabilitating Africa's environment. (UNEP/Sarah Errington)

that DC/PAC hopes will automatically become a part of every development project: a cost-benefit analysis of dryland degradation to show how much is to be gained by rehabilitation components. The Conference was part of a two-year "Project on the Economics of Dryland Degradation and Rehabilitation" run by the Australian Government, the East-West Centre in Hawaii and UNEP. "One of the reasons identified as contributing to the meagre success in implementing the PACD," said a background paper on the project, "was the lack of information and understanding about the economic implications of successful attempts to arrest desertification, and conversely of failure to do so." The guidelines aim to correct this tendency.

The Project and its Conference have three objectives:

- to draw attention to the need for better economic assessment of dryland degradation and rehabilitation and its role in decision-making;
- to place the problem within the overall context of development planning;
- to demonstrate how the techniques of economic analysis can be used to guide the design and implementation of corrective policies, programmes, projects and land-management practices.

When a UNEP mission visits a country to start the NPACD process, it will introduce these economic guidelines, which the country can then use in formulating the priority projects it needs in its Plan. UNEP will also conduct training workshops for government staff who will be implementing the guidelines. The guidelines should go a long way toward convincing governments and donors to invest money in anti-desertification projects.

UNEP is encouraging environmental accounting in calculating the economics of dryland degradation and rehabilitation. Terrace construction can be expensive, but the savings in food production gained over many years from halting soil erosion adds up economically, socially and environmentally. (UNEP/Steve Jackson)





Another way that DC/PAC will drum up funding to finance NPACDs is through a national seminar to start the process. That is exactly what DC/PAC did as a booster for its NPACD initiative in Tunisia, and it worked like a charm (see box on the Success Story in Tunisia). Donors were invited to this forum for examining all the project proposals, and such discussions generated enough interest to attract much of the funding needed.

Actually, one of the most promising trends for DC/PAC's future is a sudden upsurge in the matching factors of awareness and funding.

"We're much more optimistic now about getting support," says Stiles. "The world community seems to be a lot more aware of desertification now than it was back in 1984 at the time of the GAP. The famine in Africa played an important role in that awareness, and UNEP had a lot to do with getting the word out through its information channels such as films, slide shows, print matter and press trips. Many countries and many international organizations are much more willing now to support desertification control programmes."

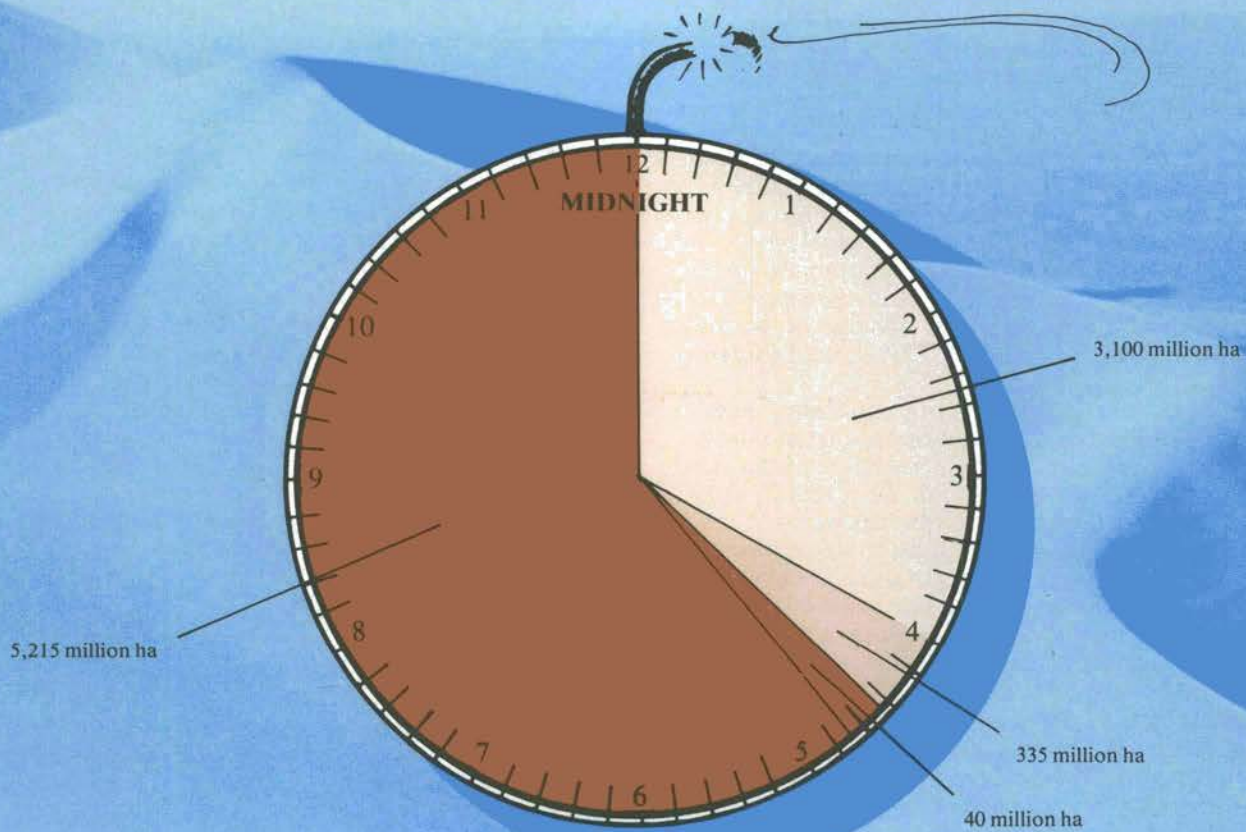
Certainly we will need all of that support and

more. The sands of dryland degradation collectively represent an hour glass pouring out with alarming speed. For some places the top of the hour glass is already empty.

It is also certain that progress to roll back the deserts must come much more quickly than in the first 10 years of the PACD. "Almost a decade down the line, where are we with this Plan?" asked Dr. Tolba during his Gulf University speech. "Nowhere is perhaps an exaggeration, but it is the word that comes to mind. And UNEP's frustrations are symptomatic of the marked lack of success the experts have had in tackling desertification. Why is so little being achieved? Supported by able scientists and engineers, proven technologies and sympathetic governments we should be well on the way to halting desertification. Why is so little being achieved?"

Dr. Tolba left that disturbing question hanging over the University audience, composed of the very people who would soon be making decisions and experimenting with scientific solutions, like the sound of dead crops crackling in the wind.

The Time Bomb of Desertification



LAND MODERATELY OR SEVERELY AFFECTED BY DESERTIFICATION
(40% of the world's productive land)



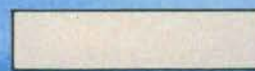
Undesertified potentially productive land



Rangeland (80% of dryland total)



Rainfed cropland (60% of dryland total)



Irrigated land (30% of dryland total)

At the rate of 27 million hectares lost a year to the desert or to zero economic productivity, in a little less than 200 years at the current rate of desertification there will not be a single, fully productive hectare of land on earth.

Rain is not the only factor that determines whether a crop is good or that land becomes degraded. Man can learn to apply existing knowledge of land and water managing techniques to ensure food production regardless of the rainfall. Good land management will also guarantee that soil remains productive for future generations. (WWF/IUCN)(UNEP)



