



# UNCCD News

A bi-monthly update on the work of the United Nations Convention to Combat Desertification (UNCCD)

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## FROM THE EXECUTIVE SECRETARY

### The human dimension: gaining ground

Sustainable land management and carbon storage in soil are vital for successfully confronting climate change. That has been our consistent message to climate negotiators. It was driven home again by UN Secretary General Ban Ki-moon’s message (see below) to the recent ninth session of the Conference of the Parties to our Convention (COP 9). Since then, the Food and Agriculture Organization (FAO) has spelled out these connections in an important new report. Our advocacy is gathering force and the evidence supporting our message is becoming harder to ignore.

These are worrying yet hopeful times for Planet Earth. We have called consistently for a sound deal at the Copenhagen climate summit, and I believe that world leaders are now closing in on a final pact. As they do so, the search for global political consensus and any subsequent home stretch of climate negotiations into 2010, if necessary, will clarify two trends that bode well for all environmental and sustainable development battles, including the one against desertification and depleted soil.

**Converging trends** The first is growing acknowledgement of the human dimension. The ultimate outcome of mitigating and adapting to climate change, beyond a better grip on man-made green-house gases (GHGs), is the improved well-being of peoples, more food security, a boost to alternative livelihoods and a fair deal for future generations. These are the goals that help drive the national action programmes (NAPs) to implement the United Nations Convention to Combat Desertification. They are also the essence of development policy as a whole.

The second trend is the emergence of a holistic approach to environmental issues, a more effective combination of social, economic and scientific dimensions. I predict that any sound deal at Copenhagen will accelerate this convergence of efforts to address emissions, biodiversity and land use in a more concerted way.

**Agreeing on indicators** The signs are already there. Climate negotiators, mostly preoccupied by GHGs and cap-and-trade concepts in the past, now face growing calls to recognize the need for “climate justice”. On the biodiversity front, the cost to society of vanishing species, whether pollinating bees or medicinal plants, is being convincingly quantified in cold cash. And now the UNCCD’s own people-centered fight against soil productivity loss in the world’s drylands is becoming more solidly grounded in science and economics.

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Executive Secretary  
**Luc Gnacadja**

A holistic approach to environmental issues is emerging – a more effective combination of social, economic and scientific dimensions

In Buenos Aires this autumn, the UNCCD's Committee on Science and Technology won COP 9's approval of a set of impact indicators to monitor and assess land degradation around the world. This break-through agreement is one of the most important achievements of the Convention in recent years.

The indicators will permit more effective target-setting, monitoring and assessment in combating land degradation and desertification. They will facilitate further synergy between the UNCCD and its two sister treaties, the United Nations Framework Convention on Climate Change (UNFCCC) and the Convention on Biological Diversity (CBD). After years of slow progress for the Convention on the elements of a solid empirical foundation for the all-important NAPs, the Buenos Aires consensus is rightly seen as the beginning of a less political, more pragmatic and more effective way of doing business.

In this spirit, I hope you enjoy the contents of this issue.



Luc Gnacadja, Executive Secretary

## SCIENCE

# Moving to measurability: COP 9 finds “historic” agreement on indicators

**For the three decades that the international community has studied the processes of desertification, contention has been rife among scientists and politicians over the fundamentals of land degradation, including whether it is occurring, where and at what rate, its scope and its relationship to productivity. Now, the log-jam has finally started to shift.**

When COP 8 in Madrid in 2007 approved the UNCCD's 10-year strategic plan and framework for the implementation of the Convention (2008-2018), it also tasked the Convention's Committee on Science and Technology (CST) to report at COP 9, two years down the line, on concrete ways to measure progress on the strategy's objectives to improve the wellbeing of humans and ecosystems, and to generate global benefits. That started an exhaustive process of research and regional consultations leading to the submission to COP 9 in Buenos Aires last September of 11 impact indicators (see box below) that outgoing CST Chair William Dar called “an historic event in

the 15-year history of the UNCCD”.

Prof. Klaus Kellner, a South African national, was elected new CST Chair by the COP 9 Plenary on 22 September and will serve until COP 10 in 2011. He is Head of Botany in the School of Environmental Sciences at North-West University in South Africa's North-West Province and an expert in vegetation dynamics, particularly in arid and semi-arid grasslands and savannas.

**Finding common language** Meanwhile, the UNCCD 1st Scientific Conference that was held 22-24 September 2009 in Buenos Aires under CST auspices saw an unprecedented gathering of about 350

scientists and policy-makers and their dialogue struck many participants as unprecedented. CST Chair Prof. Kellner told a press conference: “Politicians and scientists are starting to speak the same language. I've not seen this before. The talk now is about both bio-physical and socio-economic considerations.”

The 1st Scientific Conference was organized with the support of the Dryland Science for Development Consortium (DSD). DSD Consortium members are DesertNet International, the International Centre for Agricultural Research in the Dry Areas (ICARDA), the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), the Joint Research Centre's Institute for Environment and Sustainability of the European Commission (JRC-IES) and the United Nations University's International Network on Water, Environment and Health (UNU-INWEH).

The next UNCCD Scientific Conference will focus on the economic assessment of desertification, SLM and resilience at a special session of the CST in 2012. In the meantime, the CST will develop a system of organizing international, interdisciplinary advice and channeling it through to the Convention process.



## “Both biophysical and socio-economic”

As reported in the previous issue of UNCCD News, the 11 impact indicators to monitor and assess land degradation emerged from a lengthy international process of consultation. They are based on existing indicators from the sister Rio Conventions, Poverty Reduction Strategy Papers, the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP), the Food and Agriculture Organization (FAO) and the Global Environment Facility (GEF).

**Aligned with The Strategy** Criteria for their selection included their measurability, reliability, simplicity and applicability as well as their cost-effectiveness at various levels, and the special circumstances and needs of developing countries. The indicators are also deliberately aligned to The Strategy’s objectives of improving the well-being of affected populations and ecosystems, and generating global benefits.

The impact indicators are not exhaustive or exclusive, only an important beginning to a new era of monitoring desertification, land degradation and drought (DLDD) at both national and global levels. They will be developed gradually and put to use step by step. To start with, Parties to the UNCCD will refine and apply a minimum of two indicators for use in their reports to COP 10 in 2011 to measure progress in their respective National Action Programmes (NAPs).

The two mandatory indicators measure the proportion of the population in affected areas living above the poverty level and the status of land cover.

**“Stepping stones” to soil fertility** Reporting countries were also invited to use some or all of the remaining nine optional indicators in their reports starting in 2012. “We have started moving the Convention to measurability,” UNCCD Executive Secretary Luc Gnacadja said. “We must now swiftly address the remaining challenges of common methodologies and baselines. Our goal must be to achieve zero net land degradation so that rehabilitation, reclamation and recovery become the stepping stones towards expanding arable land.”



**Human well-being is rooted in the soil.** Photo of drought in Chaco Province, Argentina, by Wanda Lopez, ‘Best in Argentina’ Category, UNCCD Photo Contest 2009

## POLICY

### Land “should be part of the picture”

**The UNCCD can make “a critical contribution” to climate change adaptation efforts, said United Nations Secretary-General Ban Ki-moon in a special communiqué\* at COP 9 in Buenos Aires.**  
**His message in full:**

*In addressing climate change, the international community has tended, quite understandably, to focus on cutting greenhouse-gas emissions. But tackling the issue in all its complexity also requires us to go beyond mitigation, and take into account the intrinsic linkages between desertifica-*

*tion, land degradation and climate change. Three-quarters of all disasters globally are now climate-related, up from half just a decade ago, and we can expect worse. These disasters are exacerbated by desertification and land degradation.*

*There is only one way forward. We must strengthen our ability to adapt to a changing climate. Sustainable land management can make a critical contribution, through carbon sequestration, land reclamation and efforts to combat soil loss and restore vegetation. Such steps can not only strengthen resilience, but also enhance agricultural production, food*

*security and economic development.*

*Your deliberations can help lead the international community toward the paradigm shift that is required in policy making and resource allocation. When world leaders gather in Copenhagen in December, the land agenda – and most of all the people who rely on the land for their jobs, sustenance and very survival – should be part of the picture.*

\* The High-level Segment in Buenos Aires was attended by over 140 ministers. A standard feature of the Conference of the Parties (COP), it allows senior-level government representatives to share their concerns, provide impetus to the Convention and help shape strategic policy directions.



## A call for Convention reform

**An informal group of desertification experts on 29 September called on assembled ministers from the UNCCD's 193 Parties to widen the UNCCD's reach, sparking debate among participants at COP 9 in Buenos Aires. Their paper, *Revitalizing the UNCCD\**, was tabled for discussion during the second Round Table of the High-level Segment on 29 September.**

While not necessarily reflecting the official positions of their respective agencies, the authors present a number of new concepts and ideas, some of which highlight abiding differences between Parties over the Convention's proper scope and mandate.

The authors offer a reasoned discussion of land degradation as a global problem that grows from a variety of causes, including unsustainable production and consumption occurring in countries far beyond the drylands. They call for more rigorous biophysical and socio-economic scientific arguments to properly reflect issues and options and to support decision-making.

Given growing demographic and economic pressures on land, they argue, the international community should properly assess the land's material value as a finite source of goods and services.

To accommodate the growing significance of these issues, the authors propose a significant reshaping of the UNCCD.

**"An expanded global mandate"** Dr Zafar Adeel, director of the United Nations University's International Network on Water, Environment and Health (UNU-INWEH) and one of the paper's seven authors, emphasized this point in his keynote speech at COP 9,

stating that today's problems and opportunities demand a wider mandate for the Convention. Broadening the UNCCD's scope to explicitly include development, he said, would better capture related issues, including food security and environmentally-induced migration.

"The present scope of the UNCCD is not sufficient to meet the global challenges we face," Dr Adeel told the session. "[The Convention] needs an expanded global mandate. Ignoring the problem beyond the drylands has compromised the Convention's credibility."

\*Authors: Zafar Adeel, David Dent, Philip Dobie, Christian Mersmann, Maryam Niamir-Fuller, Simone Quatrini and Youba Sokona



Erfried Malle's depiction of a family collecting water in the Afar region, north-eastern Ethiopia, was one of the entrants in UNCCD's recent Second International Photo Contest



### Movie sneak preview

**Scheduled for a world premiere screening at the Copenhagen climate summit, Beijing-based John D. Liu's "Hope in a changing climate" offers powerful evidence from China, Ethiopia and Rwanda that degraded land can be restored.**

Watch 22-minute streaming video: <http://hopeinachangingclimate.org/watch-the-film/>

## “New dynamics underway” in the global fight against desertification

**Professor Uriel Safriel, a teacher of ecosystem ecology and the ecology of global climate change, is one of the world's foremost experts on drylands. He is the UNCCD's National Focal Point for Israel and a staff member of the Department of Evolution, Systematics and Ecology of the Hebrew University of Jerusalem. He also serves as Head of the Center for Environmental Conventions of the Jacob Blaustein Institutes of Desert Research of Ben-Gurion University of the Negev, and chair of the Global Network of Drylands Research Institutes. Prof. Safriel was one of the authors of the White Papers that fed debate at the recent UNCCD 1st Scientific Conference in Buenos Aires, where he spoke to Timothy Nater.**

### **On why the UNCCD has taken a long time to get off the ground**

United Nations affairs can only effectively focus on global issues. While countries can tackle a lot of pressing problems bilaterally or multilaterally, global matters are a true United Nations domain. For example, the United Nations Protocol on the Ozone Layer addresses a problem that was created by every country on earth, and from which all countries could suffer. The UNFCCC, as the first of three conventions to emerge from the Rio process, was also accepted from the start as a global convention, addressing a universally agreed-upon problem of global dimensions. For its part, the Convention of Biological Diversity had a rather more difficult time. Why, for example, should Macedonia care about deforestation in the Amazon? The answers are both economic and cultural: certain plants in the Amazon have medical utility for the entire world, while animal and plant species are also part of world heritage and should be preserved for all humanity. Thus, the Convention on

Biological Diversity, too, has global legitimacy.

As for the UNCCD, from the start many stakeholders doubted that desertification was truly a global issue. The UNCCD's problems started there. The early belief was that even though deserts would inexorably advance, at least industrialized countries would be unaffected. Of course, by the time the Rio process started, we had come to realize that deserts don't continually advance but actually pulsate in time with year-to-year fluctuations in rainfall.

Two elements continue to support this view. One is that the Convention's only legitimate areas of anti-desertification operations are the world's drylands, so although the drylands make up about 40% of the world's terrestrial surface, they are largely concentrated in Africa and Central Asia and therefore still don't qualify for being of a global concern. The other argument is in the UNCCD's full title, “United Nations Convention to Combat Desertification in Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa”. For some, that's proof enough that

it's essentially an African problem, and that the Africans should therefore cope with it through bilateral or multilateral agreements between themselves, or by international development aid, again through bilateral agreements.

### **On the search for consensus**

The disrespect of scientists for the Convention also hasn't helped. There were disputes about the term “desertification”, which some claimed was the same thing as “land degradation”. Some would say the Convention should focus only on land degradation in drylands, whereas others would assert that land degradation is a continuum that can't be confined to certain areas but happens everywhere in the world.

Desertification as defined in the Convention implies that it's not a result of climate fluctuations so much as a result of human action, but the Convention does not itself clarify sufficiently the important distinction between productivity loss, which is due to human mismanagement, and climatic fluctuations. There's been very wide misuse of the term ‘desertification’ and if you're not sure what it is, you can't monitor, assess, measure and combat it.

### **On the limits of a purely technical approach to desertification**

The Millennium Ecosystem Assessment makes an important distinction between drylands and other types of lands under human use. It also distinguishes between, on the one hand, the direct drivers of degradation like irrigation leading to salinization or overgrazing and deforestation leading to soil erosion, and, on the other, the underlying, indirect drivers such as social,



“From the start, many stakeholders doubted that desertification was truly a global issue.”

## The behaviour of land users drives the persistent loss of productivity

economic or policy-related habits and practices that lead to over-irrigation and overgrazing, for example, and thus to non-sustainable land management.

The MA defined desertification as primarily a persistent decline in the biological productivity of dryland soils. The MA also made a distinction between the direct drivers of desertification, over-cultivation and over-grazing, and the more important yet indirect drivers, like population growth and inappropriate policies. These are the social, economic and policy factors behind the direct drivers, resulting in land degradation in the drylands, namely desertification.

‘Persistent’ is a key word in the definition of desertification, because persistent trends mark a departure from the natural variability of drylands, where productivity is constrained by dependence on rainfall. The productivity of non-desertified dryland is restored once drought ends and rainfall returns. But the productivity of desertified land remains below normal, even when the drought has ended.

It’s now understood that one has to factor out the natural, year-to-year climatic fluctuations that in turn mean fluctuations in dryland productivity, in order to home in on the behaviour of land users. It’s this behaviour that drives the persistent loss of

productivity. So we have to put less emphasis than we have so far on the ‘T’ part of the CST (Committee on Science and Technology), and more on the ‘S’, especially the social sciences.

### On what happens next

There are some new dynamics underway in our understanding of desertification. They will lead either to chaos and collapse or to a new road forward. What got underway in Buenos Aires is not a breakthrough yet, but marks good, steady unidirectional progress. We’re making a new template because the efficacy of the CST in its first decade was not high. Now we have a set of clear strategic and operational objectives.

The process could work along the following lines. From now on, the National Action Programmes (NAPs) will have to state which of the four strategic objectives of the UNCCD’s 10-Year Strategy they want to incorporate, and then select the relevant indicators (see above story). After that, countries will have to identify their needs in science and technology and then address the CST, which in turn will create ad hoc panels of experts to address the problems. Finally, the panels will feed out their recommendations to the Committee for the Review of the Implementation of the Convention (CRIC), in which affected countries can work out

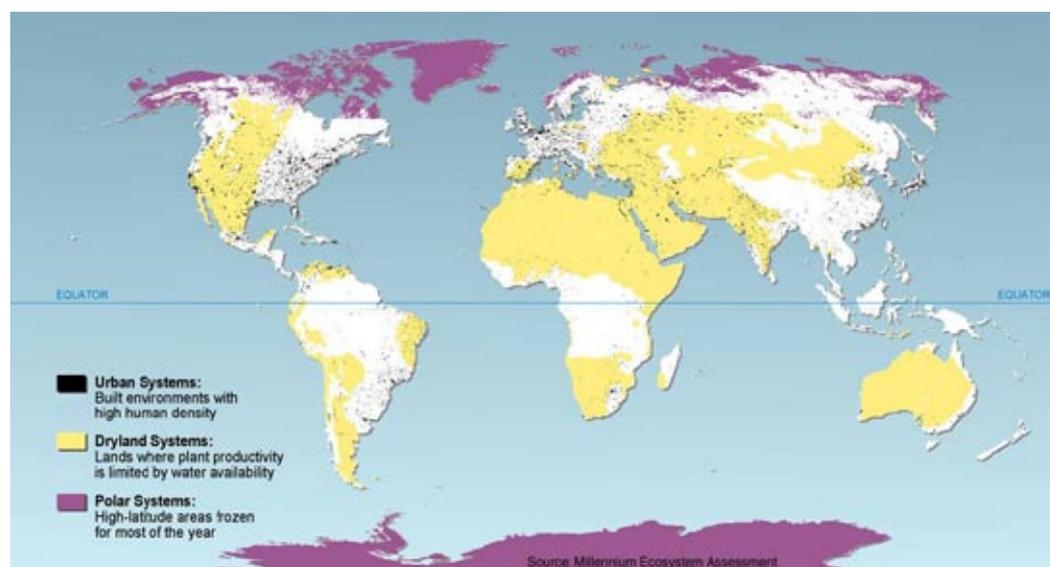
their NAP alignment with donors. Sometimes, of course, a country will not be able to clearly identify its needs, in which case outside experts may assist that country in identifying them. All this sounds good, except that the interactions involved are to be executed through diplomatic channels, which would slow down the work on the ground.

### On remaining challenges

Our technological knowledge base regarding desertification is robust. For example, we know precisely what drives soil salinization. But we’re still weak in translating that scientific knowledge into policy, since we’re still missing the social aspects leading to desertification. To adopt a proper technological innovation, the policy-maker needs first to receive answers from the land users to questions like, “Why did you treat your land the way you did?” This means that policy-making leading to combating desertification successfully requires knowledge of regional, national and local politics and socio-economic conditions. That’s much harder to obtain than technological knowledge.

It is only when one can pinpoint the location of a land management that fixing it is feasible. However, often a country’s social and political structure stand in the way. For example, local or foreign

According to the Millennium Ecosystems Assessment (MA), drylands systems cover 41% of Earth’s land surface. More than 2 billion people inhabit them, 90% in developing countries. The world’s drylands from 1990 to 2000 saw population growth rates of about 19%, the highest in the world.



experts can easily find that the technological solution for water shortage and soil salinization in a certain area is a drip irrigation system. But water shortage and soil salinization are not the core of the problem. Rather, the problem is that governance practices or socio-economic factors prevent the implementation of the right technological solution. Once these non-technical problems are precisely identified, the problem of land degradation can be fixed.

#### On scientists and policy-making

Neither the IPCC [Intergovernmental Panel on Climate Change] nor the MA is a research project. That is, they don't generate new science, they only review and assess existing science. Assessment thus means two things: highlighting policy-relevant scientific findings and carefully avoiding being prescriptive. Scientists should not be the ones to tell policy makers what to do. They should only explain to policy makers, in ways they

can comprehend, that if you do A, then you get X, and if you do B you get Y. Furthermore, policy makers are the ones who must make sound land management policies. If they listened only to us natural scientists, they wouldn't get the whole picture.

“We're making a new template because the efficacy of the CST in its first decade was not high. Now we have a set of clear strategic and operational objectives.”

## PRACTICE

### New global mapping satellite in orbit

**The night-time launch, on 2 November, of the Soil Moisture and Ocean Salinity (SMOS) Earth Explorer satellite from Plesetsk in northern Russia marked a first in remote observation technology and another advance in the fight against desertification.**

Conducted by the European Space Agency (ESA), the SMOS mission will measure moisture in the Earth's landmasses and salinity in the oceans. Through systematic mapping of the entire surface of the globe, SMOS is expected to greatly enhance understanding of how these two variables affect Earth's water cycle.

#### Unprecedented sensitivity

ESA says the spacecraft's chief asset is a “completely new type of instrument” dubbed MIRAS (for ‘Microwave Imaging Radiometer using Aperture Synthesis’), consisting of a

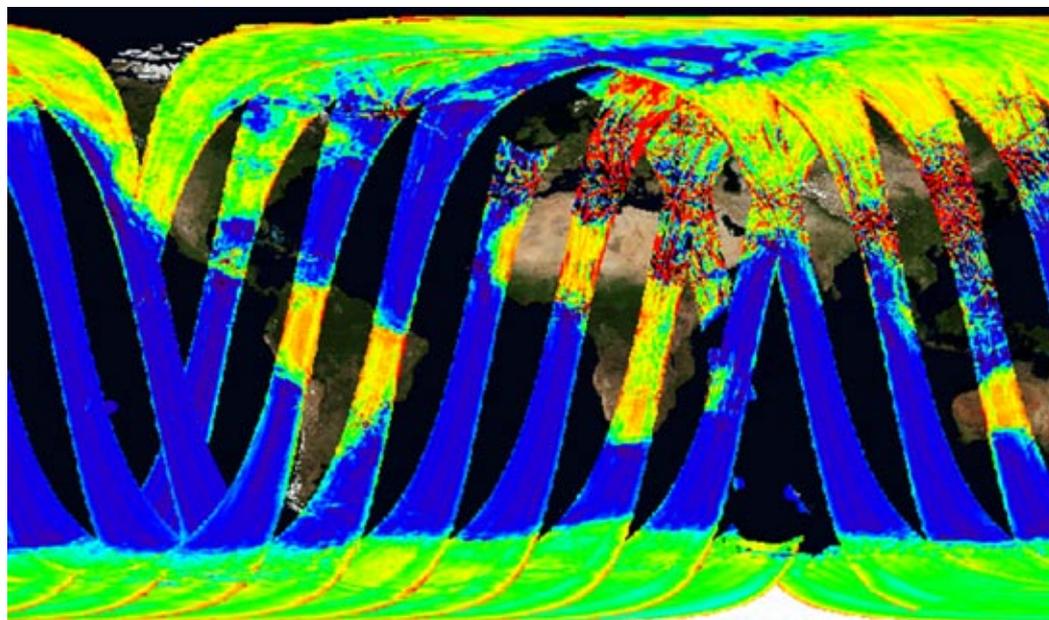
central structure and three arms deployed into a star shape and studded with 69 antenna-receiver elements. Each of the antenna-receivers picks up radiation from Earth's surface within the ‘L-band’, around a frequency of 1.4 gigahertz. This frequency provides the greatest sensitivity to variations in the moisture content of soil and the salinity of ocean surface waters, and is little affected by weather, atmosphere and vegetation cover.

“Following the switch-on, MIRAS is working beautifully well with all key subsystems ...

in perfect functioning condition,” said ESA's Manuel Martin-Neira, SMOS Instrument Principal Engineer.

Success for SMOS will mean improved weather and climate models and practical applications in agriculture and sustainable land management. Orbiting 758 kilometers above the earth, the spacecraft is the second in ESA's Earth explorer series. Expectations are for a flood of fresh data, enabling scientists on the ground to produce detailed global maps of soil moisture every three days.

An image of the first data from ESA's SMOS mission. Part of the initial functional verification test, it shows non-calibrated temperature values from blue (low) to red (high). After instrument calibration and refinement of further downlinked data, ESA will publish detailed maps on a continuous basis



## Storm warning

**The few commuters venturing out shortly after sunrise saw this eerie scene at Chatswood Station, Sydney, Australia, on 23 September 2009. High winds had whipped up dust far to the west into a massive cloud that sifted into Sydney overnight, shrouding the nation's largest city plus Brisbane to the north and a 600 kilometer-long stretch of Australia's south-eastern coast in orange-red gloom.**

It was the worst dust storm to hit south-east Australia since 1942. Air and road traffic ground to a stop, workers stayed home, schools were closed, and the cost in absenteeism, lost economic productivity and the clean-up was put at tens of millions of Australian dollars.

Dust storms increasingly have man-made causes. According to the United Nations Environment Programme (UNEP), these include deforestation, overgrazing and degraded rangelands, exhausted farm fields, salinized irrigated soil, depleted groundwater resources and the shrinking of inland bodies of water like Lake Chad and the Aral Sea.

Only one day after Sydney's "orange dawn," speakers at the UNCCD's COP 9 in Buenos Aires warned of an increased frequency of drought and dust storms, especially in the dryland regions of the world. According to Yang Youlin of the UNCCD Asia Regional Coordination Unit in Bangkok, "[The growth of] land degradation and sand encroachment in China expanded to 3,436 square kilometers per year during the late 1990s and early 2000s."

**Dust-borne diseases?** Other COP 9 speakers cited reports that soil particles suspended in the atmosphere could worsen global warming, and that meningitis and "valley fever" (coccidioidomycosis), a fungal infection of the lungs, might be linked to wind-blown sand and dust. Also at COP 9, the World Meteorological Organization (WMO) highlighted the work of its Sand and Dust Storm Warning Advisory and Assessment System to provide affected countries with timely and reliable forecasts.

In the recent case in Australia, a complex interplay of flooding, unprecedented drought and an unusual cold front – not man-made degradation – seemed to be the cause, and 24 hours later the cloud had moved off to sea.

However, climatologists agree that dust storms, already prevalent in Northeast Asia, the Middle East, the Sahara and Sahel, will also become more frequent in industrialized countries. Economist and Nobel laureate Paul Krugman wrote in the *New York Times* in late September: "So if you live in, say, Los Angeles, and liked those pictures of choking dust in Sydney, Australia, last week, no need to travel. They'll be coming your way in the not-too-distant future."

**More study needed** Gloomy verdicts notwithstanding, the phenomenon needs research and nuanced appraisal. For example, dust storms can support the marine food chain and might even have a palliative effect on global warming.

Dr Christel Hassler, a chemical and biological oceanographer from the Plant Functional Biology and Climate Change Cluster at the University of Technology Sydney (UTS), told the Australian Science Media Centre: "Dust is known to bring essential nutrients, such as iron, required for the growth of marine algae, so [the recent dust storm in Australia] will probably have significant short-term impact on our coastal waters and the Tasman Sea. An important bloom of algae might be the result."

"This is important for our fisheries," Dr Hassler continued, "as algae are the base of the marine food-web, but also important to our climate. Algae fix up to 40% of the global atmospheric carbon. This event nicely illustrates the tight bond between natural processes amongst terrestrial, atmospheric and marine environments."



The January-February 2010 issue of UNCCD News will feature a special report on dust and sand storms.

## Feet firmly in the sand

**Dr Mary Seely was a keynote speaker at the UNCCD 1st Scientific Conference in Buenos Aires. For more than 40 years, her home has been Namibia. By appointment of that country's president, she has served as a member of the country's National Planning Commission and the Vision 2030 Committee. But politics are not her thing, as she would say. Instead, the U.S.-born biologist has devoted her career to the study of one of Africa's most arid yet fascinating environments, the Namib Desert.**

Mary Seely was born and raised in California, the start of a lasting love affair with the great outdoors. "I loved hiking in the Sierra Nevada mountains," she recalls. "I always hoped to avoid working in an office. My dream as a teenager was to spend a summer in one of those fire-towers in the woods."

The path first chosen came to an abrupt stop, however. Attending university in what she calls "the pre-Jane Goodall era," Mary Seely ran smack into early-1960s male prejudice. "I wanted a degree in forestry but they wouldn't let me, because I was a female," she recalls. Had she enrolled in forestry classes at the University of California at Davis, she says, the school would have barred her from the field course, thus preventing her from completing the degree. Sidestepping this gender barrier, she then went for a degree in physical science to prepare for teaching "before realizing it wasn't for me."

### "One-up on the men"

The setbacks only toughened her. In a third attempt to make her mark, she decided "to get one-up on the men" by completing a PhD in biochemistry at Davis, following up with post-doctoral research on biochemistry applications in the field. That move, combined with a thirst for science and adventure, brought her to the south-west African Namib Desert in 1967, and "it

*Onymacris bicolor*, a Namib Desert variety of the Tenebrio beetle, collects moisture as it faces into early-morning fog. Its partly white exoskeleton helps reduce heat absorption. Using a portable gel electrophoresis apparatus, Dr Seely made the body fluids of this unusual variety the subject of her post-doctoral study in 1967.



changed my life," she says.

Dr Seely's chosen post-doctoral research dealt with a puzzling aspect of animal coloration: an unusual local variety of the normally black or brown Tenebrio beetle was white (see photo). "The coast of the Namib has the only known white species of Tenebrio in the world," she says. "Why?" One of a group of desert ecosystem researchers, Dr Seely spent several months working on the answer, often camping under starlight.

In the Namib, one of the world's oldest true deserts, Dr Seely also found a wonderland of fog-drinking insects, sand-diving lizards, towering dunes and ephemeral rivers. She encountered the Inara\* melon and the indigenous Topnaar, a people with prehistoric roots in the area. She found aridity and floods, human settlement and bush encroachment, pastoralists and hunter-gatherers, depleted soil and the human struggle for sustainability. Best of all, Mary Seely discovered an open-air classroom for life-long environmental learning.

### The Gobabeb years

Dr Seely was offered a job with South Africa's Transvaal Museum -- not in Pretoria, the museum's seat, but back out in the Namib desert as head of the desert research station where she had studied the white Tenebrio. Under her leadership, over the next 20 years staff went from 5 to 25 full-time employees and the outpost grew from remote outpost into the internationally recognized Gobabeb Training and Research Centre. "David Attenborough and other film people from all over the world came to see us," she says.

A can-do, entrepreneurial streak served her well. "Up until Namibian independence from South Africa in 1990, I worked with all sorts of scientists doing everything from meteorology, climatology, archaeology and anthropology, as well as animal and plant physiology," Dr Seely smiles. "I ended up becoming a generalist."

For colleagues, she is more than that. Internationally, Dr Seely is a recognized proponent of what she calls "common-sense science" and

“Mary is one of Namibia’s leading scientists. She raised this country’s environment up into a whole new level of national awareness.”

Joh Henschel, Director, Gobabeb Training and Research Centre

simply-designed environmental education. In Namibia, her influence is indelible. Joh Henschel, once a student of Dr Seely’s and now director of the Gobabeb Training and Research Centre himself, describes a rare combination of dogged visionary, patient teacher and well-connected lobbyist. “Mary is one of Namibia’s leading scientists,” he told UNCCD News. “She raised this country’s environment up into a whole new level of national awareness.”

### Independence puts funding into question

But there were hurdles in the way. Until 1990, Dr Seely had stayed in the desert, building up relations with people in other parts of the country and establishing the Gobabeb Centre’s reputation. “Then Namibian independence came and the lid was taken off,” she says. “Here suddenly was this opportunity to work throughout the country. But independence also meant that South

Africa no longer provided funding for Gobabeb, so suddenly it was a whole different kettle of fish.”

The “generalist” Dr Seely swung into action, founding the Desert Research Foundation of Namibia (DRFN) in the Namibian capital Windhoek and deploying management and money-raising skills to keep the Gobabeb Centre growing and research projects funded. Backers like Sweden’s SIDA, Germany’s GTZ, the Norwegian government and other European bilateral donors stepped in with financial support to the DRFN as it developed its own income streams, including a commercial consulting group, the Environmental Evaluation Associates of Namibia.

**The call remains** Almost 40 years after first arriving in Namibia, Dr Seely stepped aside as DRFN executive director in 2006. Today, she is an active fundraiser and continues to enjoy the grind of

core research. She is a member of the DRFN board of trustees, speaks at environmental conferences in far-flung places and keeps a house in a tidy street in the centre of Windhoek. But the Namib Desert still calls, and she returns to Gobabeb frequently. At sunset, she can be found sitting off on a dune, sometimes with staff and students, her feet in the sand.

A poet might lurk beneath the dispassionate, low-key exterior. “For me, the call of the desert is the flowing of dreams and sinuous dunes,” she says. “It sounds like conversations with enthusiastic people who see the potential for interesting discoveries and for sharing them. It sounds like adventurers seeking the key to sustainability, endless opportunities to learn, to experience and to grow.”

\* The exclamation mark (!) is an accepted phonetic symbol for one of the several unique clicking sounds in tribal languages of the region

## A half-century of desert ecology



Science has progressed since Mary Seely first came to the remote Gobabeb station in 1967. Back then, whether meteorologist, botanist or entomologist, researchers compiled data and records working strictly within their separate domains. Today, the Gobabeb Training and Research Centre’s emphasis on integrative, interdisciplinary learning has garnered international recognition.

According to the centre’s website, the goal is “human and environmental development through the sustainable utilisation of natural resources” and its operations have spread beyond Namibia to the arid lands of the some of the other 14 member-countries of the Southern African Development Community (SADC). Since 1998, Gobabeb has served as a SADC Centre of Excellence for research, training and networking to support the environmental conventions of the United Nations, particularly the UNCCD.

Located near Walvis Bay inside the national Namib Naukluft Park, the Gobabeb Centre this September celebrated 50 years of existence. For the last decade, the Ministry of Environment and Tourism and the Desert Research Foundation of Namibia (DRFN) have run it as a partnership. To generate income, the Centre, like the DRFN, is increasingly project-driven. Scientists and researchers accommodated at Gobabeb now pay fees. And after lengthy negotiations, in February 2009 the Centre won an official eco-tourism concession to supplement its income.

Dune near Gobabeb  
Training and Research  
Centre, Walvis Bay, Namib  
Desert. Some sand dunes  
here top 300 metres

## Desertification's cause is "poor management by humans"

**Dr Mary Seely's many contributions to science include work on ways to communicate science more effectively. Samples of her thinking and practice:**

"For me, it's always been about trying to explain the value of the research, and doing so in a way that the information is effectively conveyed, fully shared, properly interpreted and applied."

**"The common denominator of desertification around the world is poor management by humans. Half of Namibia's population live in ephemeral wetlands that take up 10% of the country's territory. These lands are dry one year and flooded the next, and it's not a simple thing to convey the loss of productivity that comes when a growing number of people try to take advantage of finite resources. We have drought relief every single year in Namibia, but we shouldn't call it drought relief. It's food for people who don't have any, and we should call it relief for mismanagement. We need to clarify our concepts.**

**"My work in knowledge management was a reaction to the question, 'What's the use of all this science, and who cares about the research, when people are losing their livelihoods?' For me, it's always been about trying to explain the value of the research, and doing so in a way that the information is effectively conveyed, fully shared, properly interpreted and applied.**

**"Managing knowledge in a hard-to-define field like desertification means blending the historical and social perspective into the scientific dimension and then interpreting it all for children in schools as well as decision makers in parliament and the general public. And it means being opportunistic. Whenever a new thing comes into the public eye, like a drought, we have to explain what's happened and why.**

**"Scientists working on development issues have to ensure other people, whether politicians, investors, taxpayers or even their own colleagues from other disciplines, can understand what they're doing and why. Illustrating impact and outcomes, rather than just the process, is something you can do using fairly simple terminology and simple graphics, even if there's a tremendous amount of science behind it.**

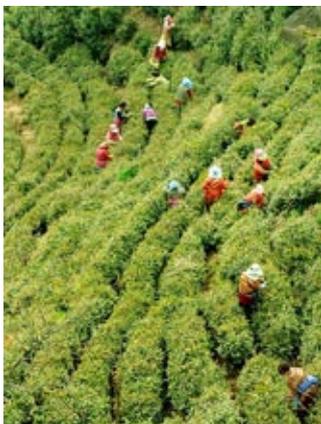
**"How does the farmer on the ground in Namibia or Zimbabwe benefit from a drought early warning system? He needs a boundary organization, essentially an interface, like our DRFN, that permits information and knowledge to pass between different groups and levels. This September the Namibian government asked me to help set up an integrated water resource plan. The group I joined is another boundary organization, putting government information into words that local water managers can understand and then taking their feedback back to government."**

## Korea to host next COP

**The Parties to the UNCCD have gratefully accepted a bid by the Republic of Korea to host COP 10 in 2011. The Changwon Exhibition Convention Centre in the south-eastern province of South Gyeongsang will be the likely venue.**

**The Seoul government is planting one billion trees in desertified areas of the country and building a partnership with Mongolia and China. The plan is to arrest regional desert encroachment by expanding forests and helping local communities return to their abandoned lands.**

**Korea became the 158th Party to the Convention in August 1999.**



Tea pickers, Handong, South Gyeongsang Province.  
(Photo: The Chosun Ilbo)

## Browsing

### Mitigating climate change through food and land use

Capturing carbon in the soil through agricultural and land use practices can reduce atmospheric greenhouse gases and mitigate climate change. Ecoagricultural Partners and Worldwatch Institute; 48 pages, 1.2 Mb. [www.ecoagriculture.org/publication\\_details.php?publicationID=240](http://www.ecoagriculture.org/publication_details.php?publicationID=240)



### War against hunger, global warming can be won on farmlands

The world's farmlands can be the front line for the battle to feed the mounting global population and fight global warming, according to a new report by the United Nations Food and Agriculture Organization (FAO). [www.fao.org/news/story/en/item/36894/icode/](http://www.fao.org/news/story/en/item/36894/icode/)

### Harmonizing and standardizing global land cover observations

A new report by the Global Terrestrial Observing System (GTOS) of the Food and Agriculture Organisation (FAO) sums up achievements, assumptions, suggestions, available observations and datasets on how to observe land cover as an essential climatic variable (ECV). [www.fao.org/gtos/ECV-To9.html](http://www.fao.org/gtos/ECV-To9.html)

### Nitrogen loss hurts desert ecosystems

New research in the Mojave Desert, USA, suggests rising temperatures could diminish vital desert plant life. See 'Abiotic Gas Formation Drives Nitrogen Loss from a Desert Ecosystem', *Science*, Vol. 326. [www.sciencemag.org/cgi/content/abstract/326/5954/837?rss=1](http://www.sciencemag.org/cgi/content/abstract/326/5954/837?rss=1)

### "Carbon footprint" only part of the story

The Global Footprint Network's Ecological Footprint is one of the fullest measures of humanity's demand on nature. How much land and water area does a human population require, using prevailing technology, to produce the resources it consumes and to absorb its wastes?

Download PDF: [www.footprintnetwork.org/images/uploads/AfricaFactbook\\_2009.pdf](http://www.footprintnetwork.org/images/uploads/AfricaFactbook_2009.pdf)

### Cowboys of the world, unite!

Joining forces with herders across the planet, from the nomads of Mongolia to the gauchos of Argentina, the Nature Conservancy is hoping to prove the world's grasslands can be used sustainably. Slideshow with audio: [www.nature.org/popups/features/art29204.html](http://www.nature.org/popups/features/art29204.html)

## ABOUT THE UNCCD

Developed as a result of the Rio Summit, the United Nations Convention to Combat Desertification (UNCCD) is a unique instrument that has brought attention to land degradation to some of the most vulnerable people and ecosystems in the world. The UNCCD benefits from the largest membership of the three Rio Conventions and is increasingly recognized as an instrument that can make an important contribution to the achievement of sustainable development and poverty reduction.

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## UNCCD NEWS

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After several years in the anti-poverty movement, I came to see how the struggle against poverty and the struggle to reverse catastrophic climate change are two sides of the same coin. All our different struggles are linked together." **Kumi Naidoo**, International Executive Director, Greenpeace