

## DESERTIFICATION

# African nations take UN to task

*Countries urge higher priority for drought research.*

BY T. V. PADMA

Scientists in African countries are asking the United Nations to help them better identify — and prepare for — drought. Delegates from the continent made the call as the UN Convention to Combat Desertification (UNCCD) concluded its two-week annual meeting, in New Delhi.

African nations are concerned that, 25 years after the convention was signed, there is no consensus among researchers on a precise definition for drought beyond “an abnormal deficiency of water”.

A review of the drought literature published in July found varying definitions, from reduced precipitation to soil erosion (I. J. Slette *et al. Glob. Change Biol.* **25**, 3193–3200; 2019).

But the UN estimates that around 40% of the world's population is affected by water scarcity and that, by 2030, 700 million people will have been forced to leave their homes because of drought. In 2017, some 20 million people in Africa and the Middle East were on the brink of starvation as a result of drought.

Barron Joseph Orr, UNCCD's lead scientist, told the meeting that the secretariat is developing three measures that countries could use to identify drought risk. The first is an assessment of drought hazard that calculates what proportion of a given land area is affected by drought; the second tracks the proportion of people exposed to drought. The third — known as a drought vulnerability indicator — tracks the degree to which communities and ecosystems are at risk from drought.

Stephen Muwaya, an ecologist with Uganda's agriculture ministry, questions the indicators' accuracy. The drought vulnerability indicator, for example, relies on data about the social, economic, environmental and physical causes of drought. But many developing countries do not measure these data systematically, he says.

Ibrahim Thiaw, who heads the UNCCD secretariat, said that 12 million hectares of land becomes degraded every year. Reversing this will require US\$450 billion annually. Between 2017 and 2019, UN member states spent \$6.4 billion on this problem, according to the UN's Global Environment Facility.

“We have woken up to the fact that we will see more frequent and severe droughts, a phenomenon that will be exacerbated by climate change,” Thiaw said. ■



Marine biologist Emma Camp sampling coral.

ROLEY/FRANCK GAZZOLA  
don't care that the world can go on without people, but I do care that I'm incurring debt on my children that I can never repay," he laments.

Witnessing the Great Barrier Reef “go into meltdown in the space of a week” in early 2016 was a major shock for David Suggett, a coral physiologist at the University of Technology Sydney in Australia. “Nothing can prepare you for seeing it play out in real time,” he says.

Suggett says that he finds it difficult to set aside his emotions about the reef's condition when talking to the public. He worries that if he shows his feelings, then people will accuse him of being biased. “It's very challenging for researchers to maintain the appearance of being objective while showing that they care about the ecosystems they're working on,” Suggett says. He thinks a lack of support networks for scientists struggling with the emotional effects of their work could also lead to feelings of isolation.

For Selina Ward, who studies coral reproduction at the University of Queensland, communicating her research findings to the public adds to her sense of despair. Her work on the reef during the past 30 years has shown that changes in ocean temperature have severely affected the ability of coral larvae to become part of larger reefs. “I try to be positive, but it's a really miserable story,” she says.

## COPING STRATEGIES

Recognizing how ecosystem decline and climate-related events can affect mental health is important, says Neville Ellis, a social scientist at the University of Western Australia in Perth. He and Ashlee Cunsolo, who studies environmental change and health at Memorial University of Newfoundland in St John's,

Canada, wrote a commentary last year that introduced the idea of ecological grief as an emotional side effect of environmental degradation (A. Cunsolo and N. R. Ellis *Nature Clim. Change* **8**, 275–281; 2018).

They found that people could mourn the disappearance or degradation of a species or landscape and the future losses of an ecosystem.

## EMOTIONAL RISK

Ellis notes that research such as Barnes's highlights the emotional vulnerability of scientists who work at the forefront of an ecological crisis. “By recognizing that such risks exist, research teams can be better prepared to help colleagues that may be suffering from distress,” he says.

More people will be exposed to ecological loss as climate change intensifies, and researchers need a better understanding of how scientists and the public can maintain their well-being in the face of these challenges, says Ellis.

Some scientists have developed their own strategies to cope with the stress and anxiety of their work. Emma Camp, a coral biologist at the University of Technology Sydney, tries to channel her sadness about the diminishing coral reefs into action, such as restoring damaged reefs. “I can either give up when I feel upset, or use those emotions to motivate me and find better solutions.”

Getting involved in side projects can also facilitate a healthier mindset, says Ward. She's started investigating the reproductive patterns of sea hares, a group of molluscs that are more resilient to increasing ocean temperatures than are corals. “It takes my mind off the bad news,” she says. ■