PRESSURE POINT

Let Deserts Be

Farouk El-Baz

Few terms in the lexicon of the Earth sciences are as misused as 'desertification' and scientists are partly to blame.

There is a whiff of moral judgment about 'desertification'. Many commentators use it, not just to describe a natural ecological phenomenon, but also to imply that the 1 billion living in the affected regions, which cover 40% of the Earth's land mass, are somehow responsible for the deterioration of their environment. They contend that the land has become desert because people have cut down trees for firewood and have allowed their animals to overgraze.

How did the term desertification, which originally came from France, wind up being applied in this way? In 1949, André Aubréville, a renowned scientist, published his research findings on the African rainforest in *Climats Forêt et Désertification*. He noted that part of the rainforest had deteriorated by harvesting trees and that if the trend continued, the forest would become a desert. For Aubréville and others, desertification simply meant transforming a forest into barren land.

In 1977, desertification became associated with the semi-arid belt of the Sahel in North Africa, after 300 geographers, botanists and social scientists attending a United Nations (UN) Conference on Desertification in Nairobi, Kenya, delivered a harsh verdict on the state of the region. Unfortunately, this group of experts did not include geologists, who could have clarified how desert features form and change over time. Instead, the conference delivered a sense of emergency and a resounding indictment of the practices of local people.

Supporters of the theory that people make deserts through bad practices or ignorance contend that the problem can be fixed by expert knowledge and advanced technology. What are needed, they say, are deeper wells, better seeds, and more sophisticated and effective planting methods, which can best be provided by international agencies and experts.

This simplistic equation overlooks three variables. First, water scarcity due to droughts, not human activity, is the main cause of land degradation in dry lands. Second, indigenous knowledge can be essential to sustainable development. Third, development schemes designed in world capitals and global power centres might not be applicable to dry regions or, worse, might prove to be more harmful than local practices over the long term.

Mike Hulme, founding director of the Tyndall Centre for Climate Change Research at the University of East Anglia, UK, has recently documented the role of droughts in the semi-arid Sahel in a study sponsored by the US Department of Energy. Drawing on a wealth of meteorological data, Hulme shows that the Sahel has received substantially less rain during the past four decades than in the period from 1900 to 1965. The data also confirm the long-held belief that the Sahel experiences a 7-year cycle of alternating wet and dry periods.

Geological and archaeological evidence also indicates that today's dry lands often experienced much wetter climates in the past. Alternating cycles of dryness and plentiful rainfall persisted during the past 0.5 million years. Long-term wet climates left indelible marks on the terrain. The presence of rivers and streams led to numerous inland lakes that are now dry and sand-covered. The sand that characterizes deserts today resulted from erosion by surface water. Some of the water, moreover, seeped into the substrate to be stored as groundwater.

Droughts reduce the land's productivity for this reason: a shortage of surface water deprives plants of this essential resource.

Nomadic peoples have developed unique ways of dealing with water shortages that make their lives one continuous journey. If a spot of land is not as fertile as they had hoped, or if it loses its fertility due to declining levels of rainfall, they move on to more productive pastures. When water levels in wells drop, they trek to where they can tap better aquifers. This wisdom helps to keep nomads alive and the land viable.

When local people contribute to land degradation it is because they have been encouraged, or even forced, to remain in one place as a result of aid projects or official 'settlement plans'. Such schemes are generally based on the naive or politically motivated notion that keeping nomadic peoples from migrating helps to control them. In dry lands, the opposite is true: when nomadic populations are forced to settle with their herds, the land can no longer support their numbers and degradation begins. Numerous examples abound — in the Sahel from Timbuktu to Darfur, in the Rajasthan of India and in northwest China.

Relief agencies would do better to help nomads tap precious water supplies through better site selection and distribution of wells. This would allow them to carry on with their lifestyle of constant movement, which leaves a light footprint on the land and its resources. One attempt is taking place in the violence-plagued region of Darfur in Sudan, where severe droughts helped to provoke conflict by forcing farmers to encroach on land used by nomadic tribes. The '1,000 Wells for Darfur' initiative is designed to provide well-water for both farmers and nomads throughout the region. If successful, this effort could serve as a model for other arid regions.

The bottom line is this: where some see desertification, nomadic people see bounty. Rather than try to change their lifestyles, it is far better to give them the tools that they need to continue a pattern of behaviour that has served them and their environment so well in the past. ■

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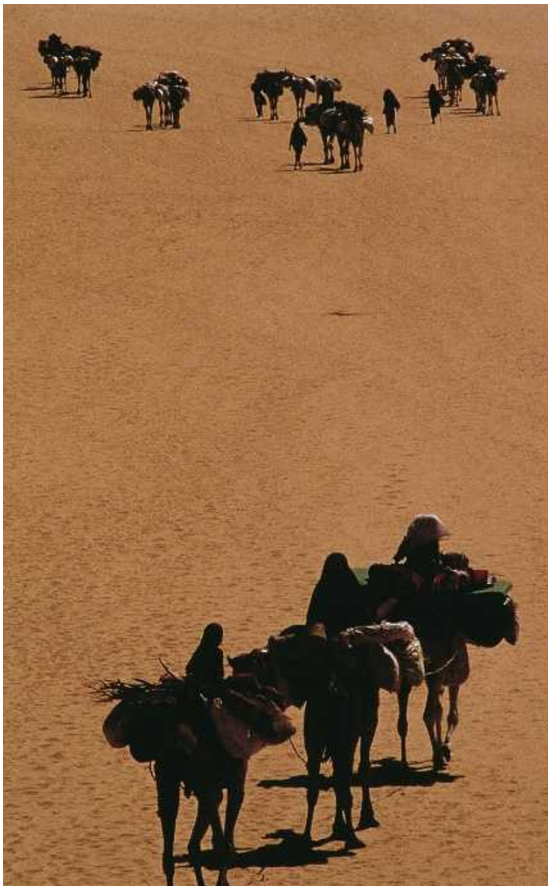

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