

SCIENCE & TECHNOLOGY

Edited by SIMON GROSE
E-mail: simon.grose@canberratimes.com.au

Earth's drylands are slowly turning to dust

LAST month the Asia Development Bank warned in a report that Asia was on the brink of environmental catastrophe. Rapid population growth, it said, had contributed to severe pressure on land, 30 per cent of which suffered some form of degradation.

For many of us, the image of Asia is of lush paddy fields.

Nearly 40 per cent of Asians, however, live in dry-land areas prone to desertification and drought.

Right now, northern and western China are in the grip of their worst drought in a decade. Dust storms from the interior, reminiscent of the dust bowl in the United States of America of the 1930s, are blowing right across the Pacific.

Late last year the United Nations Environment Program said the world could no longer ignore the crisis in Asia's drylands.

Dramatic examples of desertification could be found in the encroaching deserts of western China, India and Pakistan.

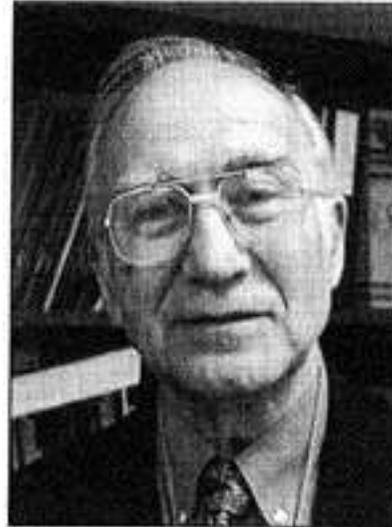
Desertification, however, is not simply the encroachment of deserts;

Desertification is a world-wide problem with dire human costs, says HARRY COHEN.

it is the process of soil erosion and land degradation in dry-land areas. It results from complex interactions between unpredictable climate variations and unsustainable land-use practices such as over-cropping, overgrazing, deforestation or inappropriate irrigation.

It is not confined to Asia but is a global problem. While the West African Sahel is the most seriously affected region in the world, almost 100 countries are directly affected, even in Europe, where considerable areas of land bordering the Mediterranean will be lost to desertification within 50 to 75 years.

And over here, in Western Australia, in the south-western part of the state, the soil is powder dry. We have had no rain of significance in five years and we have just had our longest warm June stretch ever. We



may well be on the way to desertification in our own land.

As land is stripped of its vegetation, the higher reflectivity of bare soil acts to reduce the already low rainfall. Wind and water erosion strips away the fertile top layers of soil. Desert-like conditions intrude

on the pastures, transforming them in ways that can turn out to be permanent.

Desertification also causes the genetic erosion of plants, animals and microorganisms in drylands environments. Species and genes adapted to dry conditions are relatively few, so when they are lost, the loss is keenly felt.

The most serious consequence of desertification is reduction in food productivity and subsequent poverty. Poverty in turn leads to further land degradation as desperate people overgraze the land and cut down remaining trees for fuel. The end result may be famine, particularly in times of drought.

Famine forces people from their communities.

For instance, by 1994 one sixth of the population of Mali and Burkino Faso in Africa had been uprooted as a result of desertification.

Many of the thousands of illegal immigrants who pour across the southern US border each year come from the driest, most eroded, impoverished regions of Mexico.

As the Asia Development Bank said, rapid population growth has contributed to the pressure on the land. While desertification is a complex mix of climatic and human effects, more often than not population growth is the driving force behind detrimental land-use practices.

In his award-winning essay on desertification last year, Raphael Mweninguwe described the plight of a father of eight in Malawi who has three acres on which to grow crops to feed his family, one that also includes six orphaned grandchildren. The soil has lost its fertility, so he encroaches upon Thyolo Mountain, a forest reserve. Outside the reserve, the hills are already deforested and the rivers no longer flow all year round.

Malawi has implemented its 1997 Forestry Act that imposes stiffer penalties for illegal forestry activities such as the burning of charcoal and the wanton cutting of trees. But the fertility rate in Malawi is 6.7, the highest in sub-Saharan Africa, and in the Thyolo district, population has climbed to 600,000 people.

Such population growth drives agricultural expansion, the major cause of deforestation in Malawi. Should the country turn into a desert, says Mweninguwe, it will have devastating socio-economic effects on the lives of people.

Under the International Convention to Combat Desertification, rich and poor countries have to work together to develop strategies to combat desertification. Eliminating poverty is an obvious objective, but this must go hand in hand with efforts to end population growth.

'Population growth is the driving force behind detrimental land-use practices'

Providing reproductive health care and contraception is the best means of bringing birth rates down. Ensuring children survive into adulthood by providing clean water, food and

vaccinations against disease is also critical. Educating girls and women correlates very closely with declining birth rates.

Unless certain countries act quickly to implement these measures, they may find themselves in a downward spiral of disease, desertification, famine and death. The populations of countries such as Ethiopia, Nigeria, Pakistan and India are expected to increase dramatically in the next 50 years. Pakistan, for instance, will have about 357 million people by then, more than live in the US and Canada today.

These countries have large areas of drylands and widespread poverty in places. Cropland per person is shrinking rapidly, pushing more people on to marginal land. Getting fertility rates down quickly is vital if they are not to succumb to further desertification and its dire consequences.

Dr Cohen is national president of Sustainable Population Australia.
E-mail: harry.cohen@health.wa.gov.au