

Diana K. Davis. *The Arid Lands: History, Power, Knowledge.*

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Arid land management is one of those areas where a simple but powerful narrative is built around a set of scientific ideas, a narrative which proves so convincing that it does not change when the science moves on. The arid lands management narrative concerning the causes, extent and remedies for ecological degradation is one of those. It has a long history.

The starting point of Diana Davis's book is the observation that development efforts in the deserts and arid lands of the world have met with little success over the last century. This failure is attributed to the 'problematic notions of the sort that inform our understandings of arid lands and thus justify policy formulation ... Up to 70% of global arid and semiarid lands are frequently claimed to be suffering from varying degrees of desertification'. Yet we have no agreed definition of desertification, and research in the last 25 years clearly shows that the image of the drylands as progressively invaded by spreading deserts caused by human agency – deforestation, burning and overgrazing especially – is misleading.

Diana Davis traces the creation and development of the narratives surrounding deserts and arid lands. The notion of ecological degradation in drylands is ancient and persistent. In the epic of Gilgamesh, the oldest surviving work of literature, the gods punish two men who cut down a cedar forest in Mesopotamia to build a city. Greek and Roman writers – especially Strabo, Pliny and Herodotus – were just a few of the early geographers and natural historians who wrote about deserts. Plato described deforestation in Attica, leading to declining soil fertility. But deserts also had a moral dimension. Early Jewish and Christian thinking placed 'wilderness' and 'desert' together as places of torment and punishment. For some early Christian thinkers, exile to the desert wilderness was god's punishment for human misbehaviour, especially Adam and Eve's antics in Eden.

From the start of the common era, deserts acquired a more positive image as sites of refuge and testing; the rise of desert monasticism, forty days in the desert wilderness, softened the image of deserts, as they became the place where Christian ascetics acquired virtue. On the eve of western exploration of the tropical world, the predominant image of deserts was a combination of fragments of classical imagery and Christian monasticism, embedded in an ancient ideology of human damage to the environment.

This perception began to develop when from the late fifteenth century European travellers encountered desert landscapes for the first time. The contrast between the temperate zone forests whence most of these travellers came and the deserts and arid lands they saw for the first time, was a powerful influence on their thinking. The supposed degenerate state of these lands was rapidly attributed to human action, especially deforestation, leading to a decline in rainfall or desiccation. Desiccation was to play an important role in thinking about deserts from then on.

From the late-eighteenth century, colonial governments were driven by a growing belief that deforestation caused desiccation, or a reduction in rainfall with serious consequences for land productivity, natural resource conservation and climate; and that reforestation could reverse these processes. The idea that felling trees led to increased aridity and the creation of deserts became a fragment of environmental history 'that every literate person knew' and in part explains why the narrative is so resistant to change. Someone had to be blamed for this state of affairs and rural land users, especially the mobile ones, were an easy target. The French experience of the Sahara in North Africa confirmed the view, bolstered by their reading of ancient classical sources, that North Africa had been the granary of Rome but that invading nomadic tribes had destroyed this productive environment; overgrazing and fire were the two main mechanisms involved.

The image of deserts as sterile, damaged, man-made wildernesses, inhabited, if at all, by impoverished thieving tribes whose mobility was proof of their genetically inherent wickedness, acquired a new lease of life with the extension of colonial rule. In early colonial India, the 1871 Criminal Tribes Act, not repealed until 1952, included in its remit those communities which did not conform to the British metropolitan model of the

countryside as the home of landed estates and settled agriculture. The Act, not repealed until 1952, named entire nomadic tribes, in addition to the usual suspects – vagrants, itinerants, travelling tradesmen, gypsies and, surprisingly, eunuchs. The supposed behaviour of these whole groups was attributed to their mobility. Officials viewed pastoralists and their arid habitat unfavourably: their way of life was ‘crude, criminal, and in need of reform’; grazing itself was ‘undesirable’ and those ‘who wandered’ were criminalised. Cattle could be seized on the flimsiest of pretexts, and land not under permanent cultivation was declared property of the state.

Supporting this narrative was a set of ancient beliefs often centred around the image of a ruined forest in a valueless landscape. Desiccation gave these ideas an ideological home which linked deforestation by people to a reduction in rainfall. From the mid-eighteenth century desiccation provided a simple and easy narrative for colonial administrators, which justified their attempts to control rural land use.

From early in the twentieth century, the desiccation/desertification narrative, bolstered by the colonial arid lands management experiments, raised concern about environmental sustainability world wide. The Dust Bowl of the American West in the 1930s brought the subject of soil erosion – previously a matter of principally European concern centred on colonial experience in Africa – to a wide audience in the US. The dominant European view was that desiccation in arid lands was the result of human activity: deforestation, overgrazing, burning.

France, with the UK the other main colonial power controlling large areas of arid lands, developed similar ideas about the management of the drylands, focussed on settling nomads, controlling or limiting grazing, suppressing fire, improving livestock, creating forest reserves and reforestation, and encouraging agriculture.

The African droughts of the 1910s and the 1970s, particularly in comparison with wetter weather before and after the droughts, led to much writing on the fecklessness of local land users, especially mobile ones. The policies derived from this analysis include reducing overgrazing by limiting livestock numbers aligned with carrying capacity, settlement of mobile groups, suppression of fire, soil conservation, planting of trees everywhere. Policies stressed the need for mobile people to be settled and made to grow crops, for livestock numbers to be reduced, by compulsory purchase if necessary,

and all burning of vegetation to be banned. Camels came in for particular criticism for their omnivorous habits. Botanists developed systems of classification of the main plant associations, and identified trees as the dominant species in most areas. In the absence of grazing, plant succession led to a stable 'climax' vegetation.

The UN agencies and activities responsible for land management and deserts, the 1977 UN Conference on Desertification, the UN Environment Programme, as well as major development agencies such as the World Bank and IFAD, have largely accepted this narrative despite mounting evidence that environmental variability and uncertainty are the key drivers of economic variability and uncertainty. If the desert is advancing under human pressure, a wall to stop it makes some sense, and huge Green Walls of trees are being constructed in China and the Sahel on this basis. But if the model is flawed, as research now shows, they will come to nothing, as has happened in the past with similar architectural solutions to economic and social problems. They are unlikely to have much effect besides making life more difficult for people who travel and live in those areas and for whom mobility is a key management response to uncertainty.

In the 1990s the desertification narrative that attributed dryland degradation largely to human agency, and focussed on carrying capacity as a management tool, began to be questioned by research into the dynamics of ecosystems not-at-equilibrium. Variability in rainfall or snowfall is now recognised as a main driver of ecological change. Uncertainty and resilience are key and management should reflect and work with this.

Diana Davis's book explores these themes in some detail. It is historically informed and comprehensively referenced, and written clearly and well. It provides a sound basis for debate about new policies to bring more appropriate management to arid lands and deserts.

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