

BOOK REVIEWS

WORKING THE SAHEL: ENVIRONMENT AND SOCIETY IN NORTHERN NIGERIA by Michael Mortimore and William M. Adams. London and New York: Routledge, 1999.

The year 1968 marked a climatic turning point for the Sahel region in Africa, situated in between the Sahara Desert and the wetter savannah in the south. Successive droughts and ongoing desiccation have affected this vast area since 1968. A major famine overwhelmed the Sahel in the early 1970s. Media attention provoked anguish, leading to international aid and great concern about the future of drylands, which culminated in the first United Nations Conference on Desertification in 1977. Another severe drought crisis developed in the 1980s, accompanied by mass migration. The attention by politicians and scientists gave the Sahel a distinctive international identity, synonymous with environmental degradation and human misery, perceived by some as a classic example of a Malthusian crisis. Indeed, the Sahel seems a great place for studying climatic determinism, Malthusianism and desertification all at the same time. However, beyond sweeping statements and fashionable expert opinions, what is the reality on the ground? Are too many people in a fragile dryland environment indeed sinning against the law of carrying capacity? What is carrying capacity anyway in a bimodal environment with a society adopting incremental technical changes both from indigenous and outside pools of knowledge and options?

The thesis of this book by Michael Mortimore and William Adams is that the Sahelian crisis of degradation can be contained, based on a detailed study in north-eastern Nigeria, one of the most populous parts of the Sahel region. The research approach by the authors demonstrates the great importance of geography as a discipline able to analyze complex situations in human-environment relationships. Based on participant observation during four consecutive years, 1993–1996, the book integrates physical and human aspects, as well as historical perspective and time depth in an exemplary manner. Such an approach is clearly different from one-sided agricultural and economic studies, which have tended to produce unrealistic technical solutions based on a few parameters that failed miserably in the real world. The Sahel can teach many lessons as a graveyard of well intentioned but unsuccessful development projects.

The common and principal environmental characteristics in the Sahelian region result from bimodal conditions in a hot tropical climate: a long dry season of nine to seven months and a short rainy season of three to five months. Inter-annual and

intra-annual rainfall variability is the major exogenous risk, being outside human control. The millions of smallholders in the Sahel live in numerous villages. Most rural communities in the Sahel practice farming, pastoralism, hunting and gathering in resource management strategies that defy a staged one-directional evolution of culture.

Studying natural resource management at the village level, often adopted in the French literature, enables analysis of the economics of farming and livestock production in an inclusive theoretical framework that incorporates the territory of the rural community, its spatial organization and social distribution. The book focuses on four villages in different areas of north-eastern Nigeria, which is predominantly Islamic, and with a British colonial past. Physiographic, demographic and market variables were built into the essentially geographical research design. The authors warn against simplified solutions for the Sahel, a vast zone with diverse physiographic and human livelihood characteristics.

Mortimore and Adams go beyond an economic framework of risk analysis, which is limited to incidence, choices of avoidance strategies, outcomes and costs. They aim to systematically analyze the adaptive behavior of households, the allocation of scarce resources, particularly labor, among competing demands. Thus the authors develop a simple model that expresses the relationship between the four key constraints, rainfall, bioproductivity, labor and capital, and the response options of the household, intensification, diversification or migration, through its management of diversity, flexibility and adaptability as variable properties.

Flexibility concerns short-term decisions about the use of resources. For example decisions related to farming, the type of crops to plant and in which fields, are evaluated in terms of the performance during the previous year, expected rainfall, insect pests, price movements, the amount of food in the family granary, and available labor. Subsistence strategies include grain production output to attain grain reserves sufficient for two or three years, where possible, in order to cope with drought. Decisions in livestock production, where and when to graze, buying or selling, are affected by the condition of the natural vegetation, the amount of fodder available, prices of animals and fodder.

Adaptability relates to longer-term decisions and inter-year adjustments and responses. Such decisions by smallholders are aimed at restructuring to overcome the impact of the environmental and economic setbacks since the 1970s. Adaptability is rational and pathway-dependent, as each decision in a chain is influenced both by goals and previous decisions. The authors boldly state (p. 23): "There never was such a thing as 'traditional' management of natural resources. Practices and goals are continuously revised in the light of *current* conditions...changing much faster today than they have in the past."

The four villages investigated are situated on an environmental and socio-economic gradient of decreasing rainfall (600–350 mm/year), population density (400–15 persons/km²), farming intensity, and increasing distance from the regional market at Kano. Each village has a somewhat different system of resource management due

to environmental and cultural variability. Inventories are made in each village of the technical options concerning the use of biological resources, soil fertility management and livelihood management. The farming year lasts from the onset of the rains in May or June until the end of harvesting in December. The timing and quantity of rainfall is perceived as the primary challenge requiring adaptive management in both farming and livestock production.

Main conclusions of the book include: (1) first and foremost is the need to develop coping and mitigation strategies for poor households to deal with drought risk and rainfall variability; (2) labor management is the key to successful utilization of rainfall resources; (3) development agencies cannot influence the intensity of land use, as it depends on labor management decisions taken by individual households; (4) enabling *incremental development* through agricultural intensification based on integrated indigenous and new options rather than promoting particular technical packages; (5) successful crop-livestock integration is associated with intensification in the most densely populated rural area near Kano, where livestock is kept at higher densities than anywhere else in northern Nigeria; (6) new technologies or modes of management should integrate systems rather than addressing only one component; (7) diversification and multi-sectoral income development outside agriculture are crucial for dealing with rainfall variability.

The authors end the book with the following statement (pp. 201–202): “Sustainable livelihoods, and the sustainable environmental management on which they depend, were the stock trade of Sahelian smallholders long before the ‘development decades’ of the twentieth century. The search for environmental sustainability, and for economic growth, are the current obsessions of the international development community. That search must begin with the complex, dynamic and tightly managed worlds of Sahelian smallholders themselves. Its success will be revealed in their living experiences in the decades to come.” The book is highly recommended for both professionals and students interested in development of the Sahel and of drylands situated in developing countries.

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APPLIED GEOGRAPHY: PRINCIPLES AND PRACTICE edited by Michael Pacione. London and New York: Routledge, 1999.

Michael Pacione’s edited volume continues a long list of scholarly written and edited books attempting to define the essence of the subfield called applied or practical geography. One of the early ones was Keltie (1890), followed later by Darby (1946). Thirty years later a ‘flood’ of applied-practical geography books began starting with Jackson and Forrester (1974) and followed by Winters and Winters (1977), Frazier (1982), Sant (1982), and Kenzer (1989). The field has been strengthened in the early 1980s with Pergamon’s Applied Geography journal. Pacione’s new book offers