

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

at the onset of the third millennium an additional introduction to 'useful research in physical environmental and human geography' hoping to provide 'a new focus and reference point for investigating and understanding problem-oriented research from a diverse range of perspectives and disciplines'. Indeed, forty seven British scholars, one from New Zealand, and one American present forty four articles widely covering four broad areas: natural and environmental hazards, environmental change and management, challenges of the human environment, and techniques of spatial analysis.

Following an introductory article discussing the relationship between 'pure' and 'applied' research with a particular focus on 'useful knowledge', the first chapter introduces both global and general environmental problems such as global warming, acid rain, extreme weather events, earthquakes and vulcanism, floods, and other hazards. These are problems that geographical research could only assist through impact studies, data collection, and to a small extent, policy making. Unfortunately, there are several topics that almost no geographer was actively involved with, especially in spatial analysis of data on disaster impacts and modeling.

The second chapter provides fourteen examples of areas to which geographers can contribute in data collection, data analysis, small-scale problem identification, spatial delineation, and to a certain extent, policy making. All examples deal with environmental change and environmental management, including various problems related to water, conservation and preservation, tourism and recreation, and environmental impact assessments. The reader is only introduced to the problem or subfield but cannot learn 'what to do' as a professional geographer. Although he is referred to a guide for further reading, he practically gains very little.

The third chapter introduces various problems within the human-urban environment. It deals with topics such as political spaces, poverty and deprivation, housing, discrimination, crime, as well as location, traffic problems, marketing, and even AIDS and Third World informal economic activity. This is an 'ocean' of topics, all (fifteen articles) in one chapter. Obviously there is little one cannot say on each topic. The reader is introduced only briefly to this variety of subjects and thus correctly ask whether it is practical, even though the editor naturally could not include all the topics with which applied geographers deal. Moreover, I think that many of them are missing in the book. The whole area of physical planning (national, regional, local, thematic) is missing. Other missing topics are boundary delineation, location-allocation problems, network analysis, cognitive mapping and analysis, and more. Several techniques of spatial analysis are however presented in the book, including general examples of using GIS, remote sensing, geodemographics, global positioning and computer simulation. In this regard the book is indeed an introductory volume which opens up a general window to the wide array of geographical contributions to real world problems.

One element of applied geography that is missing in the book is the client-oriented nature of the field. This nature compels the geographer to propose specific solutions to contracted projects. It creates a deadline type of frameworks in which the geographer presents solutions in normative (e.g., how much and where) and pre-

scriptive terms (e.g. applicability, feasibility, etc.). The geographer must produce a product which can be evaluated, and quality-controlled by the client. These types of products and approaches are missing. 'Applied knowledge', although necessary, is only a part of applied geography. Newcomers to the field of applied geography will find the book useful and stimulating. Others, more experienced, will require a deeper perspective and more specifics, perhaps less topics but more techniques and detailed solutions.

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**URBAN AND PERI-URBAN AGRICULTURE IN AFRICA** (Proceedings of a workshop: Netanya, Israel, 23–27 June 1996) edited by David Grossman, Leo M. van den Burg, and Hyacinth I. Ajaegbu. Aldershot, Hampshire: Ashgate Publishing, Ltd., 1999.

Humans have practiced urban and peri-urban agriculture—the raising of food crops, non-food crops, and small livestock in and around urban areas—for as long as there have been cities. Considered a normal part of urban life in the days before the development of mechanized agriculture and transport systems, urban agriculture more recently has tended to be frowned upon and even actively discouraged by urban leaders. The 'modern' notion has been that the urban and rural spheres should be strictly separated, with agriculture relegated to the rural sphere alone.

Reality, however, often wreaks havoc with human notions of what ought to be, and the current reality of urban agriculture is no exception. In the developing world, for example, the last few decades have seen cities struggling to cope with such problems as rapidly increasing in-migration and population growth, growing urban poverty and unemployment, and deteriorating infrastructure. These problems have