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## Book reviews

*Agricultural Development in China, 1949–1989: The Collected Papers of Kenneth R. Walker (1931–1989)*. Robert F. Ash (Ed.), Oxford University Press, New York, 1998, 367pp., US \$85.00 (cloth), 0-19-713613-3

*Agricultural Development in China, 1949–1989: The Collected Papers of Kenneth R. Walker (1931–1989)*, collected and edited by Robert Ash, constitutes a unique account of the economic development of Chinese agriculture before 1990. Policies have since gone through another round of reform in the 1990s, including gradual market liberalization since the late 1980s and a partial retrenchment in the grain marketing system since mid 1990s. This retrenchment was particularly evidenced in the re-monopolization of grain procurement in 1998. However, the book still provides insights into the issues underlying these changes.

The book contains an introduction by Robert Ash and 10 papers written by Dr. Kenneth Walker, from 1964 up to his death in 1989. The 10 collected papers are organized into nine chapters in three parts and an appendix.

Part I examines the organization and performance of China's agriculture before 1980. The first two chapters investigate the rural institutional reforms of the mid and late 1950s. These two chapters provide a comprehensive political background and Mao's theory for collectivization in China. These two chapters also examine the impacts of the collective movement on agricultural production. The major focus of analysis is the incentive system as reflected in the tension between private and co-operative activities. The main conclusion Walker draws is that the private agricultural sector is an indispensable adjunct to China's collective economy. Additionally, the weakness of the collectives in the face of demand for higher farm output is illustrated.

The third chapter in Part I contains Dr. Walker's detailed study of 'Food and Mortality in China During the Great Leap Forward, 1958–1961.' This chapter makes a unique contribution to the understanding of China's food and mortality in the 'Great Leap' period. It analyzes the impact of the 'Great Leap' on grain production and food supplies in every Chinese province between 1958 and 1962; highlighting the enormity of the demographic catastrophe resulting from the 'Leap.' In addition to other commonly accepted hypotheses such as adverse climatic conditions, ineffective collective management system, incentive problems due to the unwieldy size of collectives, and the deprivation of the right to withdraw from a collective, Walker emphasizes the role of government procurement policies in the crisis and concluded that government procurement policies transformed what was already, in terms of prevailing levels of per capita output, a serious rural economic crisis into a human catastrophe (p. 145).

The fourth chapter concentrates on the performance of grain production in North China prior to reform ('Grain Self-Sufficiency in North China, 1953–1975'). It shows the sources of grain production growth in North China and highlights the critical role of changes in the structure of grain production in generating output growth in the region. Of the remaining two chapters in this section, one focuses on grain production statistics and the other discusses grain consumption statistics.

Part II provides an overview of the early reform in the rural sector and its impacts on agricultural production. The analysis is primarily descriptive, and no comprehensive methodological approach is applied. Yet the two chapters in this section do demonstrate the important role of the household responsibility system reform on agricultural production in the early reform period. The first of the two, entitled "Chinese

Agriculture During the Period of the Readjustment, 1978–1983” (Chapter 7) provides a summary of the economic and institutional reform in rural areas in the early reform period, traces their impact on crop production, particularly regarding grain and livestock, and comments on some problems that faced the government as the decollectivization process unfolded.

Chapter 8, “Trends in Crop Production, 1978–1986,” addresses agricultural development including land use, growth of output and yield, and the changing structure of crop production. Moreover, this chapter highlights issues which have since become a source of concern to Chinese policy makers. Examples of these issues include China’s declining amounts of arable land, the consequent pressure to raise the multiple cropping index and intensive use of agricultural production, and the challenge of maintaining a stable area dedicated to grain production.

The final part of the book contains Dr. Walker’s last published paper. This is a retrospective review of economic development in Chinese rural areas from 1949 to 1986. An analytical framework is utilized to assess non-agricultural activities, and to determine the patterns and impact of rural industrialization on rural development in China. Using cross-provincial data, Walker classifies China’s provinces in different groups according to several criteria of development. Then he comments in each case on how the current stage of development relates to China’s long-term economic goals. He concludes that “the restructuring of rural production and employment and improvement in food consumption sought will be a slow, difficult process” (p. 316). This very pessimistic view is based on two major factors: the decline in the amount of arable land per capita and the difficulty in increasing land productivity. He also points out that rural income growth and structural change have had a disproportionate impact on the rural economies of coastal and inner regions.

All papers collected in this book are well-written. This book is essential reading for anyone interested in China’s agricultural development, and in the role of government policy in agriculture. It is accessible to non-economists, will be valuable to policy makers, historians, economists, graduate students, and advanced undergraduates. It is not targeted at

audiences with interests in technical details of econometrics.

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*Agricultural Restructuring and Sustainability: A Geographical Perspective.* Brian Ilbury, Quentin Chiotti, and Timothy Rickard (Eds.), Oxford University Press, New York, 1997, 348 pp, US\$90.00. ISBN 0-85199-165-3

‘Agricultural’ no longer means only the production of crops and animals. It now encompasses the environment, animal welfare, rural economies, and social concerns. Many textbooks and journals are still focused on production agriculture and this discipline is well-served. Less represented are books and journals that address agriculture in the new wider context and which also consider whether sustainable agricultural practices are both financially and environmentally sustainable over a long period of time. This book is made up of a series of articles that ranges from diversification of farm enterprises, effects of climatic change, environmental policy, and family farms to the structuring of agriculture.

The authors are consistently looking to address the question “How will we need to react in the future to this problem?” Each article is well-researched with good references and the style of writing is easy to read. The book is laid out in a logical way so that the reader can grapple with policy to start with and then work through some of the more specific topics. A series of case studies is presented. The country-specific nature of the articles does not detract from the overall theme but motivates debates that can go beyond the country of origin.

The future social and economic condition of humankind is the central goal of the book, a “goal

to be achieved in ways that do not lead to the aggregate, long-term deterioration in either the quality or quantity of the global natural resource stock” (p. 12). This is a quotation from Richard Munton near the beginning of the first contribution in the book and gives a theme that continues throughout the book with the last chapter concluding. “If the rural values to which the citizens of this region (South Dakota) claim allegiance are to survive, then individuals and communities must devise plans that engender cooperation” (Darrell Napton, p. 338).

The worldwide debate now concerns the importance of agriculture in producing food to feed the increasing population whilst at the same time enhancing and preserving the environment, biodiversity, and natural resources. The contents of this book concentrate on many of these issues and stimulate thinking on the integration of environmental policies with agricultural production and the contribution to the rural economy.

It is the job of politicians, environmental thinkers, and agricultural leaders to give us a significant steer within countries and throughout the world. Country boundaries are becoming less important. Two of the papers in the book refer to internationalism and/or globalization (Cocklin et al., Chap. 2 and Robinson, Chap. 3).

Robinson suggests that more concrete objectives are required for research into sustainability and lists these objectives as combating pollution and maintaining agriculture and other economic activities, especially in marginal areas. The research work needs to address the “contribution (or lack of it) of agri-environmental policy measures to their stated goals of environmental and economic sustainability” (p. 48).

Therefore, this results in some of the conclusions being country- and system-specific. There are, however, enough conclusions of a general nature to allow readers in other countries to learn from the papers. As these papers were the contents of an International Conference for Rural Geographers from Canada, United Kingdom, and United States, with a New Zealand representative, the overall theme is that of northern hemisphere origin.

Geographers, agriculturists, environmentalists, rural planners, agricultural economists, social scientists, and marketers will all be interested in the content. The book should appeal to students, researchers and individual practitioners and, because of the excellent referencing of the contribution, each chapter will

lead to considerable further reading if desired. There are many reasons why agricultural systems require restructuring as new circumstances evolve. This book highlights how lasting successful change can occur.

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## **Irrigation**

*A New Era for Irrigation.* Committee on the Future of Irrigation in the Face of Competing Demands, National Research Council, National Academy Press, Washington DC, USA, 1996, 216 pp. US\$ 39.95 (US price), US\$ 48.00 (International price), £ 32.95 ISBN 0-309-05331-5.

This book addresses what is arguably the most critical issue facing irrigation development in much of the world: how to respond to growing water scarcity and competition for water. The book analyzes the US experience with this trend, and does not address comparative experience in other countries. Nevertheless, even those interested in water resources in other countries may find the book a worthwhile investment because of its balanced, comprehensive treatment of the challenges and responses faced in the water resource management in United States.

Agriculture is still the largest consumer of water worldwide, but municipal, industrial, and even environmental water demands are rapidly increasing as countries move from primarily agrarian to industrial and urban economies. Irrigation has played a major role in the development of agriculture (and even the culture) of the United States, especially in the western and southeastern parts of the country. But the subsidized expansion of irrigation, which dominated much of this century (1900–1970) in the US, has faced significant challenges from rising costs of infrastructure, shrinking government budgets, globalization of agriculture, competing demands for water, and growing environmental concerns. These same trends are seen in many places round the world, and the US experience in dealing with these issues shows the complexity that is likely to apply in many countries.

This book presents regional and time trend data on water sources, withdrawals, area irrigated, and irrigation technology in the US. A summary of major federal programs related to water quality and agriculture is also included. The overview section would be useful for those who are unfamiliar with irrigation in the United States, but may be of less interest to those who have studied the subject.

Because the book addresses a broad audience rather than specialists from any single discipline, terms are carefully defined and many are included in a glossary. The discussion of irrigation efficiency (often defined as the ratio of water consumed by the crop to water diverted) points out that the water which does not evaporate or transpire returns to the stream or aquifer, and is available for other uses in the basin. This is an important point, because many efforts to improve 'efficiency' have only dealt with improving efficiency on-farm. This helps cut costs for farmers who pay for water withdrawals (either from surface systems or through pumping costs), but does not generate water savings that can be used by others. Recognizing these complexities is necessary for understanding why technological improvements alone will not solve the problems of competing water demands.

Although irrigation is usually considered as producing food and fiber, in high-income countries and especially the US, landscaping, sod farms, and golf courses are considerable consumers of irrigation water. The book includes a special section on the turfgrass sector, with attention to the ways of improving water use efficiency and reducing environmental impact. The implication is that demand management in irrigation does not only apply to farmers, but to also suburban homeowners, park managers, and a much broader public.

The analysis of the dynamics affecting irrigation today identifies forces of change related to water, the economy, and the environment, and responses to change through the irrigation community, science and technology, and institutions. The framework makes it possible to include a wide variety of issues and responses, but there is not as much detail as many readers will want on particular examples or options. Fortunately, each chapter contains an extensive bibliography for those who wish to pursue more information. To deal with the enormous variability within the United States, there is also a set of case studies from different regions, notably the Great Plains, California,

Pacific Northwest, and Florida that give a sense of the dynamics and role of local action.

From an economists' perspective, the way to address scarcity and competition a good is to 'get the prices right.' Although there is significant attention to water as an economic good in this book, the committee that prepared it demonstrates the significance of culture, technology, and institutions along with economic forces in shaping the past, present, and future of irrigation. Water markets are discussed in a number of contexts, but the book points out that effective market development would require legal and institutional change in most situations. While instances of sale or trade of water among farmers within a system have been common, many irrigators have been uncomfortable with transferring water out of systems, or separating water rights from the land. Other approaches to water transfers (e.g. urban water districts paying for improvements in irrigation technology or for fallowing land in return for the water 'savings') seek to reduce the negative impact on the agriculture-dependent communities, and may, therefore, be more acceptable to irrigators.

The final chapter presents conclusions and future directions in a manner that is straightforward, and summarizes many of the themes of the book. There are no big surprises in the conclusions, perhaps reflecting the fact that the book is authored by a committee. Irrigation will remain important, though it will have to give up water to urban, industrial, and environmental uses, and many small irrigated farms will be squeezed out. The book ascribes a significant role to action at the local level. While recognizing the seriousness of the challenges to irrigation, it does not subscribe to gloom and doom scenarios of major conflict over water. Instead, based on the US experience, it is optimistic that irrigators themselves will be able to adapt their water use and be major actors in changing the irrigation infrastructure and institutions.

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