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## Book reviews

### **Sustainable Development in Asia, America and Europe with Global Applications: A New Approach to Land Ownership**

Jian-Ming Zhou (Ed.), Edward Elgar Press, Cheltenham, UK, 2001, 518 pp. + xxvii, US\$ 120.00, ISBN: 1-85898-965-5

Dr. Zhou's thorough, thoughtful examination of earth's second-most important element of the man/land problem warrants careful attention. Although its title describes the context of his book, the specific problem he addresses is consolidation of fragmented holdings. His book may be the most significant contribution to the fragmented holdings problem since Bernard Binn's classic treatment of the subject in 1950.

Perhaps it will be helpful to summarise, up front, the book's rather narrowly focused subject: It is about micro-managing the composition of, and access to, parcels of land for agriculture—and for the most part, monsoon crop agriculture. Furthermore, as the author explains in an appendix, he does not discuss causes or effects of fragmentation or the needs for consolidation, noting that those subjects are dealt with sufficiently elsewhere or nominally in a few places in his book. Rather he has directed his attention to *how* to carry out a consolidation. In short, his method is to construct his arguments and evidence (illustrations) around a prescription.

The prescription, in simplest terms, is an individual use right to public land, where the "public" is a local land ownership collectivity (frequently termed a corporation) from which one receives the access to a specific unit of farmland, but not the right to sell, transfer, or withdraw the land from use. Of course, there are many, many refinements relating to the methods of re-composition, types of access rights, uses of land, and

claims on the production from land, all in a dynamic framework to accommodate technology, outmigration, non-crop farming, off-farm employment and so on. The basic prescription seems to assume a village-type organisation, even in later stages of development when large-scale cultivation is carried out by skilled "expert" farmers.

The book is composed around three land ownership "models": the Japanese model, the Chinese model, and the American model. Applications to other countries, e.g. Myanmar, Cambodia, Laos, and Vietnam in monsoon Asia, and North Korea are discussed very briefly. The main argument of the book is concentrated on a critique of the Japanese experience and a comparison with "a new model for sustainable rural development" revealed in the Chinese model. The substance of the book, in about half its pages, is devoted to analysis of the Japanese and Chinese models.

The American model seems somewhat out of place. Similarly, the OECD, Central and Eastern European countries, and Commonwealth of Independent States of the former Soviet Union appear to have been included more for broad interest than explication of the principle thesis. The discussions of American and European farm size and tenure adjustments are interesting, but are only remotely connected to the core ideas contained in the Appendix 3.1 titled "How to Carry Out Land Consolidation—An International Comparison."

Appendix 3.1 completes the first of the four parts of the book. Part One, Theories, is followed a Part Two, The Japanese Model, Part Three, The Chinese Model, and a catch-all Part Four on Applications of the New Model Beyond Monsoon Asia. The stated purpose of Appendix 3.1 is to address the problem of high transaction costs of consolidation transfers under private farmland ownership, "thus demonstrating

the comparative advantage of that under public land ownership (as in the Chinese model) and corporate land ownership as in the proposed new model . . .” The consolidation process consists of administrative preparations including legal and organisational procedures with widespread, if not universal co-operation of landholders, technical preparations such as cadastral records and consolidation plans, and implementation during the non-cropping portion of the year. Issues include consent and participation of villagers, classification and assessment of landholdings, and assignment of new units to households. Attention is directed to modernising farming techniques, controlling corruption, creating procedures for appeals and settlement of disputes, identifying and sharing expenses.

The earlier sections of Part One provide background on monsoon agriculture including the vicious circle of poverty, labour-intensive methods, under-employment, and obstacles to farm enlargement and production improvement. A section on property theory recites Pareto efficiency criteria, externalities, and Coase/Demsetz theorems in order to arrive at transaction costs, the basis for author’s “new model.” Curiously, inasmuch as the author rests so much on the transaction cost argument, Ronald Coase and Harold Demsetz are highlighted, but Oliver Williamson is never cited or mentioned and Douglas North is only tangentially referred to. Except as a warning about what is to come, much of the dissertation-like discourse on “Theories” in Part One can be skipped through, or over, by readers familiar with this subject.

Part Two introduces the author’s “new model for sustainable development.” But first he reviews the Japanese experience in land reform to isolate the difficulties in a wholly privatised system without sufficient leverage of government to conduct needed reorganisation such as the consolidation of fragmented holdings. At the end of World War II, Japan instituted sweeping changes in its land tenure system and production methods with the result that “The vicious circle of poverty . . . was shattered for the first time in Japan.” In later years the consolidations required agreement from an increasing percentage of landholders. The result was that there was a persistence of fragmented small farms. Wages increased, high-income families consumed less rice, and small farms became less viable, but consolidations for large-scale farming were difficult. The author points out that efforts to

induce sale or lease of land, commission agricultural work, or produce cooperatively did not work; agricultural land was abandoned. From such circumstance arose the proposed solution of a village-wide individual–collective mixed tenure system.

The “new” model proposed by the author to override “the last obstacle” (recalcitrant part time and absentee landholders) is a “village-wide corporate ownership of physically unwithdrawable, but financially saleable private land shares.” The proposed scheme has many variations to accommodate the stage of development, income, and employment in and out of agriculture. It includes alternatives for a “dual land system” (a subsistence sector plus a market sector) and for a “single land system” (primarily a market sector). The new model provides for variable mixed economies, interventions by several levels of government, participation by farmers, private ownership of farmland and housing land, supporting both large- and small-scale farms, promoting off-farm employment and non-crop farming, and encouraging progress from the dual to the single land system. The proposal, as presented in the book, is an intricate web of land uses and tenures mounted in various progressions to accommodate changes in development and employment.

The book contains a substantial account of the Chinese agricultural experience, emphasising, of course, the landholding and land managing aspects, and describing mainly the period after 1978. The author uses as a theme the emergence and conquest of “the last obstacle”; the inability to assemble and access land units so as to allow optimal farming practices, including applications of improved technology and large-scale operations. The last obstacle arose or persisted even after some initial successes in China’s “third way,” a form of market supported socialism. Following the reforms of 1978, agricultural productivity rose but then levelled off in the mid-1980s for many reasons such as over-optimism and failure to continue support for agriculture, a shift in priorities to non-crop and non-farm activity, excessive collective fees, increasing costs of inputs, and so on. Although such economic and social factors are considered important, the book remains focused on the decrease of parcel size and increasing fragmentation resulting specifically from population growth and the Equal Land System, which allocated land per capita and, thus, encouraged high fertility. Land was used

less intensively or efficiently because income from crops declined relative to other sources, less effective landholders were unwilling to transfer land in part because land was a reserve against economic uncertainty, and part-time farmers were unable to devote sufficient time to their fields. Land was fragmented and poorly utilised.

Since the mid-1980s, China has undertaken to overcome “the last obstacle.” It has sought to move from a poor, labour-intensive farming system to a technologically advanced and ecologically friendly agriculture in stages as an evolutionary process. The dual land system, which provided for a substantial amount of cropland for subsistence, declined in favour of the single land system, which reflected more non-crop farming and improved off-farm employment opportunities. Land was consolidated, leased or contracted to expert farmers, i.e. those with greater technical knowledge and skills. Typically land was held by a village corporation, which acquired ownership in exchange for land shares. The shares could be sold by shareholders, but the land for which shares were acquired could not be physically recovered. The corporation contracted with expert farmers to fill state quotas and produce for market. Corporate revenue, after expenses and other claims, was distributed to shareholders as dividends. A “Land Management Law” was implemented at the beginning of 1999 to regulate the terms of land operation contracts to protect against land idling or misuse. In 2000, the law was modified to ease mobility particularly among those seeking to leave agriculture.

According to the author, China has now overcome the last obstacle, noting 5 years of good harvests “and advanced from a chronic under- to a temporary over-supply of food . . . hence entering a new phase of development” which includes concerns about quality of production, extending the variety of products, converting erodible land to forests, grass, and wetlands, protecting farmland from non-agricultural development, and developing a green agriculture. The author seems sufficiently pleased with the Chinese model that he recommends it, or aspects of it, for monsoon Asia and other areas. While he acknowledges a wholly different set of historical, physical, economic, and political circumstances in America, he does feel that elements of his “new” (Chinese?) model could help to provide a more diverse size structure in American agriculture.

“The American Model” is reviewed in a couple of chapters, the first of which deals summarily with farm size growth and the decreasing numbers of farms. The process is described as “squeezing out small farms” as if those who leave farming completely or partially are somehow being exploited by large farms. There is little or no speculation about the condition of agriculture and those so employed had the 6.5 or even 4.5 million farms remained. In fairness, the once-over-lightly treatment of American farm structure and government programs appears to encapsulate the US American experience quite adequately for readers not already familiar with the extant literature. The second chapter seeks a solution to the USA farm size problem. “The problem” is seen as “both strengthening large farms and preserving small farms.” It is a curious choice of words inasmuch as the previous chapter appeared to suggest that small farms should be strengthened and large farms should be at most preserved. Oh well.

The second chapter of the American section enters the farm size issue through land tenure. With such an entry, so-called “part-owners” lead the discussion because it is through a combination of land ownership and leasing that American farmers are able to expand the size of their farm operations. Of the three basic tenure classes, part-owners operate the largest farms. Part-ownership expands income, provides tenure security, and, hopefully for the owner, captures some of the asset value gains in land. Part-ownership gives flexibility in resource management. It is to land what off-farm employment is to labour. However, the author’s focus on the efficiency aspects of farm operation (particularly farm parcel aggregation) overlooks the wealth and income distributive aspects of farmland ownership distribution, probably a more significant issue in the American context.

From application of the “new model” to the USA, the author moves to a comparison of the Chinese, Japanese, and American land reforms, the American land reform is dated c.1783. To say the comparison is a bit of a stretch is understatement. That is not to say that comparison of whole national histories focusing the confluence of economic, social and political events on a single feature of a single industry (e.g. farm size) is frivolous, but it probably requires more than six pages. But give the author credit for being audacious, if not altogether illuminating.

This is not a book one can skip through easily. However, many of its extensions and illustrations will be sufficiently interesting to reward the dedicated reader or specialist. As written, it is for the land reform specialist. For this reader, however, perhaps some of the explaining and referencing could have been taken for granted. Generalists may become impatient with the exhaustive, and at times exhausting, dissertation-like treatment of the subject. A partial explanation for the book's forbidding length and detail is that it is a dissertation, supplemented and rewritten. This reviewer, perhaps for obvious reasons, found the chapters on the Chinese experience more interesting, although more difficult, than the chapters on the USA experience.

Finally, in fairness to the author, he did not completely neglect the most important problem in the man/land relationship. Stated in terms of the subject of his book, land fragmentation, Dr. Zhou addresses the most profound issue of planet earth, human population management. Near the end of his section on property rights, he says: "Population control should be strengthened. Otherwise, due to inheritance and other factors, not only the present fragmented small farms would be further fragmented, but also the already consolidated farms would be re-fragmented." Elsewhere (e.g. pages 210, 234, 246), he bluntly confirms the land tenure consequences of too many people. However, his message is focused on the access to, and management of land. The purpose of his book is solving the problem of farmland fragmentation, not cataloguing the consequences of the mounting number of people on earth.

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### **Agricultural Science Policy: Changing Global Agendas**

Julian M. Alston, Philip G. Pardey, Michael J. Taylor (Eds.), Johns Hopkins University Press, Baltimore and London, International Food Policy Research

Institute, 2001, 285 pp. + xvi, US\$ 21.95, ISBN: 0-8018-6603-0 (hardcover), 0-8018-6604-9 (paper) ☆

*Agricultural Science Policy* is the latest in a series of instalments by these illustrious authors on agricultural research and productivity. A earlier book, *Paying for Agricultural Productivity* (Alston et al., 1999), investigated mechanisms used for funding agricultural research in Australia, The Netherlands, New Zealand, the UK, and the US. An even earlier volume, *Making Science Pay* (Alston and Pardey, 1996), considered how to measure agricultural productivity, the impacts of research, and rates of return, in addition to financing issues. *Agricultural Science Policy* is a book of readings on productivity measurement and research impacts organized into five parts. Part 1 focuses on how the world is changing and what those changes mean for the research agenda. Part 2 addresses productivity measurement, while Part 3 wraps natural resource issues into the discussion of research impacts. Part 4 concentrates on genetics research, and Part 5 concludes. It is valuable to have these high quality papers revised and reprinted because they complement each other, and the originals appeared in an obscure conference proceedings. Nine of the twelve chapters in the present volume were drawn from the 48 papers presented at the "Global Agricultural Science Policy (GASP) for the Twenty-First Century" conference held in Melbourne, Australia in 1996.

*Agricultural Science Policy* is a research practitioner's collection. Policy-makers who might pick up the book for a comprehensive and comparative discussion of research agenda-setting around the world, as the titles of the book and several chapters suggest, are likely to be disappointed. The first and last chapters, which the reader might suppose again from the titles, are the meat of the book, and are short in length and content. The contribution of the last chapter is that it provides brief descriptions of the contributions of each chapter, and seems a little misplaced at the end. The private sector has an ever-expanding role in setting the agricultural research agenda, and is probably "wagging the dog" in many countries, yet it gets a scant page of coverage in the first chapter without discussion of the revolution underway due to

☆ The views expressed here do not necessarily reflect those of the US Department of Agriculture.

biotechnology. This oversight is compounded, rather than alleviated, by one mention here and two references to biotechnology in the last three paragraphs of the book. When it appears at the end, the analytical reader must question if some discussion of the impact of biotechnology on agenda-setting should not have appeared earlier? Perhaps the editors felt the need or were compelled to provide a unifying theme for the book, and the first and last chapters attempted to meet that purpose. The second chapter by Serageldin on the international agricultural research agenda, draws deeply on his experience and savvy as the chair of the Consultative Group on International Agricultural Research (CGIAR) between 1994 and 2000. This chapter might have made a good introductory chapter, perhaps combined with a newly commissioned chapter on research agenda-setting in industrialized countries. A link between these chapters might have dealt with some of the interesting issues that arise when multinational firms introduce their agricultural technologies in developing countries, such as the impact of strong or weak intellectual property rights and consumer acceptance in the developing country.

When it comes to agenda-setting, another headline story concerns the public sector. Long the dominant force in agricultural research in most countries, public research has moved public-goods creation to the top of its agenda. Chapter 1 discusses the privatization of public R&D and how public research centers have increased their research related to food safety, nutrition and health, environmental quality, rural development, and risk management, without going into detail. Another public research agenda item, particularly in the US, is how aggressively to pursue basic pre-technology research. Functional genomics, platform and enabling biotechnologies, and research tools, can and have been developed in the public sector, but the private sector is also doing research in these areas. The question is how willing private companies will be to share or license their results? Unfortunately, in Parts 1 and 5 of the book there are a number of important issues missing or dealt with too briefly for this reviewer.

The highlight of Part 2 is Griliches' chapter on agricultural productivity measurement. This chapter is an invaluable resource for anyone thinking critically about using productivity statistics, with the content

presented in the inimitable, probing, cranky, Griliches style, that raises more questions than it answers. Many who have benefited from his insights in the past are going to miss them in the future, and should take the opportunity to read his chapter in this book. The chapter by Pingali and Heisey in this section is an excellent explanation of trends in cereal-crop productivity. This topic is fundamental to understanding the impact of research and the agenda that generated it. Also in Part 2, the productivity measures discussed in Chapter 4 represent only one-half of the story on productivity measurement in the US. The interested reader will gain much comparing these numbers and the ones available at the Economic Research Service of the Department of Agriculture.

In the spirit of the Griliches introduction to Part 2, Part 3 is led-off by Beckerman's observations on the potential for sustainable development (SD). Possibly because of insights like his on the difficulty of even rigorously defining it, SD seems to have cooled down as an agenda-setting criterion, but natural resources and the environment become ever more important. Wilen and Homans explain how to measure the productivity of a natural resource input, with an application to the Halibut fishery of the North Pacific. They provide explanations for seemingly incongruent policies to increase the use of productivity enhancing technologies while regulating excess productive capacity. Equally timely is Lindert's treatment of soil productivity losses due to degradation. He reports how organic matter and nitrogen have declined in Chinese and Indonesian soils, while phosphorus and potassium have risen. He goes on to discuss yield impacts, and now has an entire book out on the subject (Lindert, 2000).

Even a demanding reader will probably consider that natural resource issues are addressed relatively well in Part 3. The same reader may well find the genetic resource chapters in Part 4 to be even better. Evenson and Wright each had invited papers in the GASP conference proceeding and here they combine for a tour-de-force on the value of plant biodiversity to agriculture. They build up a coherent presentation that starts with germplasm characteristics and conservation, digs into issues raised by the development of biotechnology, proceeds to the valuation of genetic resources, and actually gets into intellectual property rights considerations. Byerlee and Traxler address the

roles of technological spillovers and economies of size in research program design. These are both important considerations, particularly for agenda-setting, because they affect research programs differently and need to be considered carefully in the design of individual agendas. They apply their insights to international wheat and maize research, and India's national wheat research program. It is not completely clear why this chapter was not placed in Part 1 other than to have three chapters in each of Parts 2–4.

In the last chapter in Part 4, Gray and Malla estimate consumer health benefits of canola research. Practitioners will enjoy this chapter because of its clear identification of the pathways from supply and demand effects to consumer benefits. Their model has four sectors (canola seed, oil, meal and processing inputs) and three regions (Canada, Japan, and rest-of-world). One caution about using the framework in this chapter for future work is that it needs to be considered alongside recent articles by Falck Zepeda et al. (2000) and by Alston et al. (1997) on the distribution of research benefits.

In conclusion, *Agricultural Science Policy's* stated research agenda is to provide insights on factors influencing global agricultural research agenda-setting. This important and challenging task is largely completed with respect to natural resources and genetic diversity. The editors have made a good start, but the agenda they describe is less than complete.

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## Planning Agricultural Research: A Sourcebook

G. Gijsbers, W. Janssen, H. Hambly Odame, G. Meijerink (Eds.), ISNAR/CABI, Cromwell Press, Trowbridge, UK, 2001, US\$ 55.00, ISBN 0851994016

In the words of the editors of this recent contribution from the International Service for National Agricultural Research (ISNAR), “this planning sourcebook is an attempt to contribute to better understanding of the many aspects of agricultural research planning, particularly to present and analyse recent developments and future challenges” (p. xiv). This compendium is comprising of 24 chapters divided into four sections—Context, Content, Institutional processes and Tools/Instruments—and provides a wealth of information for practitioners and novices alike. However, the coverage may not satisfy either audience. For the non-planner, there is more information than one probably wants, but at least the book serves to dispel much of whatever might remain of the mystique of agricultural research planning. For planners and assorted would-be practitioners of specific methods, there is not enough detail to proceed without the aid of another, more detailed account, participation in a workshop, or tutelage from an experienced practitioner. But the sourcebook definitely succeeds in exposing all readers to at least the bare essence of a wide range of planning approaches and related topics that can provide the basis for deciding how to organise a research planning effort and where to go for additional detailed information (references, websites, etc.). A major message of the book is that just as planning is all about making choices, choices are also required in determining a planning approach and set of methods that are suitable to the context as well as the time and resources available.

Part I, dealing with the context of planning provides an overview of the scope of planning concerns with chapters on the challenges and opportunities offered by globalisation, regionalisation, the environment,

biotechnology, and information technologies. The implicit agenda is at once formidable and full of exciting possibilities. Part II, on the content of planning covers ground that is largely familiar to practitioners with chapters on strategic, master, program, project and experiment planning as well as discussions of policy, finance and training. Part III is titled "Agricultural research planning as an institutional process" and leads with a thought-provoking piece on planners and planning. Most of the rest of this part covers mainly familiar ground with chapters on participation, priority setting, budgeting, implementation and (project monitoring and evaluation (PM&E)). There is less discussion and analysis than there might have been about why national agricultural research systems (NARS) often fail to follow many of these critical processes effectively for reasons that often go beyond human resource capacity. The final section of the book provides brief overviews of several tools and instruments that are employed by research planners including chapters on analytical hierarchy process, constraint trees, gender analysis, geographic information systems (GIS), log frames management information system (MIS), participatory rural appraisal (PRA), alternative scenarios and simulation models. With the exception of the chapter on log frames, readers should not expect to be able to use the tool on the basis of information provided in the sourcebook. However, the chapters do give enough of a sense of what the specific tool is and how it might be employed to facilitate the decisions on what to employ. In addition, all chapters include examples of actual applications of the specific approach or tool being described.

Those familiar with NARS in developing countries in particular will quickly see that choices among approaches and methods are necessary. Even though a single NARS or research organisation could conceivably use variants of everything in the book, please do not try! There is enough here to keep even a relatively well endowed research organisation (at least in the developing world) fully engaged for years or even decades, leaving little time to implement whatever final plans might emerge. Choices among methods and approaches are clearly in order. Although there is not enough about processes for making this critical set of choices in the book, the sourcebook provides NARS leaders and planners as well as other key stakeholders (e.g. board members, donors and policy

makers) with adequate information to reach an informed decision. At a minimum, users of the book can be equipped to query the proposals of planners who may be prone to select the approach they are most familiar with, whether or not it suits the specific context.

The sourcebook is timely, given the changing context of agricultural research in developing countries in particular. For the past decade, national governments and donors have in varying degrees been turning their attention from agricultural research and development to other topics (e.g. HIV/AIDs, governance). In the age of greater decentralisation and participation, NARS often find themselves cast in the role of archtypical bastions of top-down, supply-driven paradigms. The classic planning approaches that most NARS employ are often cited as evidence of the failure of public sector research organisations in particular to 'get with the program'. The fact that these classic approaches are more often than not imposed by donor agencies and/or are not always used as serious guides in the allocation of resources is often overlooked by critics. Further, many NARS had been at the forefront of efforts to provide a voice to small, low resource farm families through variants of farming systems research and farmer participatory research since the late 1970s, but even NARS leaders have often failed to make this connection.

Many if not most NARS find themselves today with no more internal capacity to plan and implement effectively than they had a decade ago. Despite a succession of donor projects, efforts to develop and retain a serious planning capacity have failed in most developing country NARS. There is a continuing dependence on consultants. At the same time, the pool of agricultural research planning expertise in developed country institutions (notably universities), international agricultural research centers (IARCs) and donor agencies is possibly smaller than it was in the 1980s. ISNAR among the IARCs has the mandate to assist NARS with planning, but has been redefining its role away from such assistance in recent years. The gap is some what filled by consultants, many of whom are locally recruited. The sourcebook is very useful reading for this breed (which includes the author of this review), who in varying degrees may not be aware of the full range of planning approaches and specific tools. However, in general, the sourcebook offers an agenda of planning



that is seriously over the top in terms of what most NARS should realistically attempt.

If the gap between capacity and the requirements for good quality agricultural research planning is, in fact, widening worldwide, one is left with serious concerns for the prospects of most NARS. Yes, the emerging demand-driven, market-oriented paradigm associated with globalisation described in the first chapter requires a “new breed of agricultural planner” (p. 15), but there is virtually no discussion of the problems of recruiting and retaining that new breed, nearly all of whom have more attractive options elsewhere. More fundamentally, there may be a serious disconnect between the mindsets of the ageing cadre of largely technical and biological scientists who are in the leadership positions at the institute and program levels of most NARS and the demands of the new paradigm. This situation is illustrated in Chapter 15 on “Roles of planners and planning” where the author contrasts the

rational organisational and networking models of planning. The former comprises what most NARS have been accustomed to, while the networking model features advanced modes of participation at several levels, flexibility, market-orientation and transdisciplinarity. Most NARS leaders may be as comfortable with the networking model as they are with cross-dressing. In conclusion, the sourcebook succeeds as a source of information on the range of agricultural research planning approaches and associated functions, but falls short in assessing the capacities of NARS to choose among and effectively utilise these methods.

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