Book review

Options for Soil and Farmer Friendly Agriculture in the Highlands of Northern Thailand:

The core purpose of this book is to provide a basket of soil management options in a form that readily encourages its extension to farmers in the highlands of northern Thailand. I expect that it will be very successful in this purpose as it is very accessible, ready-to-use source of information on soil management and methods for matching technology to the needs of farmers. Its immediate audience are therefore the people with the task of extending this knowledge to the farmers: i.e. the agricultural extension workers and field officers with NGOs and development projects in the upper Mekhong ecoregion.

But what about the rest of us? The content of value in this book includes not only the ‘basket of soil management options’ but also insights into highland agriculture and the methodology behind how the soil management options were generated. Any reader with academic, research, administrative, political or even a casual interest in the development of tropical highlands will find valuable information and insights in this book. For example, I can see many of its readers being research students who need to come up to speed with tropical highland agriculture, especially those from a primary discipline other than agriculture.

The book is the final output of the Soil Fertility Conservation Project (SFCP) which was a 7-year research collaboration between the Katholieke Universiteit Leuven, Belgium and Maejo University, Thailand. It is published as part of the Tropical Ecology Support Program conducted by Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) which has the aim of facilitating ecologically-sound development in the tropics. The book distils the results of SFCP’s on-station and on-farm research and presents it in a non-technical format as a practical guide to better soil management.

There are three parts to this book comprising a background to the people, agriculture and soils of the highlands of northern Thailand, an integrated vision of the management of these soils, and a reflection of the future of highland agriculture.

Part I introduces the agroecosystems and highland farming systems in northern Thailand. Mountain watersheds are critically important for wood and water supply to lowland areas and there is considerable debate whether they should be developed or conserved. The editors argue for a rational compromise based on the knowledge of characteristic potentials and constraints of highland agriculture. Throughout the book they take great care to spell out all the positive and negative aspects of any soil management options. They also emphasize the importance of farmer participation in determining the values of these options.

In line with this approach they introduce the Participatory Learning and Action methodology used in problem diagnosis throughout the SFCP. A useful appendix of diagnostic tools and methods supports this material. This is not a textbook on participatory research but it does provide a good summary and some useful practical information. Field workers who need to learn about this approach will find this material a useful starting point. There is also a primer on soil science that will benefit readers who do not have a strong background in agronomy.

The second and major part of the book presents the basket of soil management options. It does this by first taking the undisturbed forest ecosystem as a...
possible model for ideal farming systems. Such systems would be those that limit burning and tillage, include mulching practices, and grow perennial crops or crops in rotation. From this basis follow chapters on managing fallows, plant residues, soil erosion, soil nutrients, weeds and soil-borne pests. Each of these chapters begin with some basic soil science, then discusses the advantages and disadvantages of different options to, for example, manage fallows or control soil erosion. Each chapter also concludes with a summary that raises the choice of soil management practice into the larger farming system context rather than choosing the practice that is ecologically ideal.

Indeed, the authors address some very challenging controversies such as continuance of fallow-based farming systems, burning plant residues, and deep tillage practices in a thoughtful and non-doctrinaire fashion. Given the resource limitations of highland farmers it would be counterproductive and unfair to ban practices that do have their advantages. By the same token, modern practices such as agroforestry, no- or minimum tillage and organic farming are not always appropriate.

Agroforestry, for example, is often touted as a good mimic of forest ecosystems and indeed it would be difficult to find a rural development project in tropical uplands without an agroforestry component. Several traditional systems already exist in the SFCP region: home gardens, fruit tree based systems, and the ‘Mi-ang’ system where lower story forest vegetation is cleared to promote the growth of wild tea trees. Modern, contour hedgerow systems have also been used in this region for 20 years, but there are many agrotechnical and social reasons that restrict their adoption by highland farmers. One of the text boxes given at this point reveals in a lightly amusing fashion the great difference in perception of new technology held between a research and farmer. Agroforestry is not a panacea for sustainable development of small-scale tropical agriculture, just one option among many.

Ecologically-sound agriculture is more than choosing appropriate soil management techniques; it involves all farming and non-farming activities at the household and community level that have an impact on the relationship between that community and the land that supports it. So Part III of this book presents an overview of various income-generating activities that highland people can adopt with the understanding that diversification is the best strategy to achieve sustainable agricultural development. In the end it is up to the farmers themselves to mix and match the various soil management practices and income-generating activities but hopefully now their choices can be better informed.

All this is presented in a very accessible format that invites selective reading, especially through the liberal use of text boxes. (I was particularly interested in the curious local practice of using kitchen salt as a herbicide.) Thirty colour photographs support the material with fascinating notes on the effect of traditional and modern land use systems on soil health and the participatory processes followed in the SFCP. There are also lively illustrations that can be easily extracted and massaged into appropriate material for delivery to farmers.

There are appendices with diagnostic methods and tools for participatory research and soil surveys. Some of the material in the appendices — such as the recommendations on fallow improvement, fire control, vegetative contour strips and fertiliser use — should have been included in the ‘integrated vision’ of soil management in Part II, but this is only a minor structural flaw in what is otherwise a very well designed book.

In conclusion, this will be a very practical book that offers something for a wide range of readers. It serves as a good model for how participatory research can be used to strike a balance between the protective environmental role and productive economic role of highland development. It could be made even more useful if, in a second edition, there is some discussion of the type of research required adapting these soil management practices to other ecoregions.

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