

WONG, J.L.G., THORNBURGH, K. and BAKER, N. *Resource assessment of non-wood forest products. Experience and biometric principles*. Non-wood Forest Products 13. Food and Agriculture Organisation, Rome, 2001. xvii + 109 pp. ISBN 92 5 104614 X. \$18.00 + shipping costs.

Few now doubt that Non-wood Forest Products (NWFPs) play an important role in the livelihoods of millions of people worldwide, especially the rural poor in tropical countries. One constraint to improved management is often a lack of reliable data on stocks or productivity, stemming in part from the technical complexity of the subject. It was recognition of this fact that led the Forest Research Programme of the UK government's Department for International Development to commission a review of existing NWFP assessment methods and their biometric validity (Wong 2000). That study formed a key background paper for a workshop held in Rome in May 2000, which aimed to identify research needs. One need agreed by the participants was the publication of a guide that summarises the conceptual background and practical options for resource assessment. This is what the book reviewed here aims to provide, and it does so admirably.

This is deliberately not a 'how-to' manual for individual survey techniques, but many references are provided to help the reader locate this information elsewhere. Rather, it is a clear, concise guide to the choice of techniques, and also the more fundamental question of when expensive, 'scientific' data are needed and when cheaper, less formal approaches are adequate.

Following an introductory chapter, Section 2 guides the reader through a series of key conceptual questions, including: what is the role of resource assessment in sustainable harvesting? What makes a study biometrically sound? How good are existing methods? Is biometrics always necessary? Section 3 then tackles in turn five key types of assessment (stock, yield, production, projected sustainable harvest levels and post-harvest monitoring) before discussing the potential of participatory methods as a complement to more strictly scientific approaches. Section 4 looks at the potential contribution from other, less forestry-orientated methods drawn from the fields of biodiversity assessment, social science, ethnobotany and economics. Finally, in Section 5 the authors bring all of this together in an inventory design decision support framework, guiding the reader through a logical series of questions that should lead to an appropriate choice of survey design. Throughout the book case studies help the reader to relate these theoretical considerations to practical difficulties.

A recurrent theme is the biometric weakness of many past studies, often due to the logistical difficulties of achieving adequate sample sizes given the financial and manpower constraints of most NWFP-related research. The authors emphasise the need for innovative solutions to this problem, and others such as the diversity of life-forms and life-histories covered by the term NWFP. A corollary of this is that the reader will often find no 'off-the-shelf' solution for his or her particular problem, but instead have to modify methods that have worked in more-or-less similar situations elsewhere.

Many basic technical terms are briefly explained but a reader will need some previous knowledge of statistics and forest inventory to get the most from the discussion. In the foreword it is stated that the book is aimed at practitioners, researchers, natural resource managers and all development workers with an interest in sustainable forest utilisation. To this list I would add students of forestry or other environmental management

disciplines, since this book will give them a useful framework for comparing the welter of different techniques and case studies to be found in the literature. I wish it had been available at an earlier stage in my career.

A CD-ROM provided with the book contains the full text of Wong (2000), the conference proceedings and several other key documents for further reading. These are valuable additions.

#### REFERENCE

Wong, J.L.G. 2000. *The biometrics of non-timber forest product resource assessment: A review of current methodology*. Background paper prepared for DfID Pre-Project ZF0077.

TOM EVANS

RAISON, R.J., BROWN, R.J. and FLINN, D.W. (eds) *Criteria and Indicators for Sustainable Forest Management*, IUFRO Research Series 7. CABI Publishing, Wallingford, United Kingdom in association with IUFRO, Vienna, Austria, 2001. xiii + 443 pp. ISBN 0 85199 392 3. £65, US\$120.

This substantial book contains the peer-reviewed, revised and edited papers presented at the August 1998 international conference *Indicators for Sustainable Forest Management: Fostering Stakeholder Input to Advance Development of Scientifically Based Indicators*, held in Melbourne under the aegis of the IUFRO Task Force on Sustainable Forest Management. Three plus years since the conference, many of the issues addressed by the papers remain current and continue to challenge anyone involved with developing and using indicators: whether to inform forest policy; forest management or the design and operation of forest certification schemes.

The papers cover the utility of Criteria and Indicators (C&I), generic design issues and specific indicators for what most would agree are the main components of sustainable forest management: social and economic functions and conditions; legal and institutional frameworks productive capacity; ecosystem health and vitality; soil and water protection; global carbon cycles; and biological diversity.

The opening paper by Raison, Flinn and Brown establishes the need for stakeholder participation on the development of C&I, the utility of C&I being dependent on how well they reflect stakeholder values. There are, they observe, few absolute requirements for SFM, except for avoidance of irreversible change such as species extinction. SFM is, therefore, largely negotiable. As becomes increasingly clear as one works through the papers, there are many conceptual and operational issues that still need resolving, including: development of indicators that meet stakeholder expectations and that can be applied at scales relevant to forest management decisions; developing cost-effective monitoring systems; developing indicators capable of accommodating changes in social values over time; developing relevant, meaningful and practical indicators for some components of SFM that are not well understood, for example, biodiversity, forest fragmentation and its biological effects at the landscape scale.

Stephen Bass cautions against over-design of C&I and proposes a focus on the values of forest goods and services to households. He challenges C&I developers to capture all the colours of the land use spectrum and to address the questions of