

The most striking aspect about this book is the extensive coverage of various topics that would more than satisfy a birdwatcher. The good layout and thoughtful organization of the different chapters of the book are its other highlights. The author provides quite a bit of information on diverse topics like ecological theories, succession and food-chain development, scientific census techniques and sampling methods such as line transects and point counts, a good description of nesting and migration, and logically ends the book with how information provided by readers could potentially contribute to conservation. The readers are appropriately directed to relevant references and further readings have been recommended. The illustrations have been thoughtfully placed and boxes with additional information provide interesting reading. The illustrations of different bill and feet shapes as well as those portraying different behaviours deserve special mention.

The author writes in a style that is simple, easy to read and relatively free of jargon. However, this also brings in the occasional problem of over-simplification, such as the sunbird being described as 'vegetarian', while it is actually known to feed on insects. Perhaps, 'nectarivorous' would have been a better description. Another over-simplification is the description of the woodpecker's tongue as being 'sticky', though it would have been correct to mention that the tongue is not sticky in the traditional sense but its tip is hardened and has backward-facing barbs (illustrated in many papers including ref. 1) on which the insects get 'stuck'.

It is particularly interesting to see the author encouraging the reader to think beyond what one sees and to explore the different aspects of bird biology. This, coupled with a good 'activities' section on, among others, how to measure the height of a tree and how to form species-incidence curves, should go a long way in inculcating a scientific temperament in young readers. It is the personal comments and opinions, however, that make this book far more interesting to read than a general textbook on methods on bird watching.

There are, however, several minor problems in the book. An example of this, is the comment by Madhav Gadgil on the evolution of the peacock's tail. Reference has not been made to the work of Amotz Zahavi, the originator of the idea of the handicap principle² on the basis of which Gadgil's comments have

been made, and the reader may be somewhat misled in her understanding of this principle. The reader would have benefited from further reading if the original reference had been quoted. Another potentially misleading part is where the author seems to indicate that the mark-recapture method is not a sound one to estimate bird population densities. The author could have referred the reader to a vast amount of literature on this subject (e.g. ref. 3) where not only population densities but also other vital parameters like survival rates have been estimated through the mark-recapture method.

Some very practical pieces of information on how to make a simple hide, a nest-box and nest-examining equipment provide the interested reader with tips to take bird-watching further. The general drawback with the book is that it has a strong leaning towards wetlands and waterfowl. The non-wetland birds mentioned are woodland birds or urban birds while very little of rainforest birds have been covered. This is reflected through nearly all chapters of the book including the pictures and the maps. This can perhaps be argued as a justifiable leaning considering that wetlands and urban woodlots are more widely found across the country than are rainforests (or any forest, for that matter!) and the book does target birdwatchers and naturalists primarily in urban areas.

These comments notwithstanding, the book proves to be a must-read for anyone interested in birds and provides excellent, extensive information that will definitely help an interested birdwatcher further her skills and refine her thinking about our feathered compatriots with whom we share this planet.

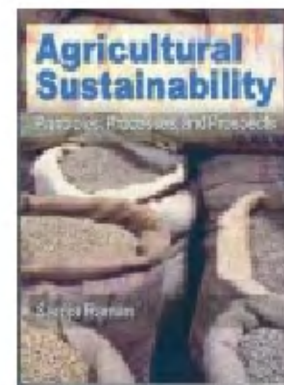
1. Wallace, R., *Wilson Bull.*, 1974, **86**, 79–83.
2. Zahavi, A. and Zahavi, A., *The Handicap Principle*, Oxford University Press, New York, 1997.
3. Williams, B. K., Nichols, J. D. and Conroy, M. J., *Analysis and Management of Animal Populations*, Academic Press, New York, 2002.

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Agricultural Sustainability: Principles, Processes and Prospects. The Instructor's Manual. Saroja Raman. Food Products Press, An Imprint of The Haworth Press, Inc., 10 Alice Street, Binghamton, NY 13904-1580. 2006. 474 pp. Price not mentioned.

The book under review has been produced in two volumes. The first volume of the book attempts to present a broad picture of the past, present and future of global agriculture with reference to its sustainability. The second volume serves as an instructor's manual. The first volume is organized into three broad parts, the first dealing with the principles of sustainable agriculture, the second part with operationalisation and the third dealing with transition to agricultural sustainability. It is not clear who exactly the author has in mind as the reader. She defines the aim of the book as being – 'to portray without bias the conceptual as well as operational aspects of agricultural sustainability in a comprehensive and analytical manner with an emphasis on the contextual specificity of space, scale, time and socioeconomic patterns' (p. xvii). One has to guess the motive for writing the book of which one gets a glimpse under the section on acknowledgements which starts with the statement that – 'this book is the outcome of my resolve to give shape to a topic that I had been incubating in my mind for a considerable period of time' (p. xxi). The book is written in a scholarly style with a heavy list of references (a twenty eight page bibliography with over four hundred and fifty entries), which are cited frequently in the text.

While the author indeed recognizes the social, economic and ethical aspects and dimensions of sustainability it is clear that her own strong bias is towards the pre-eminent role that can be played by

science and technology in this effort. For example, she states that – ‘there have been hundreds of definitions of sustainable agriculture and more still evolving to accommodate individual perceptions. This has resulted in a decline in clarity and rendered it a biased and value laden concept’ (page 47). It is indeed puzzling that the value ladenness is being stated in the nature of a ‘charge’ while it must be quite clear that there are indeed values such as equity and social justice that should figure in such definitions in a strong manner.

The book abounds in a large number of references to studies, reports, data and statistics. It constitutes a very broad pool of knowledge and data. Each chapter starts out with a good statement in terms of the general framework, which indeed draws upon a wide range of information and sources. By and large, the definition of the problem is quite satisfactory particularly, when it pertains to the physical aspects of the resource base such as land, water, irrigation, bioresources, etc. However, what is striking is that almost invariably the section containing the concluding remarks has little to offer as clear directions or suggestions. For example, chapter 13 ‘On challenges to global agricultural sustainability’ ends rather tamely with – ‘The nature and magnitude of these maladies put in doubt the adequacy of the business-as-usual approach and require out-of-the box thinking and human-centred solutions’ (page 302).

Even though the text is basically about a discipline that is holistic and this is recognized in her definitions, it does not stop the author from continuously bemoaning this very aspect of the subject. For example – ‘whereas ecological aspects are grounded in sciences and can be validated socioeconomic aspects are subjective, ephemeral, contextual and subject to divergent and conflicting views’ (page 3). This also leads to a strong tilt in terms of how the whole subject is viewed and treated. For e.g., in chapter 12 that deals with the measurement of agricultural sustainability she states – ‘ideally sustainability should be assessed holistically with reference to all its components: productivity, ecological effects and economic and social viability’ (page 254). However, she quickly goes on to find reasons why dealing with all these aspects simultaneously is ‘formidable’ and concludes that – ‘Partial indices with

reference to individual components are more practical and quite effective and can serve as early warning...’ (page 254). Having made this start, the emphasis in the chapter is completely towards biophysical productivity and she states in the concluding section that – ‘agricultural sustainability as a composite of productivity, ecological safety, economic viability and social justice is difficult to track in its entirety... partial indices of sustainability corresponding to these parameters such as biophysical productivity, TFP and soil quality serve as simple and practical indicators to monitor sustainability’ (page 261).

It is also disconcerting to see that despite a very large number of references the bias is definitely towards work and efforts carried out by research institutes and formal scientific institutions and hardly anything is said about initiatives at a ground level involving farmers groups or even traditional knowledge and wisdom. It is significant that in the last few decades there have been several such efforts in India, which do not find any mention in this book. A few examples are: (i) The All India Coordinated Research Programme on Ethnobiology of the Government of India had undertaken a very detailed survey of knowledge present in ethnic communities about the use of biodiversity. The mid-term technical report of the programme that was published in 1994 reveals that these communities have knowledge of use of about 9500 species of plants of which an incredibly large number like 3900 species are used for food (1). (ii) More recently, the Indian Council of Agricultural Research has undertaken a mission mode project for documentation of traditional knowledge relating to agriculture and have compiled thousands of practices from across the country (2). What is most interesting is that a selected number of these practices have been put to experimental test in research institutes, agricultural universities and Krishi Vigyan Kendras and over eighty five percent of the tested practices are found to be valid! Sadly, it appears that nothing is being done to put this to practical use by way of dissemination of results (2). (iii) For over fifteen years Prof. Anil Gupta and his colleagues at the Centre for Management of Agriculture in the Indian Institute of Management, Ahmedabad have been publishing a magazine called ‘HONEY BEE’ which is a

stupendous effort in terms of compilation of traditional practices relating to farming from across the country. Over the years it has become a forum for discussion between farmers and scientists and it has also resulted in the initiation of a large number of regional language versions of the magazine, which is now being produced in half a dozen languages from all over India (3). (iv) The Asian Agri-History Foundation for the past twelve years has launched a fascinating effort to produce excellent translations and editions of texts pertaining to traditional agriculture and have also published a series of articles on testing and validation of traditional agricultural practices (4).

It is puzzling at one level and understandable at a different level that various of these kinds of initiatives of great significance have totally escaped the attention of the author. The author is a highly distinguished academic and it is not surprising that the solutions that are sought by her for the problems are also sought in the institutions of agriculture in which the specializations are created and nurtured. Sadly, the author herself is taking the ‘business as usual’ approach and unable to see some rich – ‘out-of-the-box thinking and human centred approaches’ being tried all around – despite her wish to do so. One is reminded of the interesting quotation (attributed to Einstein) – ‘One cannot solve problems by using the same kind of thinking we used when we created them’.

In conclusion, one can say that the book indeed has much that is rich and positive. It is structured very systematically and each chapter is rich in the definition of the problem and the statistical references. It is packed with data and information. The book is produced very well and the layout and editing are excellent. Nevertheless, it ends up achieving the objectives that are set out only in a limited way. While the first part that presents a broad picture of global agriculture and the second part that deals with the operationalization are indeed very valuable, the third part that deals with transition to sustainable agriculture ends up offering very little. It is really annoying to read platitudes such as – ‘Countries such as India, with high growth in population and agricultural dominance need to concentrate on productivity growth and the creation of livelihoods in the farm and non-farm sectors to banish hunger

and poverty' (page 59) being offered as recommendations. One is left with the conviction that agricultural sustainability is too important a matter to be dealt with only by agricultural scientists and it would indeed need a broader approach that includes many other strands of thought and action, including those outside academic and research institutions, to provide the basis on which sustainable agriculture can be built.

1. Ethnobiology in India: A status report. All India Coordinated Project on Ethnobiology, Ministry of Environment and Forests, Government of India, New Delhi, 1994.
2. Inventory of Technical Knowledge in Agriculture. A Mission Mode project on collection, dissemination and validation of Indigenous Technical Knowledge. Document 1 compiled by P. Das *et al.* (Indian Council of Agricultural Research, New Delhi), June 2002. This is the first of a series of volumes published.

3. www.sristi.org/honeybee.html
 4. www.agri-history.org
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