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A Workbook of Practical Exercises in Coastal Zone Management for Tropical Islands, by P.R. Bacon; C.A. Deane and A.D. Putney, 1988. Commonwealth Science Council, London. 300p. stg. £14.00. ISBN 0-85092-33-6. May be purchased from Commonwealth Science Council, Marlborough House, Pall Mall, London SW1Y 5HX, England.

In these days of providing coastal zone management training, there is an obvious need for books of a practical nature. This workbook offers a series of exercises which illustrate a range of environmental, ecological and institutional aspects of the coastal zone management process in tropical islands. The exercises are intended for use during advanced training courses and are designed to give practising and prospective coastal managers 'hands-on' experience in a range of essential techniques. While

not all will agree on the selection of the exercises, this workbook fulfils an immediate need.

The workbook reflects the authors' varied background—zoology, coastal engineering and resources management—and relevant experience on the subject matter. As the authors are from the Caribbean area, the area focus is on this region but the general principles and suggested methodologies can be applied to other tropical islands. Many of the ideas have already been tested in training courses.

The workbook has a short introduction including a section on 'how to use the workbook.' It is essential for both the tutor and the trainee to read this section. For training purposes, the workbook demands a knowledgeable tutor in guiding the trainees. The 23 exercises are meant to be covered over a period of six weeks. The tutor should also consult Appendix 1 which serves as a guide in using the book for shorter training courses. Some advice is also provided for the trainee in using the workbook.

The workbook is organized around five topics in separate chapters, each having two to eight exercises. Chapter 1, which is on programme definition and baseline data acquisition, has three exercises on defining the scope of a coastal zone management programme, mapping coastal features, and interpreting aerial photographs. Chapter 2 deals with coastal development and impact assessment and has six exercises on assessing beaches, sitting coastal infrastructures, disposing wastes, monitoring water quality, preparing an Environmental Impact Assessment, and economic analysis. There are eight exercises in Chapter 3 on coastal area management planning; the topics range from preparing a data atlas, drafting a system plan, defining potential areas and selecting a management strategy for a protected area, drafting legal protection for a multiple-use area, zoning a natural area, and designing development and operation programmes for protected areas. Four exercises in Chapter 4, which is on coastal ecosystem management, deal with more specific aspects including assessing coastal ecosystems, habitat evaluation, calculating optimum sustainable yields for coastal resources, and planning recovery of damaged coastal ecosystem resources. Chapter 5 is on risk assessment and contingency planning and has two exercises on predicting coastal flood hazard and oil spill contingency planning. These chapters are supple-

mented by useful appendixes dealing mainly with methodologies. The two-page index also gives some idea of the extent of coverage on coastal zone management in this workbook.

In Appendix 1 the authors have indicated from their point of view the level of conceptualization and skill training in the exercises: scoping (1 exercise), resource inventory (4), resource assessment, data organization and representation (8), analysis and management decision-making (4), and advancing planning (5). The status of exercise 6 in Chapter 2 has not been indicated but it could be included in analysis and management decision-making.

Generally the 23 exercises follow a common format, *viz.* background statement, aim, duration to complete exercise, suitable location, materials required, instructions, expected result, interpretation, case study, alternative exercises, and further readings. In practice, it would take longer than the stated time to complete each exercise, ranging from a few hours to several days. The amount of discussion generated depends on the tutor's experience, the amount of available information and the background of the trainees. The level of difficulty would vary with the background of trainees too, *e.g.* trainees with zoology background would be able to identify corals better than other trainees. Overall, the level of exercises is pitched for trainees with at least a basic degree that includes some knowledge or experience of the coast.

A significant feature of the workbook is its flexibility for teaching. The flexibility is not only in the planning of courses based on the workbook but also within each exercise. The exercises can be simplified or adapted for other case studies or other areas, based on the tutor's experience and available information. From the information given on alternative exercises, experienced tutors can develop additional exercises. In this respect, the workbook becomes a helpful handbook in structuring other techniques and concepts into workable exercises related to coastal zone management.

Other coastal researchers will find the workbook of value. Those with a first degree in an environmental science can use the workbook as a ready handbook for some aspects related to the coast. The workbook would be equally invaluable to those who wish to do some self-

improvement in the area of coastal zone management and at one's own pace.

For the generalist or specialist in coastal zone management it is worth spending the £14 on the workbook. The reviewer looks forward to an expanded second edition in which more exercises can be included and from other tropical islands of the world. After much handling, the pages of the present workbook keep falling off and perhaps the publisher should consider an improved book spine for future reprints or editions.

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Quaternary Coastal Changes, edited by Paulo Pirazzoli and David B. Scott, 1989. Special Issue of *Paleogeography, Palaeoclimatology and Paleoecology*, Volume 68, Parts 2-4, Pages 97-348. Elsevier, Amsterdam. No Price. ISSN 0031-0182.

This collection of eighteen papers forms another contribution to the hugely successful IGCP-200 Project on 'Late Quaternary Sea-level Correlation and Applications.' The volume comprises something of a 'mixed-bag', both in terms of subject matter, geographic area and geologic timescale. Nonetheless there are many good things to reflect upon.

The chief focus is, understandably given the thrust of IGCP-200, on sea-level, although the title of the volume doesn't convey this. The papers include studies of both relative sea-level rise and fall. The volume is produced to the usual high standard of Elsevier.

Almost all the papers are based firmly on morphological or morpho-sedimentary analysis, supported by a range of isotope dating techniques. The studies embrace a thoughtful summary of 'zonality' by Kelletat, which, had it been available to the other authors in this volume, might have influenced their thinking, as well as quite detailed examinations of specific problems, like the Main Rock Platform of western Scotland, a subject that has felled a considerable area of forest in the last thirty years. The essay by Forsstrom *et al.* is refreshing, if only because it grapples with the problems of land emergence, which most of the 'submerging'