Book Review

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Coastal Processes and Landforms: Case Studies from the Konkan Coast of Maharashtra

by Shrikant Karlekar

Published in 2009 by Diamond Publications, Pune. Contains 38 Tables, 51 Figures, 27 B&W Photos and 196 references in X+255 pages. A5 Size. Price: Rs 300/-.

The Konkan coast with its characteristic landscape of bays and headlands forms a fascinating area of study to any student of landforms. In this book Shrikant Karlekar presents an account of the region's geomorphic diversity through some 20 location-specific studies authored by himself and 11 invited authors who wrote most of the case studies. This has rendered the book flavour of an edited volume, held together by Karlekar's accounts of regional characteristics. This style intrinsically provides detailed information on a given geomorphic or environmental aspect of a specific landform unit but prevents the reader from getting a comprehensive picture of the entire area. The work is loosely divided in four sections that incorporate accounts of (1) regional individuality and geology, (2) processes and sea level changes, (3) landforms and (4) economic and environmental aspects.

Unfortunately, the book incorporates a number of ambiguities and misrepresentations that make it difficult for the reader to relate the processes and the huge amount of data presented in the volume. A case in the point is the study of seasonal variations of Tambaldeg dunes. Here, horizontal displacement of dune base and increase in dune elevation are recorded up to 240 m and 8.4 m respectively but there is no mention of the interval of observations (p 110). It is not clear whether the data represent average of several years' study or pertain to one particular year. Does this mean that the dunes are simultaneously migrating and gaining height with no decrease in altitude in the following season or year(s)? In the accompanying diagram (Fig. 3.15) two contour maps illustrate 'dune elevations in monsoon and fair weather' again with no mention of year or month.

Many similar examples can be cited from the book which could have been averted with some attention to details that is expected from a publication of this standard. To mention a few, • the age of Deccan lava is written as 30 Myr in the opening paragraph of the book (p 1) although it is widely known to be ~65 Myr old. • Intergovernmental Panel on Climate Change is written as International Panel on Climatic Change (p 23). • The highest sea level attained at the Indian west coast is both presented as 1–3 m asl (p 24) and as 6 m asl (p 22 and 26). • It is stated that maximum slope attained by the Konkan beaches during monsoons is 7°–11° which, in fair weather, reduces to 2°–3°or even less (p 57). This seems to be rather an unusual range and difficult to generalise. • It is observed that during winter 'high

steep' storm waves erode the beach face in Konkan (p 59), which is an impossibility. • The beach at Kashid is described as microtidal but its tidal range is given as 2.5, in the mesotidal range (p 67). • As can be gathered from the text (p 134), Table 3.12 relates height and survival rate of *Rhizophora* saplings to sediment texture and distance from low water level of Kelshi creek, presumably within an interval of six months. However, the caption of the table is simply given as 'Survival rate of mangrove seedlings in the Konkan creeks'. It is difficult to see how a local short-term study involving just one species can be generalised to represent 'the Konkan creeks'. Similar discrepancies occur in a number of table and figure captions throughout the book. • In the study on creek erosion problem at Devbag, velocity of longshore current is given as 8–20 m/s in post-monsoon and 30–40 m/s during rest of the year (p 207). This sort of errors (m in place of cm) often causes problems for the uninitiated wishing to use the book as a reference.

A major difficulty in using the book is that it offers little help to a reader unacquainted with Konkan in finding the locations of numerous creeks, beaches and places liberally mentioned in the texts. Most place names appearing in Figures 1.2 through 1.5 are illegible. A larger map of Konkan, complete with indexing (may be as a fold-out or within a pocket) would have been welcome. On the other hand, it is unusual that exactly the same map of Konkan is used thrice in the book for showing locations of study sites (Fig 2.1), beaches (Fig. 3.1) as well as creeks and estuaries (Fig. 3.16). There are many inconsistencies in other diagrams too. e.g., in Fig. 3.6, sedimentary deposits at the northern part of the Revas beach is shown to be sands but in the following diagram (Fig. 3.7) it is shown to be constituted of 'mud platforms'.

In addition to the topics discussed in the work, it could have included discussions on recent sea-level fluctuations based on tide-gauge data since Mumbai has got the longest (112 yr) record of such data in India. As per India Meteorological Department records, the Konkan coast was struck by 15 tropical storms between 1891 and 2009 — an inventory on this aspect would have been welcome. It also lacks elaboration on some interesting features of the Konkan coast like taffonis and honeycombed structures of cliff walls, rock patterns on the platforms and regional differences due to the effects of rock structure, exposure to waves and tidal ranges.

Not all references cited in the text appear in the back of the book and the reference list unfortunately omits some significant works on geomorphology of Konkan coast that would have otherwise enriched the publication.

However, despite these shortcomings, the book definitely enriches the literature on coastal studies in India and provides deep insights into short term (typically 2–3 yr) coastal process-response systems operative at local level. It definitely forms a valuable addition to anyone wishing to learn about the Konkan coast and opens up many research opportunities for the future.

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