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**Special Issue**

**on**

*Coastal & Marine Biodiversity of Indian Ocean*

*Guest Editor*

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## *Preface*

Theories of biological evolution state that species that are least adapted to changes of the environment disappear and those that adapt eventually evolve into new species. Such losses and gains have occurred over scales of thousands of years in the past and have generally remained in balance save for events of natural catastrophes. However, during the last one or two centuries, we have been losing species at an alarming rate. Nowhere is this fact so well demonstrated as in the list of extinct and endangered species that has grown rapidly in the last few decades and continues to do so, i.e., the current rate of species extinction has been estimated to be of the order of 100-10,000 per year, compared with the 1 or so per year prior to the 'evolution of people'.

With every species lost, we lose not only a biological specimen but also the ecological, economic or livelihood security the species could offer the mankind. And sadly, we don't even know what we lose, since what we know of the diversity of species existing on the earth is only a fraction of what is thought to occur. This particularly is true of the oceans where our current inventories yield no more than 40,000 species whereas a conservative estimate of all the species from the 32 phyla in marine waters is 2,00,000. The latter could easily be an order or several more of magnitude higher if organisms from extreme habitats and all micro-organisms are included.

It was with the objective of knowing in a more systematic and comprehensive way what lives in our oceans and being able to foretell what would eventually live there in the face of changing oceanscape and its environment that the international program on Census of Marine Life (CoML) was launched in 2000. Nowhere in the history of time has there been a more opportune moment as of now for a project like CoML. As the program began to take shape, the Scientific Steering Committee of the CoML realized that, given the vast differences in cultural and social attitudes and the economic and technological developments between regions of the world, its objectives are best served by enhancing the role of regional players and turning to advantage the sense of ownership this brings in. Thus were born regional nodes including the Indian Ocean node of Census of Marine Life (IO-COML), with the convening of a workshop on coastal and marine biodiversity of Indian Ocean countries at Goa (India) in December 2003.

A total of 32 presentations on various facets of coastal and marine biodiversity were made in this workshop. Fourteen out of them got translated into written texts, passed through peer reviews and form collectively this special issue of the *Indian Journal of Marine Sciences*. The subjects covered by them range from national and regional inventories through management of databases to monitoring changes of biodiversity at various levels of skill.

It is not what these papers tell us but rather what they don't, that is of great concern. In spite of the notion that Indian Ocean is among the richest reservoirs of biodiversity, inventories from very few countries are reasonably robust. Such inventories again concentrate on groups that are economically important, mainly of food value, but not on many others such as soft corals or sponges that could harbour bio-molecules of immense health value. Most inventories again relate to some easily accessible sites, leaving out

often several ecosystems as a whole, like the deep-sea mounts. Our ability to build up the knowledge of what lives in the seas of our region is constrained considerably by the dwindling taxonomic expertise and the slow progress, if any, in using modern tools like molecular taxonomy or information technology as replacements. We are still unsure of how natural and man-made changes to environment or the overuse of resources could impact on biodiversity in the long run. Nor are we clear on how we could mitigate these, within the scientific, social and economic contexts of the region, so that our ability to predict what would continue to live in our seas in the immediate and foreseeable future is strengthened.

A silver lining through all these is the willingness of the countries in the region to work together and share their knowledge and expertise. The Indian Ocean portal of the Ocean Biogeographical Information System (IndOBIS) symbolizes this. It is but one step in the right direction and I sincerely hope that collectively we would be able to take several such steps rapidly so that we could still manage to protect fully and benefit from the most important resource Mother Nature has ever provided the mankind with.

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