'Ocean Biogeographic Information System', which is a good database of marine plant and animal species. The genetic databases of marine bacteria have also been created, for example, the Micro Mar project database in Spain and the MIBC strain database in Japan.

One way to distribute the royalties from the common royalty pool could be as follows: the royalties to be set at 10% of the market price of the drug or any product generated directly or indirectly from any marine organism (industry standard for royalties is between 1 and 7%, the higher royalty is to take care of the absence of any upfront payments). A fixed proportion of the benefits is to be spent on the monitoring expenses of the IMBA, and rest of the benefits to be distributed among the member-nations of the UN.

The sharing could be based on a formula that would take into consideration a combination of the country's GNP, the area of its EEZ, and its population. How the variables are positioned and weighted and which other variables are to be added, could be negotiated among the signatory nations.

The IMBA is also intended to act as a facilitator to transfer techniques of marine bioprospecting and related technologies among nations and help to set up knowledge-intensive industries that use marine biotechnology. Magnanimous support of the developed countries is needed in transfer of technologies and scientific training, to properly access the wealth in the EEZ of the developing countries.

This idea of mutually bioprospecting the EEZ and the associated benefit-sharing scheme could begin with organizations like SAARC, ASEAN, BIMSTEC, etc.

The institutional mechanism that would evolve out of such regional treaties could be extended globally by the UN and include in its purview the high seas. To conclude, any nation, if it has to enter into the new global economy, has to do so with whatever capital it may have. The intellectual capital in the form of a nation's marine genetic resource could as well be one of the vehicles to carry forward the economy of the developing countries in this new millennium.

If there is further delay, matters may get complicated and emotive as those in land-based genetic resources, where multiplicity of both national and international laws try to regulate the access and benefit-sharing.

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Kolleru regains its grandeur

Kolleru, one of the biggest shallow, freshwater lakes in Asia, is located between the alluvial plains of Krishna and Godavari rivers in Andhra Pradesh (AP). The lake serves as a natural flood-balancing reservoir for the two rivers and has sustained the rich native flora and fauna. It is an ideal habitat to nearly 189 local and migratory bird species, including rare and endangered birds like Spot-Billed Pelicans (*Pelecanus philippensis*), Painted Storks (*Mycteria leucocephala*) and Oriental Darter (*Anhinga melanogaster*). Being a wetland of international importance, this area has been declared as a Ramsar site in 2002 and the Government of AP had earlier declared the lake as a wildlife sanctuary in 1999. The lake has four main rivulets, viz. Budameru, Ramileru, Tammileru and Bulusuvagu draining into it. Most of them are blocked either with aquatic plants or eutrophicated by invasive exotic weeds. Apart from these, nine major drains and seven medium drains empty their water into the lake. There is only one outlet called Upputeru, which runs for a distance of 64 km and connects to the Bay of Bengal. The lake was exploited by local people who dug thousands of fish tanks illegally, thus effectively converting the lake into a drain. Extensive encroachment of the lake for intensive agriculture, using chemical fertilizers and pesticides, rotten animal wastes for fish feeding, and flow of municipal sewage and industrial waste into the lake make the water so polluted that it was difficult for both flora and fauna to survive. Most part of the lake was getting eutrophicated due to discharge of nutrient-rich water, high quantity of fertilizers and highly toxic pesticides from fish tanks. Formation of fish tanks fragmented the lake, which lost hydrological contact leading to uncontrolled flooding during periods of heavy inflow of rain water. Heavy dredging drastically changed the natural flow of water into the lake, leading to elimination of aquatic biota.

Now the lake is regaining its splendour after the State Government demolished all illegal fish ponds backed by a standing order from the Supreme Court of India. According to the Asian Waterfowl Census report, an increase in the number of migratory birds has been observed after demolition of fish tanks (Figure 1). Conservative estimates of the organization indicate that for the first time in the current year, over 80,000 birds of about 100 species have flocked to the lake during the migratory season that lasts till March. The local fishermen are now engaged in traditional fishing for sustaining their livelihood. After demolition of the bunds, aquatic plants with proportionate herbaceous flora have come up all over the lake area. This invites a lot of bird species and other animals for selection of

Figure 1. Flock of birds in Kolleru lake.

their habitat and collection of food. The local inhabitants are reaping benefits through traditional fishing and using several plant species for their daily requirements, i.e. for food, shelter and medicine. Many are being given rehabilitation packages to start alternate livelihoods. To augment the fish population, the local fish varieties are distributed to the local fishermen. The lake Kolleru has regained its past glory due to actions taken by the State Government with collaboration of villagers. Further studies should be conducted on wetlands in other parts of India, which are facing similar kind of treatment and a structured action plan should be prepared for those violating the law.

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Distribution and status of the endangered Nilgiri tahr

The Chennai edition of *The Hindu* dated 24 November 2007 carried an article on conservation breeding of endangered mammals. The proposed conservation initiative of the Government of India targets a few species of mammals, including the Nilgiri tahr (*Hemitragus hylocrius*), that are endemic to the Western Ghats. The article suggests that the population size of the Nilgiri tahr presently stands at 3500 and reintroduction of captive-bred animals will improve the conservation status of the species.

The article has certainly reiterated the need for more dedicated conservation efforts on less charismatic species like the Nilgiri tahr. Nevertheless, we contend that both the estimated population size and the proposed conservation strategy presented therein are rather unrealistic. The reasons for our skepticism are presented here.

One of the recent checklists of the world's extant mammals includes 34 species[1] of caprine ungulates (goats, sheep and allies). And among the extant caprine ungulates, the Nilgiri tahr has the unique distinction of being the only species that is endemic to tropical mountains[2]. The Nilgiri tahr is one of the three species known in the genus *Hemitragus*. While it is generally accepted that the three species of tahr are the descendants of an extinct Eurasian ancestor[2], some biologists believe that the Arabian, Himalayan and Nilgiri tahrs have had varied ancestry and that the Nilgiri tahr should be placed in an endemic monotypic genus, *Nilgiritragus*[3]. In spite of the taxonomic uncertainties and debates, the fact that the Nilgiri tahr is a Pleistocene relic in the Western Ghats[2] enhances its conservation value.

During the year 2006, the Wildlife Trust of India (New Delhi) sponsored a short-term survey of the Nilgiri tahr[4]. Although the duration was only four months (May–August), the study had several merits. To begin with, it is noteworthy that the 2006 survey was the first attempt that was made to assess the habitat, distribution and population size of the Nilgiri tahr over its entire range after a gap of over two decades. Further, with the cooperation and support of the Forest Departments of Tamil Nadu and Kerala, the study provided us opportunities to visit some remote localities where there have not been any recent surveys made (Care Earth and Wildlife Trust of India, unpublished).

The key finding of our recent study is that the population size of the Nilgiri tahr may not be more than 2000 at present (Care Earth and Wildlife Trust of India, unpublished). An analysis of census data for four decades, beginning in 1969, available for Eravikulam National Park, Mukurthi National Park and Indira Gandhi Wildlife Sanctuary and National Park, has suggested that the number of Nilgiri tahrs has fluctuated considerably even where the species has enjoyed 75–100 years of protection. The discernable trend has only pointed to population decline in two out of three of the dedicated Nilgiri tahr conservation areas[4]. The primary reasons for the decline in the number of Nilgiri tahrs are loss of habitat and hunt-