Valuing Ecosystems - A Key Prerequisite for the Sustainable Management of Natural Resources

By

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Managing coastal zones implies managing biodiversity. Biodiversity is a clear example of the "global commons", as actions taken in one region or country affect others beyond their geographical limits. Species and ecosystems do not often recognise international boundaries, but even when they do, their link with the well being of the planet precludes local decisions from having only local impacts. Biodiversity is one of the Earth's most valuable assets and its loss may diminish the welfare of present and future generations. Yet, biodiversity and ecosystems are under serious threat! For example, the worldwide loss of tropical rainforest caused by human intervention is around 12 million hectares per year. Stemming from this deforestation, around 100 species are lost every day. Marine ecosystems are faring no better. Coral reefs, for instance, are severely affected by human influence through destructive fishing practices, coral mining, marine pollution and sedimentation. At several locations of renowned coral reefs sites in Kenya, Tanzania, the Maldives and Palau over 90% of the hard corals died. Freshwater ecosystems are equally threatened, with an estimated 20% of the world's freshwater fish extinct, threatened or endangered. Overall, in aquatic areas, humans increased their alteration of waterways by almost 250 000 per cent in 300 hundred years.

Not all alterations of ecosystems are automatically detrimental. They may even be necessary to achieve sustainable development. Yet, managing them in a way that would allow sustainable use and conservation of natural resources is fundamental. This is one of the major challenges we are facing when we look after our aquatic or terrestrial ecosystems. The urgently needed policies should take into account that biodiversity degradation in general and ecosystem loss in particular are related to the failure of markets to properly value environmental services and regulate their use. While some may enjoy benefits of over-exploitation, many are left bearing the costs today and in the future. Adequately accounting for these costs and benefits are thus crucial if sustainable use and conservation of natural resources is to be achieved. Valuation is needed to assist policy makers in identifying priorities and evaluating trade-offs, and its importance is slowly being understood in the international forum as well. For example, the Convention on Biological Diversity (CBD), through the Conference of the Parties (COP), recognises that "economic valuation of biodiversity and biological resources is an important tool for well-targeted and calibrated economic incentive measures". Furthermore, it encourages the Parties to "take into account economic, social, cultural and ethical valuation in the development of relevant incentive measures" (CBD COP Decision IV/10). OECD highlights the importance of revealing the economic value of biodiversity in its Environmental Outlook, and OECD Environment ministers made it a pillar of the institution's strategy.

The main valuation methods can be divided in two categories. Revealed Preferences methods attempt to separate out the amount people pay for given ecosystem products or services from the total bundle of services and goods they may be purchasing (e.g. travel cost methods, market prices etc.). Stated Preferences techniques rely on questionnaires to assess people's preferences (e.g. contingent valuation, contingent ranking etc.). Which method to use depends on our initial objectives, cultural aspects, even in

the ecosystem being studied, among other factors. Values may take at least two forms such as Use (direct, indirect and option values) and Non Use (existence and bequest values).

Carefully assessing the value of ecosystems is important for both project analysis and policy design. Regarding project analysis, valuation could ultimately assist project managers in assessing the net benefits of undertaking an effort to conserve a particular ecosystem or to utilise it sustainably when potential market gains are present. Likewise the different methodologies could be used as policy tools in advising policy makers on large-scale projects and broader policy measures. The latter is particularly important if one considers that adequate policy instruments are key in addressing market failures. This can also help in the effort to mitigate perverse incentives, which have little economic basis and encourage ecosystem-damaging activities, being particularly prevalent in OECD member countries. For example, estimates indicate that direct subsidies to agriculture in OECD countries amounted to as much as US $ 361 billion in 1999, while government support for marine capture fisheries amounted to US $ 6.3 billion. While some of these may be environmentally enhancing, the majority unfortunately contributes to further destroying our natural resource base.