

BioSoc: the Biodiversity and Society Bulletin

Research highlights on biodiversity and society, poverty and conservation

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ECOSYSTEM SERVICE AND HUMAN WELL-BEING – WHERE DOES BIODIVERSITY FIT IN?

The Millennium Ecosystem Assessment (MA), published in 2005, was instrumental in raising awareness about the nature and state of different ecosystem services and their contributions to human well-being. The MA conceptual framework shows biodiversity underpinning the provision of ecosystem services, but what do we really know about this linkage and the subsequent implications for poor people? A new report by the UNEP-World Conservation Monitoring Centre sets out to unravel the current state of knowledge on the links between biodiversity and ecosystem services in order to help shape development policy in this field.

A number of studies exist that show a relationship between increased diversity and improvements in certain ecosystem functions. Nevertheless, it is also clear that not all existing diversity is strictly necessary – i.e. there is a certain amount of “redundancy”, at least at the global level, in the provision of some services:

- Of the approximately 270,000 known species of higher plants, only 30 are required to provide 90% of the world population's calorific requirements – although genetic diversity can be incredibly high
- Only 14 species of livestock account for 90% of global livestock production
- Monoculture plantations can have higher productivity than natural forests on high quality sites.

Furthermore, many ecosystem services supported by biodiversity can be substituted (at least partially) by technology: clean air and water can be obtained from mechanical filtration; manufactured materials can be used in place of timber for housing or fibre for clothing; water conservation can be achieved through monoculture plantations as well as natural forests. From a poor peoples' perspective, however, biodiversity is critical since they are less able to pay for technological substitutes and are more directly dependent on ecosystem services. In particular, the health and productivity of agricultural systems with high crop diversity tends to be more stable over time than low-diversity systems – and this has significant implications for poor people's vulnerability and their ability to adapt to environmental change. The poor are also widely reliant on natural medicines, with over 50,000 plant species in use for medicinal purposes.

One of the problems in understating the link between biodiversity and ecosystem services appears to boil down to how we define biodiversity – particularly, whether we are only interested in richness or diversity *per se*. In many cases it is the presence of specific species or combinations of species that provide critical ecosystem benefits - such as the role of mangroves in coastal protection, of wetlands in water purification, of sacred species or habitats in cultural identity.

WCMC contends that this particular reliance of the poor means that development agencies have an important role to play in working to ensure more coherent policies at international level as well as in partner countries. It also implies attention to internal agency processes including environmental assessment procedures, MDG delivery plans and aid delivery instruments such as budget support and sector-wide approaches. Development agencies have a wealth of experience on natural resources management. Biodiversity management is often one and the same thing. Sharing that wealth of experience may be a simple, but critical first step in enhancing the wealth of the poor.

SOURCE

Ash, N and Jenkins, M (2007). *Biodiversity and Poverty Reduction: The Importance of Ecosystem Services*. UNEP-World Conservation Monitoring Centre, Cambridge

The report is available to download from: <http://www.unep-wcmc.org/latenews/Biodiversity%20and%20Poverty%20Reduction%20UNEP-WCMC.pdf>

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BIOSOC

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