

Biodiversity, Climate Change, and the Millennium Development Goals (MDGs)



BIODIVERSITY AND CLIMATE CHANGE: LINKS WITH ENVIRONMENTAL SUSTAINABILITY

Climate change is threatening biodiversity, compromising the achievement of the United Nations Millennium Development Goals (MDGs). Biodiversity conservation and maintenance of ecosystem integrity are essential to the reduction of people's vulnerability to climate change and to the achievement of the MDGs.

MDG 7: ENSURE ENVIRONMENTAL SUSTAINABILITY

Targets for the seventh MDG are to: i) integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources; ii) halve, by 2015, the proportion of people without access to safe drinking water; iii) achieve, by 2020, a significant improvement in the lives of at least 100 million slum dwellers.

Role of biodiversity in ensuring environmental sustainability

Biodiversity plays an important role in ecosystem functions that provide support, provisions, regulations and cultural services essential to human well-being. For example, people rely on biodiversity for food, medicine, raw materials, and ecosystem services such as water supply, nutrient cycling, waste treatment and pollination.

Over the last century many people have benefited from conversion of natural ecosystems to human-dominated ecosystems and the exploitation of biodiversity. However, these changes have also caused a decline in human well-being. According to the Millennium Ecosystem



Women at water pump, Jaisalmer, India. Photo courtesy of Jason Shields.

Assessment¹, biodiversity loss and deteriorating ecosystem services contribute — directly or indirectly — to worsening health, higher food insecurity, increasing vulnerability, a decrease in material wealth, and worsening social relations, including less freedom of choice and action.

Impacts of climate change on environmental sustainability

Climate change is likely to have significant impacts on our ability to achieve MDG 7. The effects of climate



Women from rural Ethiopia carrying bundles of wood. Photo courtesy of Studio DC/www.flickr.com.



Women in Thailand working on mangrove reforestation. Photo courtesy of UNDP/GEF Small Grants Programme.

change may alter the quality and productivity of natural resources and ecosystems. These changes may reduce biodiversity and compound existing environmental degradation.

Changes in rainfall patterns, greater periods of drought, and saltwater intrusion into freshwater reserves are likely to increase drinking water shortages.

Rising sea levels may cause loss of arable land in coastal areas and, may severely affect people living in flood prone areas, leading to their displacement. For example, the Lateu settlement, located in the Pacific island chain of Vanuatu, was recently relocated to escape the rising seas².

Climate change will also have an impact on biodiversity resources that support sustainable ecosystem functions. In fact, climate change is already forcing species to adapt either through shifting habitat, changing life cycles, or the development of new physical traits. Species that cannot adapt face extinction.

Biodiversity and climate change considerations for the achievement of MDG 7

It is clear that the world's climate is changing and it is equally clear that biodiversity resources are being lost. Biodiversity loss is having an obvious negative impact on the sustainability of ecosystem services. This hampers efforts to achieve — not just MDG 7 — all Millennium

² Capacity Building for the Development of Adaptation Measures in Pacific Island Countries. Pacific Regional Environment Programme (SPREP). Online at www.sprep.org

Development Goals. On the other hand, biodiversity conservation and sustainable use can significantly enhance efforts to achieve MDG 7. This, however, cannot be accomplished without taking into account the impacts of climate change on biodiversity and related ecosystem services.

Considering climate change issues when designing response activities is essential for ensuring environmental sustainability. Biodiversity conservation activities that address the impacts of climate change mitigation and adaptation also help achieve MDG 7. For example, from 1992 to 2000, a group of 17 villages in the drought-prone Bara Province in Western Sudan took part in a project to rehabilitate overexploited and highly vulnerable rangelands through the use of community-based natural resource management techniques³. The project's objective was to create a locally sustainable natural resource management system that would both prevent overexploitation of marginal lands and rehabilitate rangelands for the purpose of carbon sequestration, preservation of biodiversity and reduction of atmospheric dust. As a



Floating market at the Island of Sitangkai, Tawi-tawi, Philippines. Photo courtesy of Farley Baricuatro.

result, 700 hectares of rangeland were improved and properly managed. With improved land management and a more secure environmental and social asset base, communities were able to increase their resilience to climate change impacts.

³ GEF-Funded Project. Community Based Rangeland Rehabilitation for Carbon Sequestration. Online at www.thegef.org