

# **Biodiversity and the Millennium Development Goals**

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## **Introduction**

The variety of life forms on earth, including genes, species and ecosystems, is known as biological diversity or biodiversity. Loss of biodiversity results in serious reductions in the goods (such as food, medicine and raw materials) and services (such as clean water and nutrient cycling) provided by the earth's ecosystems, which make human survival and economic prosperity possible (Anonymous 2002).

The Millennium Development Goals (MDGs) were formally established when the United Nations General Assembly adopted the Millennium Declaration in September 2000. Adoption of the Millennium Declaration paves a significant way to addressing issues of poverty eradication and sustainable development. Through a set of targets and dates, the MDGs provide a framework for measuring development progress. They also reinforce the commitment of the international community for a comprehensive and integrated approach to sustainable development.

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Biodiversity plays an important role in ensuring that the targets of the MDGs for sustainable development are successfully achieved. However, the links between biodiversity and the path to achieving the MDGs have not been made explicit. The first section of this paper provides an introduction to the benefits of biodiversity and the Millennium Development Goals. The importance of biodiversity to development objectives is also discussed in the context of the WEHAB Initiative and the Convention on Biological Diversity. The second section of this paper provides a more detailed discussion of the role of biodiversity in achieving the targets of each of the MDGs. The third section considers links between climate change, biodiversity and the MDGs. Finally, section four provides the conclusions and recommendations for ways forward and future activities.

### **Biodiversity**

Through the provision of biological resources and ecosystem services, biodiversity is an essential component of human development and human security. Through agriculture, forestry and fishing, biodiversity provides crops, timber and fish and contributes significantly to national economies and employment. Ecosystem goods range from food and water to timber and fodder to genetic resources. In addition, ecosystems provide essential services including nutrient cycling, air and water purification, flood and drought mitigation and soil production, free of charge. These services cannot be replaced at a reasonable price (WRI, 2002).

The direct economic benefits of biodiversity run into trillions of dollars per year (Costanza *et.al.* 1997). Some of the significant benefits include: an annual market value of crop production in the United States to tunes of about US\$40 billion which is completely dependent on insect pollinators; biological pest control that saves an annual revenue of US\$ 100-200 billion; and, biological nitrogen fixation has an estimated annual worth of US\$50 billion. While recognition of the values of the goods and services that biodiversity offers – both direct and indirect – is increasing, the relationship between the role of biodiversity in environmental sustainability, poverty reduction and sustainable development needs further attention and understanding.

### **The millennium development goals**

The Millennium Development Goals (MDGs) were formally established when the United Nations General Assembly adopted the Millennium Declaration in 2002. They address issues of poverty eradication and sustainable development through a set of targets and dates. Achieving these targets is the responsibility of national governments.

One of the significant features of the MDGs is that they seem to focus on developmental issues, leaving options of how to implement actions to achieve the goals open for interpretation. Goal 7 of the MDGs focuses on ensuring environmental sustainability without any explicit mention of the role of biodiversity and natural resources. However, the role of biodiversity in ensuring that the targets of the MDGs are successfully achieved is well recognised. Attempts are being made to mainstream biodiversity into not only MDG 7, but also across other MDGs, as achieving the targets of the MDGs will directly or indirectly impinge on the status and use of biodiversity.

### **Convention on biological diversity**

One of the landmark outcomes of the 1992 Earth Summit was the adoption of the Convention on Biological Diversity (CBD), which has so far been ratified by 189 countries. The CBD focuses on conservation of biodiversity, sustainable use, and fair and equitable sharing of benefits arising out of the use of biodiversity. The CBD is one of the most important international conventions and is implemented widely and in many cases effectively.

Discussions through the CBD Conference of Parties set an international agenda to reduce the rate of loss of biodiversity by 2010. The so-called “2010 targets” are currently under discussion and indicators, measures and options are being identified. A significant element of CBD is the underpinning it provides for sustainable development through biodiversity conservation. It is thus imperative to link CBD both to MDGs and WEHAB principles. The following Table 1 provides linkages between biodiversity and livelihoods (Koziell 2001), which exemplifies the need for an integrated approach for biodiversity conservation and sustainable livelihood development.

**Table 1: Livelihood and biodiversity change scenarios**

	<b>Livelihood Improvement</b>	<b>Livelihood Decline</b>
<b>Biodiversity maintained or increased</b>	<b>1.</b> Poor and indigenous communities (with marginal agricultural potential) will maintain and enhance biodiversity – either because they have no purchasing power to obtain commercial products and therefore no alternative support for their livelihoods, or because they choose to, for cultural or religious reasons.	<b>2.</b> Exclusionary PAs that yields conservation benefits for the international community, but at a cost to local communities whose access to resources is restricted.
<b>Biodiversity loss</b>	<b>3.</b> Land is converted to industrial agricultural plantations of high-yielding varieties for domestic and export markets. Efficiency gains from economies of scale can reduce product prices, benefiting the urban poor, who spend up to 80 per cent of their income on food.	<b>4.</b> Intensive and large-scale extraction of resources such as timber by distant companies can lead to losses of other biological resources, such as NTFPs, which may be critical sources of income or subsistence food for small-holder agriculturalists.

*Source:* Koziell 2001.

A DFID, IUCN and EC study on identifying the role of biodiversity in development identified the following seven principles as the guiding principles for biodiversity in development cooperation. The key underlying understanding is the fact that biodiversity is not just a measure of sustainable development or a concern of environmentalists, it is essential for many people's lives.

### **Some specific issues and operational options to link CBD targets and achieving MDGs**

After the adoption of MDGs by the UN General Assembly in September 2000, various fora acknowledged the important relationship between biodiversity and the MDGs. In April 2002, the 6<sup>th</sup> Conference of Parties to the Convention on Biological Diversity, recognizing that biodiversity underpins sustainable development, established 2010 as the target year for halting biodiversity loss. In May 2002, UN Secretary General set out the five WEHAB priorities for the World Summit on Sustainable Development (WSSD). The WSSD Plan of Implementation called for actions from all sectors to significantly address reducing the rate of loss of biodiversity.

Considering the importance of addressing issues of mainstreaming biodiversity into MDGs, IUCN Regional Biodiversity Programme, Asia in collaboration with UNDP and Government of India, organized an Asia Regional Workshop on the issue in India between 6-11 April 2003. The recommendations from the workshop form the basis for this section and the recommendations are detailed as specific activities under each of the MDG as they relate to issues of biodiversity. In addition, UNDP, UNEP-WCMC and others organized an international workshop on addressing the issues of biodiversity in relation to MDGs and WEHAB (The 'Biodiversity after Johannesburg' meeting in London), outcomes of which also encourage the need to address synergies between MEAs, mainstreaming biodiversity into MDGs as options to achieving sustainable development.

### **Goal on poverty and role of biodiversity**

#### ***Goal 1 - Eradicate extreme poverty and hunger***

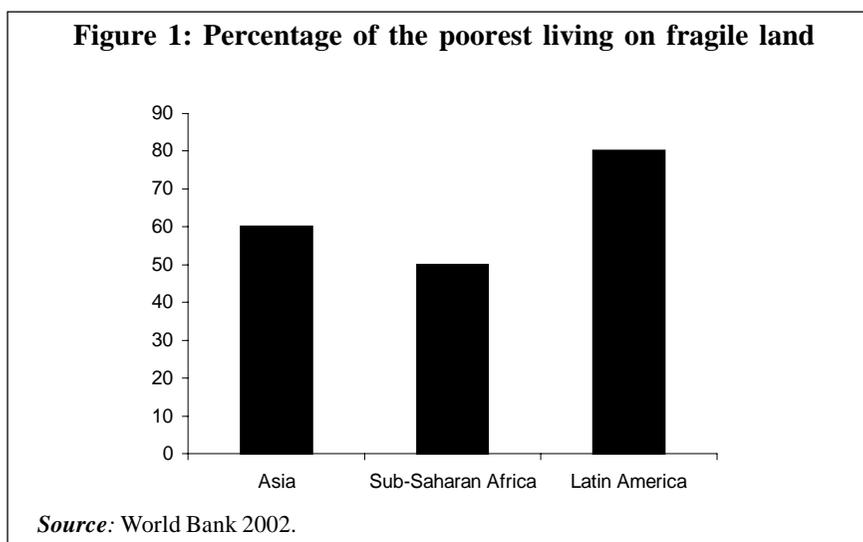
Targets: Halve, between 1990 and 2015, the proportion of people whose income is less than \$1 a day; and halve, between 1990 and 2015, the proportion of people who suffer from hunger.

The Millennium Development Goals reflect the multifaceted nature of poverty, with each goal illustrating a different aspect of poverty. The MDGs are an attempt to operationalise the multidimensional approach to poverty, focusing on selected indicators. Since biodiversity impacts issues of poverty, a focus on using biodiversity equitably and sustainably is fundamental to strategies and actions to eradicate/reduce poverty and to achieve sustainable development.

***Links between biodiversity and poverty***

The poverty goal of the MDGs addresses issues of extreme poverty, hunger and malnutrition, which are closely related to the livelihoods and vulnerability of households. Rural households derive a significant proportion of their food and income from biological resources and, therefore, the availability and sustainability of biological resources is of direct relevance to poverty reduction for these people. Additionally, a large proportion of poor people live in marginal environments and in areas with low agricultural productivity or in fragile lands (see Figure 1 below).

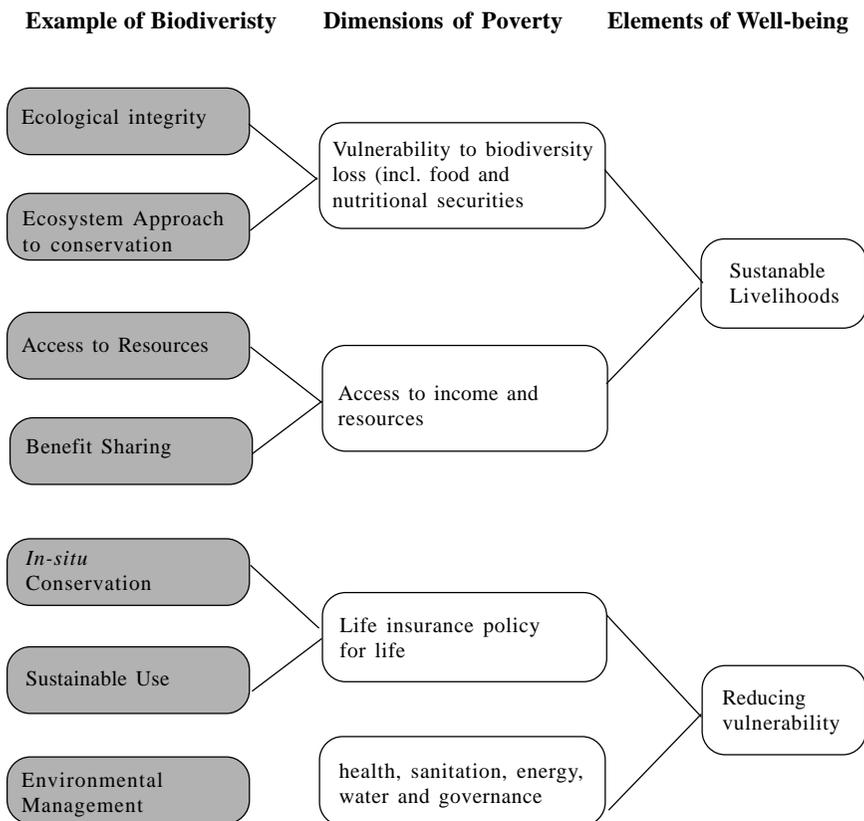
In these environments, there is a high dependency on genetic, species and ecosystem diversity to support their livelihoods. That is, aspects of



biodiversity are of direct and indirect importance to food availability, health, nutrition, house-hold development, income generation and vulnerability. Furthermore, improvements to core productive assets (including biodiversity-related factors of soils, water, trees and natural vegetation) is identified by the Millennium Project Task Force 2 on Hunger as the first step of the principle strategy for reducing undernutrition in households in such high-risk environments (Scherr 2003).

The following Figure 2 illustrates links between biodiversity and poverty and Box 3 provides a discussion of relationship between poverty and the environment.

**Figure 2: Biodiversity links to the dimensions of poverty**



The World Bank and IMF review of Poverty Reduction Strategy Paper (PRSP) suggested that the national PRSP can guide the implementation of MDGs even though the indicators used are different. However, none of the PRSPs developed so far address the issue and importance of biodiversity as a critical element of poverty reduction at national level nor the impacts of biodiversity in livelihood securities.

### ***Links to CBD***

Integration of MDG 1 into the 2010 targets of the CBD will also help to ensure the targets of MDG 1 are met while, at the same time, ensuring the sustainable use of biodiversity. Broadly, the following may be considered as ways to integrate issues of MDG 1 and CBD targets of 2010:

- Improving poor peoples' access to, and tenure of, biodiversity resources;
- Involving the poor in decision and policy making;
- Providing market linkages and sustainable use practices;
- Investing in research and development on how to improve rural incomes; and
- Developing mechanisms to continue or enhance public interest in biodiversity – maintaining products and services.

### ***Outputs from Asia Regional Workshop***

Some of the more specific actions and interventions to achieve MDG 1, while ensuring the sustainable use of biodiversity include:

- Improve the Human Resources Capital through revision of education policies, training and capacity building that encourages income generation.
- Achieve population control targets by raising awareness, empowerment, education and equity through development and implementation of appropriate policies – thus reducing the pressure on biodiversity.
- Develop income generation opportunities through sustainable livelihoods using Public-Private Sector partnerships with supporting policies and investments at local levels.
- Achieve minimum nutritional standards of people by: promoting cultivation of nutritional crops, drought-resistant varieties; setting up

community seed banks; provision of access to nutritional food; raising awareness on removing hidden and transient hunger.

- Promote access and benefit sharing activities (i.e., benefits of conservation efforts should be targeted to the poor (stakeholders) by: supporting activities on *ex-situ* cultivation; developing policies/ legislations on sharing of benefits including the mechanisms for enforcement; and raising awareness.
- Promote sustainable use practices and market linkages by developing policies and regulations through cooperatives and other appropriate mechanisms.
- Understand the economic values of biodiversity and empower local communities on achieving economic gains (within the legal ambit) by developing suitable market linkages and strategies.
- Raise the awareness of communities on values of biodiversity by: assessing the economic value of biodiversity; raising awareness; building capacities of communities; identifying and supporting elements of biodiversity that impact livelihoods.
- Promote sustainable agricultural practices by: providing incentives to farmers for following sustainable practices; supporting use of modern and traditional technology blends; supporting effective Public Distribution System.

### **Health goals and biodiversity**

#### ***Goal 2 - Reduce child mortality***

Target: Reduce, by two-thirds, between 1990 and 2015, the under-five mortality rate.

#### ***Goal 3 - Improve maternal health***

Target: Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio.

#### ***Goal 4 - Combat HIV/AIDS, Malaria and other diseases***

Targets: Have halted by 2015 and begun to reverse the spread of HIV/AIDS; Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases.

Biodiversity provides one of the significant contributions to achieving MDGs 4, 5 and 6. Recent studies led by Harvard Medical School reveal that biodiversity plays a crucial role not only in providing medicines to deal with issues of health and nutrition, but ecosystems play a significant role in dealing with diseases like malaria and others (Chivian 2002).

The commission on the nutrition challenges of the 21<sup>st</sup> century, in its report titled “Ending malnutrition by 2002: An agenda for change in the millennium” has pointed out that some 30 million infants are born each year in developing countries with intra-uterine growth retardation (IUGR). This represents about 24 per cent of all new births in these countries (Philip 2000). IUGR has been associated with maternal nutritional depletion and low birth weight children are characterised by mental impairments. The MDGs recognise these issues and aim to address issues of reducing mortality rates of both new-borns as well as the maternal mortality. The following Box 1 outlines strategies implemented under Thailand’s Nutritional Security Pact and its

**Box 1: Thailand’s nutrition security compact**

During the past 10 years, Thailand has achieved remarkable progress in reducing maternal mortality as well as the incidence of Low Birth Weight (LBW) children. The strategy consisted of the following components:

- Eliminate severe, moderate and mild protein-energy malnutrition (PEM)
- Monitor growth among all pre-school children and provide food supplements where needed
- Mainstream nutrition in health, education and agricultural policies
- Retrain and retool existing staff and mobilise community volunteers. Choose one community volunteer for every 10 households and build their capacity
- Encourage breast feeding and organise school lunch programmes
- Promote home gardening, consumption of fruits and vegetables, aquaculture and food safety standards
- Introduce an integrated food safety net with emphasis on household food and nutrition security.

The positive impact of the above Nutrition Security Compact is evident from the decline of maternal mortality from 230 per 100,000 live births in 1992 to 17 in 1996 (Philip 2000). Thailand’s initiative in organising a Community Volunteer Corps for Household Nutrition Security is worth or emulation by other nations.

**Source:** Swaminathan M.S. 2001.

**Box 2: Examples of values of natural products as pharmaceuticals**

A question that is often asked is whether there is any data on the financial value of natural product-derived drugs for pharmaceutical companies. A recent analysis by Newman and Laird (1999) demonstrated that the percentage of sales (not profits) derived from natural products or related compounds ranged from 50 per cent for Merck to 8 per cent for Johnson and Johnson, with the majority of companies falling between 15 and 30 per cent. Companies were not included unless they had at least one drug that sold for more than US \$1 billion. It should be emphasized that this was a one-time study using only 1997 sales figures for drugs that sold more than US \$1 billion that year, and that almost all of the natural product-derived drugs in this analysis were microbial in origin. It was not for another two years that the first plant-derived drug to break sales figures of US \$1 billion arrived, and that was Taxol.

*Source:* Chivian, E (ed.) 2002.

influence on the reducing maternal mortality and the incidence of low birth weight children.

The World Health Organisation estimates that 80 per cent of the world's population from developing countries relies mainly on traditional medicines for primary health care. Of the 119 chemical compounds derived from 90 plant species, 74 per cent of these are used as drugs. The following Box 2 provides some information on the economic value of biodiversity to pharmaceuticals.

Environmental impacts leading to incidences of diseases like malaria and others are also recognised through MDGs. Box 3 below provides an example of the relationships between ecosystem disturbance and infectious disease.

***Links to CBD***

Under the CBD there is no specific Article that deals with issues of health or reducing mortality rates. However, the general principle of conservation and sustainable use of biological diversity is the focus for national action on using biodiversity to reduce the impacts of poor health on humans and ecosystems. Issues of ecosystem disturbance and related health impacts are receiving much attention.

### **Box 3: Diversity of vectors and pathogens**

The major vector-borne pathogens and the diseases caused by them are concentrated in the tropics, with the majority of important vectors of human and animal diseases being found in the rich biodiverse tropical rain forest ecosystems, woodland savannas, and the edges of these ecosystems. The major insect vector groups – *Anopheles*, *Aedes*, *Culex*, and *Mansonia* mosquitoes; *Simulium* blackflies, the new world vectors of *Leishmania* (*Lutzomyia*); the *Chrysops* vector of *Loa loa*; and the *Glossina* species which transmit trypanosomes – all contain species which are dependent on forest, woodland savanna, or riverine forest ecosystems. It is the degradation of these ecosystems; the behaviour and ecology of the vectors at the forest edges; and the impact of reforestation on the interactions between humans, vectors, and reservoir hosts at the boundaries between habitat types (ecotones) that determine the epidemiology of human infectious diseases. Additional factors are the degree of immunity of local or migrant populations; their nutritional status and their behaviour; the interaction with, and behaviour of reservoir hosts; and the availability and effectiveness of surveillance systems and healthcare.

*Source:* E. Chivian. (ed.) 2002.

### ***Outputs from Asia regional workshop***

Some of the more specific actions and interventions to achieve this MDG include:

#### ***Goal 2***

- Strengthen primary health care and nutrition through the use of traditional knowledge and traditional medicine by identifying and encouraging the use of medicinal plants and crop plants to achieve house-hold and primary health care *e.g.* by documenting medicinal plants and use of a community (participatory) biodiversity register.
- Promote conservation of biodiversity through ecosystem approach for watershed management in order to ensure adequate water supply, in terms of quality and quantity, for households by developing appropriate management plans for watersheds and their use.
- Mitigate negative impacts of agricultural and forestry practices that affect child growth by developing suitable management methodologies for addressing issues of ecosystem imbalance and increases in incidence of diseases (*e.g.* clearing of forests and vector borne disease).

**Goal 3**

- Provide alternate sources of energy for household purposes for women by developing policies and mechanisms to replace existing methods of cooking and related activities.
- Promote forestry activities with a focus on sustainable harvesting and management of fuel wood and non-timber forest products by supporting activities such as Joint Forest Management and development of Community Wood lots, etc. (creating equitable access among gender, class and caste to forest resources).
- Promote innovative methods for using biodiversity as medicines by increasing support to research and development and raising awareness on medicinal plants and their usage.
- Promote agronomic practices that can provide better household nutrition by encouraging development of home gardens, Medicinal Plant Conservation Areas, mixed cropping, etc.

**Goal 4**

- Support ethnobotanical studies on role of plants/microbes in treating diseases by enhancing research and development and promoting the use of traditional medicine in treatment of such ailments.
- Promote option of using biological control agents by supporting research and development.
- Promote integrity of ecosystems by supporting initiatives such as land-use, capacity building, sharing of experiences.
- Promote management of water resources and bodies to achieve reduction in incidence of diseases by identifying and supporting appropriate management strategies.

**2.4 Environmental sustainability and biodiversity**

***Goal 5 - Ensure environmental sustainability***

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

Current estimates are that approximately 1 billion people are affected by soil erosion and land degradation due to deforestation, overgrazing and agriculture. Water scarcity is a major issue in more than 20 developing countries. Over 2 billion people continue to rely on biomass fuels and traditional technologies for cooking and heating and up to 2 billion people have no access to electricity (UNDP, UNDESA and World Energy Council 2000). Shortage of wood fuel imposes time and financial costs on poor households, putting a particular burden on those that are short of labour and making it harder for children to attend school.

Poor people are affected by natural resource degradation and biodiversity loss much more than the better off because of their limited assets and access. For example, in a study in West Africa, children showing growth abnormalities associated with poor nutrition (stunting) were found most frequently in areas of high soil degradation (GRID/Arendal 1997).

To understand the importance of biodiversity for human development, we need to evaluate the products that can be used and the economic system services that support human development. An accurate valuation of biodiversity needs to consider the direct use values (products) and indirect use values (services) and combine consumptive and non-consumptive use. The following Figure 3 explains some linkages.

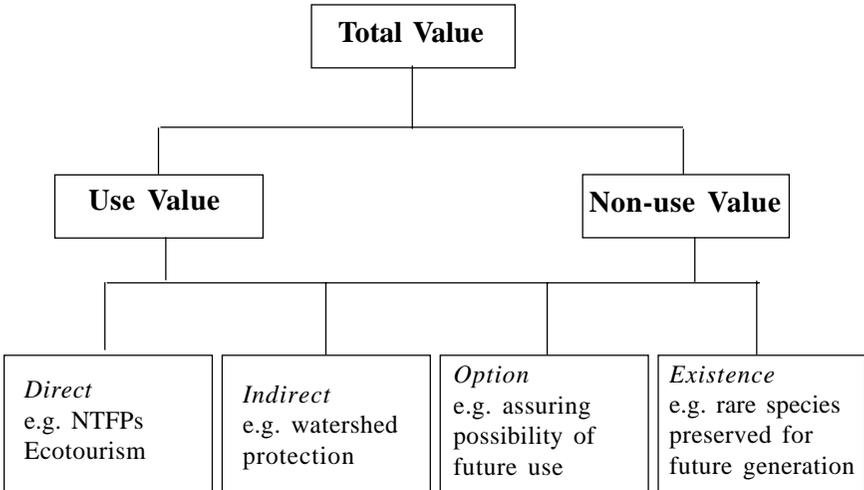
Apart from the direct use values, biodiversity found in ecosystems provide enormous economic gains. The following Table 2 illustrates some of these:

The underlying causes of biodiversity loss are very similar to the underlying causes of poverty and include centralized planning, constraints on access and ownership, unregulated markets, weak political voice, etc. The challenge for development here is to ensure that:

- biodiversity and the environment continue to provide goods and services needed for human development;
- costs and benefits from the use of such goods and services are sustainably and equitably shared;
- policies influencing sustainability are developed based on participatory approaches; and

- the scientific and technological impacts on services provided by biodiversity be assessed and solutions for ecosystem friendly alternative and efficiencies be found.

**Figure 3: Economic value of biodiversity**



Source: DFID, IUCN and EU 2000.

**Table 2: Ecosystem services and functions**

Ecosystem Service	Estimated Economic Value (global, US\$ ha/year)		
	Wetland	Forest	Rangeland
Climate regulation		141	0
Disturbance regulation	4539	2	
Water regulation	15	2	3
Water supply	3800	2	
Soil formation		10	1
Erosion control		96	25
Nutrient cycling		361	
Waste treatment	4177	87	87
Pollination			25
Biological Control		2	23

Source: Constanza *et al.* 1997.

Improving environmental management to reduce poverty requires local understanding of how environmental conditions relate to poverty, and the ability to identify and set priorities on alternative policy options and evaluate their effectiveness and impact. Environmental data tend to focus on environmental change without determining poverty effects, while poverty monitoring systems often ignore environmental concerns. Indicators are therefore needed to measure health and vulnerability of the poor and these need to be integrated into national poverty monitoring systems and assessment.

Unfortunately, the Poverty Reduction Strategy Papers (PRSPs) fail to consider such issues and linkages. Greening PRSPs is thus the need of the hour. The “poverty-environment maps” available in few countries can be a good beginning point for such activities (Henninger and Hammond 2000).

### ***Outputs from Asian regional workshop***

The following specific actions may be considered to for mainstreaming issues of biodiversity in achieving MDG 7, in addition to those explained above:

- Integrate national action plans dealing with Convention on Biological Diversity, UN Framework Convention on Climate Change (UNFCCC) and the Convention to Combat Desertification (CCD) and their implementation.
- Identify monitoring mechanisms to achieve reduction of biodiversity loss (2010 targets) [Using indicators like threatened species].
- Promote ecosystem approach to conservation.
- Integrate biodiversity concerns into environmental impact assessments, strategic environmental assessments and others.
- Implement afforestation and reforestation programmes.
- Promote appropriate land use policies.
- Address issues of risk assessment and risk management with regard to genetically modified organisms and Invasive Alien Species.
- Creation and management of National Biodiversity Conservation Areas, Protected Areas and other areas of biodiversity hot spots and suggest appropriate actions to promote environmental sustainability.

- Link ecological sustainability with sustainable development (economic, social and environmental well-being).
- Achieve environmental sustainability through Clean Development Mechanisms (CDM), buffer zone management, eco-development plans and Joint Forest Management (JFM).
- Conjunctive use of water (surface and ground) for environmental sustainability.
- Support policies and plans for management of effluents to ensure environmental sustainability.
- Identify policies and interventions, where appropriate, to reduce out migration from rural areas by provision of employment opportunities.

### **Developing a global partnership and biodiversity**

#### ***Goal 6 - Develop a global partnership for development***

Targets: Develop further an open, rule-based, predictable, nondiscriminatory trading and financial system (includes a commitment to good governance, development and poverty reduction - both nationally and internationally);

Address the special needs of the least developed countries (including tariff- and quota-free access for exports, enhanced programme of debt relief for and cancellation of official bilateral debt, and more generous ODA for countries committed to poverty reduction;

Address the special needs of landlocked countries and small island developing states (through the Programme of Action for the Sustainable Development of Small Island Developing States and 22<sup>nd</sup> General Assembly provisions;

Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term;

In cooperation with developing countries, develop and implement strategies for decent and productive work for youth;

In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries;

In cooperation with the private sector, make available the benefits of new technologies, especially information and communications technologies.

Goal 6 of the MDGs focuses on means of achieving the first seven goals. In the spirit of this goal, developed and developing countries need to work in partnership to address sustainability issues.

The 1992 Earth Summit clearly established the objective of sustainable development. Ten years later this objective remains the goal of world community as stated through the Millennium Declaration and the MDGs. In addition, the Monterrey Summit on “Financing for Development” witnessed renewed commitments from developed countries to work towards meeting the ambitious targets for development. Achieving development goals requires considerable resources and creative use of both existing and new resources. Generating public resources and attracting private resources to finance development and conservation are thus needed.

Preliminary estimates by the World Bank are that it will take an increase in foreign aid of up to US\$ 40 to 60 billion per year to reach the MDGs (Devarajan *et al.*, 2002). Increasing the quantity and effective delivery as well as use of aid is essential to ensure the poorest countries have resources to finance the investments required to reach critical thresholds in infrastructure, education and health. To ensure the effectiveness of the aid, developing countries need to improve economic and democratic governance and implement policies for effective poverty reduction. An example of inefficiencies and mismanagement, with drastic implications for development goals, is provided in Box 4. These issues must be overcome.

In addition to the increases in the Official Development Assistance, as promised at Monterrey, countries need to identify their own internal resources and move forward to forging new and better partnerships to mobilize more financial resources. Type 2 partnerships that bring about enhanced linkages between public and private sector; private sector and NGO; South-South cooperation as discussed at WSSD might be a way forward in addition to finding public-private partnerships.

**Box 4:- Financial impact of energy mispricing in India**

Power subsidies are imposing a growing and unsustainable financial burden in India. In 1992-93, total financial losses in the power sector came to US\$ 1.7 billion. By 2001, low tariffs (which encourage high and wasteful use), high technical losses, and widespread non-payment, combined to increase state utility losses to more than US\$ 5 billion per year. If current trends continue, state utility financial losses will reach US\$ 10 billion per year in another three years. To put this magnitude of losses into perspective, US\$ 5 billion is half of what all the state governments in India combined are spending on all levels of education every year. It is double what they are collectively spending on health, and three times what they are spending on water supply. If power sector financial losses were reduced by only one third, the savings in a single year would be sufficient to fill every teacher vacancy in the country and provide every school with running water and toilet facilities.

*Source:* IMF, UNEP and The World Bank 2002.

Debt relief can also help to release resources that could finance additional spending in areas that contribute to attaining the targets of the MDGs. That is, increased debt relief for developing countries will assist in creating an enabling environment for sustainable development. In addition, innovative ways for industrialized countries to provide assistance while promoting conservation should also be further explored. For example, debt for nature swaps can be an effective way of maintaining or promoting sustainable management of natural resources in developing countries in exchange for debt relief.

There is enormous scope for change to discriminatory trade policies in rich countries that limit market access for developing countries and distort global markets. It is recognised that greater market access for developing countries, coupled with development assistance, would significantly contribute to the likelihood of many countries achieving the MDGs by 2015 (Devarajan *et al.*, 2002). However, recent statistics indicate that current trade liberalisation rules and policies have led to increases in poverty and inequality, with a disproportionately large negative impact on developing countries (World Trade Organization, 2003). Concerns regarding the current and emerging

asymmetries in the world trading system should be addressed to ensure that the system evolves in such a way that it is responsive to the development needs of its members and that a more level playing field is created (RIS, 2003).

Technology transfer and benefit sharing are also key issues that affect people in developing countries and their path towards sustainable development. Technological innovations can increase productivity resulting in increased household incomes and provide solutions to many development problems such as disease, transport, energy, water supply and sanitation (UNEP, IISD, 2000; UNDP, 2003). It is vital that developed countries share technological progress with developing countries and invest more into technology development that addresses issues of poverty reduction. Recognition of indigenous knowledge, including knowledge about genetic material and technology, and benefit sharing for access to and use of this knowledge is also vital for meeting conservation and development goals as well as meeting the provisions of the CBD for the fair and equitable sharing of the benefits arising out of the use of genetic resources. These issues are summarised in the following extract from Walker (2001) (Box 5).

### **Conclusion**

Achieving synergies between implementation of CBD, UNFCCC and MDGs is a key issue to achieve sustainable development. Agencies like Secretaries to Conventions, UNDP, UNEP and others have started thinking about bringing synergies to action. Specific and joint work programmes should be developed as a part of Joint Liaison Group and Ad Hoc Technical Expert Group. A specific inter-agency working group with a mandate to address synergies in action must be established and linkages to on-going ground work be developed. The Operational Programme 12 of the GEF explicitly encourages interventions aimed at considering an ecosystem approach. The ecosystem approach, adopted by the Parties to the CBD, aims to consider conservation actions through synergetic approaches. Encouraging Parties to submit innovative project ideas under the GEF's OP 12 dealing with ecosystem approach should be explored. Countries should be encouraged to specifically design programmes on synergies as a part of their national strategy and action plan.

**Box 5: The TRIPS agreement and sustainable development: role of biodiversity and the CBD**

- As the shift to a 'knowledge economy' continues, the definition of ownership and control of information becomes one of the most important policy issues facing societies. The leading international legal framework for determining rights over information is the World Trade Organization's (WTO) Agreement on Trade-Related Aspects of Intellectual Property Rights (the TRIPS Agreement).
- This shift in the balance between public and private interests takes on a new dimension when viewed in the international context. Developed countries - which are traditionally home to the owners of formal technology - have tended to promote IPRs as beneficial to development. At times, developing countries by contrast - which are generally users, but not producers, of formal technology - have criticized IPRs, arguing that they raise prices and restrict access to the new technologies needed for sustainable human development. Despite bitter disputes between developed and developing countries during the Uruguay Round of trade negotiations, minimum standards for the protection and enforcement of IPRs were inserted on the international trade agenda in the form of the TRIPS Agreement.
- The TRIPS Agreement could also affect the transfer of technology under Multilateral Environmental Agreements. Research by the secretariats of the various MEAs suggests that IPRs present both opportunities and barriers to the transfer of environmentally-sustainable technology. While the role of IPRs in technology transfer should not be overstated, it is important that IP systems complement efforts to protect the environment by encouraging the transfer of environmentally-sustainable technology and minimizing the barriers that IPRs might pose to environmental protection. Yet the TRIPS Agreement remains essentially neutral to environmental concerns. Given the immediacy of environmental degradation, promoting the transfer of technology both through the TRIPS Agreement and MEAs is critical.
- In the area of health care and access to essential medicines, implementation of the TRIPS Agreement could help consolidate market control in the hands of a few pharmaceutical companies and increase the price of pharmaceuticals. This may pose serious health risks in cases where essential drugs are needed to respond to diseases such as HIV/AIDS, tuberculosis and malaria. According to the TRIPS Agreement, Members may adopt measures to protect public health and nutrition, including through the grant of compulsory licenses to local companies, as a means of promoting the public interest. Members, however, are often faced by unilateral pressure when seeking to operationalise these measures. Greater consideration needs to be given to the public health aspects of IPRs to ensure that the TRIPS Agreement promotes and does not undermine the right to health.

*Source:* Walker 2001

At the national level, the agencies coordinating implementation of the Conventions and Processes must establish a joint working group involving stakeholders and focal points of the Convention to discuss options and actions. The Capacity Development Initiative (CDI) must address the issue of synergies specifically and all National Capacity Self Assessment (NCSA) activities must focus on this at national level. Agencies mandated to implement the Millennium Development Goals (MDGs) and WSSD outcomes (including those addressing WEHAB issues) must design processes on synergies soon, so that action of implementation can be inclusive.

At the local level, synergistic action should involve translating and scaling up local experiences into regional and national actions, development of replicatory models and influencing larger policy through action from the priorities. Initiatives like the Equator Initiative, Small Grants Programme of GEF have unique opportunities to identify such action and support replication and if need be improvement.

The key environmental agreements also contain many similar requirements for action, research, reporting and other necessary activities agreed by their signatories.

- Approaches to goals – The instruments adopt similar approaches to achieve their goals. They recognise needs for national action guided by international experiences. All of them recognise the need for capacity building and awareness rising as a pre-condition to their success. All of them also identify the need for cooperation.
- Approaches to activities - All of these instruments promote activities of research, assessments, information exchange, training, development of strategies and action plans and inventories. However, the decisions of design and detail are left open for interpretation by individual governments.

It is truism that we work in a world in which governments work primarily in a sector-based mode to develop and implement their policies and programmes. We need to bring in some changes to this scenario. Suggestion or recommendation for this include the following:

- Enhancing the institutional outlook
- Building capacities – both at personal and institutional levels
- Modifying National Planning processes
- Strengthening the information base.

### **Institutional outlook**

With the overall framework of policymaking, planning and implementation of Rio Conventions and other Sustainable Development related policies, there are several core activities, which are particularly amenable to the issue of institutional synergies. These are:

- Awareness raising
- Education
- Reporting
- Data gathering and inventories
- Public participation
- Research and Training

To achieve these synergies it may be useful to consider the following options:

- a) A crosscutting national committee to bring together key players - This is not new for several countries. National Planning Commission is a committee that brings together such players to decide on plans and budgets. Creation of a National Committee on Sustainable Development is an option.
- b) Separate institutions with a coordinating mechanism - Several countries work on this principle at least in sectors like finance, banking and health. Similar model for environment may be an option.
- c) A single institution responsible for all instruments – Many countries have Ministries of Environment and Natural Resources, which deal with several environment issues, but linkages within them are often weak.

At local level, some options include:

- a) Creation of a coordinating committee representing all sectors
- b) Making locally elected democratic institutions responsible for environment and development
- c) Using groups and institutions like CBOs, Churches and Women's groups.

### **Building capacities**

Capacity building and strengthening is urgently needed. Many countries are overtaxed by the competing demands and obligatory activities in addition to reporting requirements and monitoring.

Given this, it is important for countries to enhance their capacities. The GEF's Capacity Development Initiative (CDI) is a welcome option but falls short of addressing or supporting actual activities. Also, the implementation of CDI is in question due to the approval of only phase I of CDI by the GEF council where support is provided for National Capacity Self Assessments (NCSA) without clear emphasis on how countries can implement outcomes of NCSA. This makes CDI's use and effectiveness limited.

The general capacity needs to address synergistic activities include capacities on:

- Making inventories, monitoring and systematic observations.
- Planning, policy development and reform of legal frameworks.
- Impact assessment and research.
- Information, knowledge and data management.
- Reporting and monitoring.
- Education, Training and Public awareness.

Capacity building on these can be categorized to human resources, infrastructure development, coordination and cooperation.

### **Modifying national planning processes**

Plans to implement the Conventions can foster synergies if they meet the following conditions:

- 1) Plans should be consistent with goals of national development.
- 2) Plans should identify the roles of the Conventions and other commitments at national, regional and global levels.
- 3) Plans should identify areas where overlaps and conflicts can occur and suggest means of turning them into opportunities of synergies.

Given this there are three possibilities to address national planning processes that can be responsive.

- a) Develop separate plans for each agreement – Currently, this option receives both financial and political support that is neither effective nor suppressive of synergies. However, this should change.
- b) Develop a new Umbrella Plan incorporating elements of all agreements – This is a good choice provided the institutional mechanism for planning and implementation are in place.
- c) Develop a mechanism to integrate planning associated with the instruments into existing national plans and planning frameworks – This is the best option in the current situation but outlook and capacities to do so are weak.

### **Strengthening information base**

Strong information systems, efficient networks and intelligent synthesis of these into knowledge equips a country to regularly assess the countries status and progress and plan for sustainable development. Implementation of all the agreements needs a good information base. Creation of this base with an implicit design for planning and monitoring is thus needed.

Countries and Conventions should also understand that information on its own merit is of little relevance for implementing activities. Information should be analysed and used in an integrated manner so that the information available through the clearing house mechanisms can be meaningful.

### **References**

- Anonymous. 2002. Poverty and Climate Change: Reducing the Vulnerability of the Poor. Inter-agency discussion paper. World Bank, Washington.
- Chivian. E (ed.). 2002. Biodiversity: Its Importance to Human Health. Harvard: Centre for Health and the Global Environment Harvard Medical School.
- Constanza R, d'Arge R, de Groot R, Fabes S, Grano M, Hannon B, Limburg K, Naeem S, O'Neil R V, Pareulo J, Raskin R, Sulton P and van der Belt M. 1997. The Value of the World's Ecosystem Services and Natural Capital. *Nature* 387: 254-260.
- Devarajan S., Miller M.J. and Swanson E.V. 2002. "Development Goals: History Prospects and Costs". World Bank Policy Research Working Paper.
- DFID, EC, UNDP and The World Bank. 2002. Linking Poverty Reduction and Environmental Management – Policy Challenges and Opportunities. Washington: World Bank.
- DFID, IUCN and EC. 2000. Biodiversity in Development: Strategic Approach. DFID, London.

- Gallup J L and Sachs J D. 2000). The Economic Burden of Malaria. CID Working Paper 52, Harvard University, Boston: Centre for International Development.
- GRID/Arendal. 1997. Mapping Indicators of Poverty in West Africa. DEIA/TR. 97-98. Rome.
- Henninger N and Hammond A. 2000. A Strategy for the World Bank: Environmental Indicators Relevant to Poverty Reduction. Washinton D.C.: World Resources Institute.
- IIED. 2002. Drawers of Water II. In collaboration with Community Management and Training Services Ltd. (Kenya), Institute of Resource Assessment of the University of Dar es Salaam (Tanzania) and Child Health of Makerere University Medical School (Uganda). London.
- IMF, UNEP and World Bank. 2002. Financing for Sustainable Development. IMF, UNEP and World Bank, Washington.
- Koziell I. 2001. Diversity not Adversity: Sustainable Livelihoods with Biodiversity. IIED and DFID, London.
- McNeill C. and Shei P. 2002. A Framework for Action on Biodiversity and Ecosystem Management. WEHAB Working Group, WSSD.
- Philip J. 2000. Ending Malnutrition by 2020: An Agenda for Change in the Millennium. Food and Nutrition Bulletin, United Nations University, Tokyo. Vol 21 (13) Supplement 88pp.
- RIS. 2003. *Globalization and the Non-Aligned Movement – An Economic Agenda for Action*. A Background Document for the XIII NAM Summit. Kuala Lumpur, Malaysia, 20-25 February.
- Scherr S. 2003. Millennium Project – Background Paper of the Task Force 2 on Hunger: Halving Global Hunger. Commissioned by the UN Secretary General and supported by the UN Development Group.
- Swaminathan M.S. 2001. Nutrition in the Third Millennium: Countries in Transition. Plenary lecture 17<sup>th</sup> International Congress on Nutrition, Vienna, 27-31 August.
- UNDP. 2003. *Human Development Report 2003*. Millennium Development Goals: A Compact among Nations to End Human Poverty. New York: Oxford University Press.
- UNDP, UNDESA and World Energy Council. 2000. World Energy Assessment. UNDP, New York.
- UNEP & IISD. 2000. *Environment and Trade: A Handbook*. Canada: International Institute for Sustainable Development.
- Walker S. 2001. The TRIPS Agreement, Sustainable Development and the Public Interest. IUCN Environmental Policy and Law Paper No. 41. IUCN, Bonn.
- World Bank. 2002. *The Environment and the Millennium Development Goals*. World Bank, Washington.
- WRI 2002 Why Care about Ecosystems? ([http://www.wri.org/wr2000/why\\_care.html](http://www.wri.org/wr2000/why_care.html))
- World Trade Organization 2003 Trade Liberalization Statistics <http://www.gatt.org/> (accessed July 2003)