

Building on Hidden Opportunities to Achieve the Millennium Development Goals: Poverty Reduction through Conservation and Sustainable Use of Biodiversity

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Growing concern over the effects of biodiversity loss on progress towards sustainable development led to the establishment of the UN Convention on Biological Diversity (CBD) in 1992. To date over 180 countries have ratified it demonstrating a significant global commitment to the cause.

Box 1: The progressive nature of the UN Convention on Biological Diversity

The Convention on Biological Diversity's objectives are:

- the conservation of biological diversity;
- the sustainable use of its components; and
- the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources.

The CBD objectives clearly provide much opportunity for building on the links between livelihoods development and the conservation and sustainable use of biodiversity. This is further supported by the Convention's explicit recognition that *'economic and social development and poverty eradication are the first and overriding priorities of developing countries.'* The problem is that there is little guidance, insufficient models, and a lack of effective tools and mechanisms which are needed to achieve conservation objectives, whilst at the same time positively enhancing poverty reduction processes.

The CBD presents a comprehensive series of pragmatic and innovative principles for action (Box 1), which have been further elaborated by six Conferences of the Parties. Yet there has been insufficient advancement in operational terms. This lack of progress should be taken very seriously as biodiversity loss, together with other forms of environmental degradation, has the potential to undermine progress towards the achievement of the Millennium Development Goals (MDGs - see www.undp.org/mdg and Box 3). It is also essential to acknowledge that the 'environment', including biodiversity, offers many interesting poverty reduction opportunities - yet these are often overlooked, and may function outside the prevailing policy environment. For instance, it is unlikely that the first MDG: *'eradication of extreme poverty and hunger'* through *'halving, between 1990-2015, the proportion of people whose income is under \$1 day and in hunger'* - can be achieved solely through the adoption of approaches to poverty reduction that focus on private accumulation of material goods. And, even if poverty is successfully halved, in the absence of more sustainable approaches and 'reduced impact' technologies to resource extraction and production, the associated pressures exerted on the world's biodiversity are likely to threaten the sustainability of the poverty eradication process itself, and is likely to push the

KEY CHALLENGES:

- As a matter of priority seek out those initiatives that have simultaneously reduced poverty and conserved biodiversity and demonstrate and raise awareness of the role that such initiatives can play in achieving the full range of Millennium Development Goals.
- Find new ways to incorporate environmental goods and services in accounting procedures, and develop innovative payment systems to communities for provision of ecosystem services and other public goods.
- Expand worldwide demand and markets for goods produced in 'biodiversity friendly' ways and establish certification systems for sustainably produced community goods and services.
- Support Indigenous and other local peoples to address resource access and land ownership issues and facilitate processes that bring them into decision-making processes around land use.
- Undertake a systematic analysis of the MDGs to identify opportunities where activities related to biodiversity can make a contribution to their achievement.
- Place emphasis on the effective implementation and realisation of the third objective of the CBD 'fair and equitable access to the sharing of benefits arising out of utilisation of genetic resources'.

other half remaining into even deeper poverty. Furthermore, whilst a significant proportion of poor people are keen to adopt similar lifestyles to those in industrialised countries, this does not apply to all poor people - some may choose to continue a lifestyle that maintains a close interaction with natural ecosystems, or biodiversity, and that does not focus singularly on material accumulation. The critical factor here is that poverty reduction processes should offer people choice - and paying closer attention to the links between biodiversity, poverty reduction and the achievement of sustainable livelihoods can help achieve this.

The fourth and fifth MDGs, respectively, to '*reduce child mortality*' and to '*improve maternal health*' have clear linkages to biodiversity (see Boxes 2 and 3). The seventh MDG: '*ensuring environmental sustainability*', attempts to recognise some of the above challenges and the following two indicators assess some aspects of biodiversity: '*the proportion of land area covered by forest*' (indicator #25), and '*the ratio of area protected to maintain biological diversity to surface area*' (indicator #26). Making progress on this last indicator will require serious and innovative thinking as pressures on existing protected areas are enormous, and will increase given the need to eliminate hunger.

Also within this seventh MDG, there is a third indicator: '*the proportion of population with sustainable access to an improved water source, urban and rural*' that relates to the target '*to halve by 2015 the proportion of people without sustainable access to safe drinking water*'. The achievement of this target is indirectly related to the quality of the ecosystems that biodiversity provides, as described in Box 2.

Further thinking and analytical work is urgently needed on how biodiversity can positively contribute to the achievement of the MDGs.

UN Secretary General Kofi Annan clearly acknowledged the importance of biodiversity in his 14 May 2002 speech (www.johanesburgsummit.org) in which he identified biodiversity as one of the five priority areas for the World Summit on Sustainable Development (WSSD). However, in spite of this global spotlight on biodiversity and its critical links to the Millennium Development Goals and progress towards poverty reduction, it often fails to receive the attention it deserves in international and national policy and decision-making fora.

There are many complex reasons why this is the case. Firstly, biodiversity is an abstract concept: defined as the '*variability of all organisms from all sources...and the ecological complexes of which they are part... this includes diversity within species, between species and of ecosystems*' (Convention on Biological Diversity, 1992). This notion of diversity has not proved easy to convert into a tangible entity. Planners, policy and decision makers have therefore often overlooked it. Local people and the general public, whilst they continually interact with it, are simply not aware either of their dependence nor do they recognise that their enjoyment of the natural world often derives from their interaction with unusual plants, animals or landscapes - none of which would exist if not for biodiversity. It is often only when biodiversity has disappeared, or become scarce, that a more direct and broader appreciation of its value develops. However, if we are to wait until an appreciation of biodiversity's value occurs due to scarcity on a global scale, then the consequences would be disastrous.

How is biodiversity important?

There is often confusion as to why biodiversity has become a focus of attention through the establishment of the Convention on Biological Diversity. Why not simply pay attention to natural resources - surely that is enough? But biodiversity is so much more - it encompasses all living natural resources, and harbours the processes and interactions within and between them, and the ecosystems within which they fall. Thus biodiversity forces a more holistic and more comprehensive thinking about natural and agricultural systems, than does a singular focus on natural resources management.

There are also other reasons why biodiversity should not be overlooked. For instance biodiversity in any one location at any specific time provides a range of resources and services that provide people with *choice*. Choice is important because it gives people options. For instance, as biodiversity provides '*replacements*', it allows resource users to switch from one resource to another, if the first becomes scarce, or if market demand changes. Access to diverse species enables the diversification of livelihood sources through for instance planting multiple crops, staggering food production throughout the year, or engaging in alternative income-generating activities, such as collection of non-timber forest products. The availability of diverse resources also allows different genders, cultural or age groups to engage and benefit from different activities. This is especially important as it can help reduce competition or conflict that might otherwise occur if each group had to compete for the same resources - as is indeed the case in many parts of the world where diversity and the choices it supports have become scarce.

There are many other notable benefits that biodiversity offers - and some are also highly under-appreciated by the public as well as policy-makers such as the ecosystem services that sustain society itself (see Box 2, and the work of the Millennium Ecosystem Assessment at www.millenniumassessment.org for further information).

Box 2: Biodiversity contributes to poverty reduction in at least five key areas:

- **Food Security** - human society is highly dependent on genetic resources, including those from wild and semi-domesticated sources, for the productivity of its agriculture, livestock, and fisheries. These resources also provide communities with an adaptation capacity so varieties can be created that best cope with changing local conditions. Biodiversity is also a source of alternative food products during periods of scarcity.
- **Health Improvements** -biodiversity is a source of the invaluable information and raw materials that underpin medicinal and health care systems, both for the 'informal' sector which meets local health care needs of some 60% of the world's people, and the 'formal' sector which derives a majority of the world's modern drugs from biodiversity. Poor people also suffer most when water and air are scarce or polluted and from diseases associated with disrupted ecosystems. Further, a variety of sources of foods support better nutrition and therefore improved health.
- **Income Generation** - poor people tend to be the most dependent upon the direct utilization of biodiversity for their livelihoods, and are therefore the first to suffer when these resources are degraded or lost. Biodiversity also offers great potential for marketing unique products, many of which are extremely valuable but the benefits only infrequently accrue to the poor.
- **Reduced Vulnerability** - poor people are most often exposed to, and least prepared to cope with, unpredictable events such as fluctuations in access to food and other resources, and to environmental shocks and risks. Ecosystem degradation exacerbates the frequency and impact of droughts, floods, landslides, forest fires and other natural hazards, and can intensify competition and the potential for conflict over access to shared resources such as food and water.
- **Ecosystem Services** - forests, wetlands, coastal ecosystems, etc. - provide essential services that contribute in numerous ways to the productive activities of rural and urban poor people, including through the generation of water, cycling of nutrients, replenishment of soil fertility, prevention of erosion, etc. These services are public goods, providing indirect values that are not traded in the market place but are vital to the livelihoods of all people.

We are clearly all dependent on biodiversity, but we differ enormously from one another in the way we value it and use it. Where people have no alternative means of acquiring food and their other basic needs, such as clothing, building materials and medicines, or where they do not have the capacity to regulate the environment, such as through building dams or protecting themselves from floods, biodiversity's value is usually much greater.

Where we are concerned with producing vast quantities of one valuable product, such as wheat, and have access to artificial external inputs that can regulate the production environment, biodiversity's direct use value may be lower. This is not to undermine its value to all society, as urban consumers for instance depend heavily on the maintenance of genetic diversity for the enhanced production of food and other crops, but to point out that there are groups, like the poor, who are more directly and more critically dependent upon it than others.

The Challenge

Unfortunately, the habitats which harbour some of the world's most valuable biodiversity are being lost at ever faster rates and over progressively wider areas. (WWF, 2000) It so happens that many of these areas also coincide with severe income poverty, and social and political marginalisation. This coincidence has led many to assume that financially poor and marginalised peoples are primarily responsible for biodiversity loss. Whilst this may sometimes be the case, a deeper understanding is developing to counter this assumption. Where poor people are overexploiting local resources, this has arisen usually because they have been pushed to the margins of existence - as more powerful groups have appropriated lands or resources more successfully - forcing others to subsist from areas or resources too small and too unproductive to properly support a sustainable existence.

This pattern occurs at ever increasing scales. Indeed, over-consumption by industrialised countries is ever more frequently singled out as a key driver of biodiversity loss and increased poverty. Recognising key drivers might be a significant step forward, but identifying suitable counter-measures presents the poverty reduction, economic development and biodiversity communities with a most difficult challenge.

A key problem lies in the fact that conventional development pathways - as pursued by industrialised countries - often focus on the generation and accumulation of private goods - food, clothing, buildings and other material goods - items that can be traded and exchanged. The importance of maintaining public goods - biodiversity, the atmosphere, the oceans - has not been recognised in the process of development mainly because their conservation appears to impose additional costs. Such activities are rendered 'priceless' - that is, of no financial value. Yet as development approaches pursued by

industrial countries have had some demonstrable success, at least in economic terms, there are many examples where short term economic gains have occurred at enormous cost to local people.

Also of direct relevance to the MDGs is the fact that tropical countries are beset by a host of health and ecological challenges that are distinct and more severe than those encountered by temperate countries. A high burden of disease from pests and parasites, including malaria, is concentrated in the tropics and other endemic diseases sharply shorten life spans. Low tropical agricultural productivity caused by fragile soils and inappropriate technologies is 30-50% below temperate levels, leading to poor nutrition which further undermines health. Since past 'north to south' transfers of technological knowledge from temperate environments have often resulted in ineffective and unsustainable practices it appears that tropical nations and communities urgently need assistance in identifying, promoting and applying technologies appropriate to the tropical region itself.

It is now time to consider alternative approaches that are complementary to conventional methods to reduce poverty. Providing the poorest and most marginalised rural peoples with greater choice, involving them in decision-making, engaging with them in partnerships, assisting them in learning from each other, has real potential to provide pragmatic solutions.

The Opportunity

There is increasing evidence of financially poor, politically and socially marginalised peoples, who have managed to strengthen the security and sustainability of their livelihoods by realising the value of their biodiversity asset in many diverse and pioneering ways. In fact, as of May 2002, over 400 such examples have been submitted by communities throughout the world as nominations for the 2002 *Equator Initiative* awards. The UNDP/Global Environment Facility (GEF) Small Grants Programme (SGP) has also identified hundreds of such local initiatives. Other examples include:

- The Makuleke Land Claim in South Africa illustrates how the Makuleke community regained ownership of land twenty years after they were removed from it to make way for the Kruger National Park. After several years of negotiation, the various parties managed to resolve their differences and achieve a classic 'win-win' for biodiversity conservation and for livelihoods improvement of the Makuleke community. The community was allowed back onto their lands on condition that they manage the land sustainably - engaging in livelihood activities that conserve or sustainably use the local biodiversity, such as through eco-tourism. The community found this an entirely acceptable offer and agreed to sign the joint management agreement, to both parties' benefit. (Steenkamp and Uhr, 2000)

- A partnership initiative called *AmazonLife* generates sustainable economic development options for traditional populations in the Amazon which are compatible with their culture and which protect the biodiversity of their territories. Through the initiative, local indigenous and rubber tapper families in the Brazilian Amazon produce sheets of rubber vulcanized through an exclusive process to be used as a leather substitute to manufacture bags, knapsacks, briefcases, clothing, shoes, etc. 'Niche' markets have been created outside of Brazil and these products are in high demand. Each family involved in the process of collecting the natural rubber and making the sheets of leather-like fabric is part of an informal network that is safeguarding over a hundred thousand hectares in the Amazon.
- Also in the Amazon, the Brazil Nut Programme of the Amazon Conservation Association has been working in partnership with *castaneros* (Brazil nut harvesters) to strengthen the role that Brazil nuts play in sustainable livelihoods. As the ecosystem that supports Brazil nut production is quite diverse, maintaining livelihoods dependent on these nuts creates the incentive to conserve this ecosystem, rather than converting it to other uses.
- Seed fairs are increasingly popular methods of promoting agro-biodiversity whilst strengthening food security. Farmers are keen to participate as they provide an opportunity to obtain crop varieties with interesting and valuable qualities and exchange ideas on seed sources. In Maragwa, Kenya seed fairs have been held annually, having been originally initiated by an NGO in 1996.
- The decline in fish stocks within the Khong District of southern Lao People's Democratic Republic raised many local concerns. In response, the government in strong collaboration with the local communities established the Lao Community Fisheries and Dolphin Project which has established co-management planning mechanisms and regulations to sustainably manage the inland aquatic resource. Villagers have reported that as a result of these monitoring activities over a number of years there have been increases in the stocks of 50 species. (Baird, 2000)

Increasing awareness of the existence of these various initiatives, analysis of the factors underlying the success of each, and dissemination of positive impacts and lessons learnt to sectoral policy and decision makers must become a priority. This has sometimes been made more complicated as many of these initiatives have arisen in the absence of any donor or external support and are entirely self-driven and self-motivated, and thus hard to gather information on. At the same time, the more widespread uptake of successful initiatives has been hampered by the generally unsupportive or non-existent policy, institutional and legislative frameworks. And these are often reinforced by strict conditionalities around loans which dictate which policies highly indebted countries can pursue. In other instances successful initiatives have been attributed to one highly committed individual or organisation that has maintained a high level of support throughout. Consequently they have proved difficult to replicate. (Roe, *et al.*, 2000)

However, this does not mean that wider adoption of such activities is not possible.

There is a critical need now to build on these success stories by understanding which factors have contributed to their success in balancing biodiversity conservation with sustainable livelihoods, which factors constrain their wider adoption, and then to analyse how to create a more enabling environment - within policy, institutions and legislation - at local, national and international levels.

This opportunity must not be overlooked: the tropical zone continues to hold some of the world's most valuable biodiversity, the uniqueness of this asset and its value to all societies must offer comparative advantage through basing livelihood and economic development activities on maintaining a set of biodiverse assets, whether this means supporting corporate-community partnerships in ecotourism, or the production of 'bird-friendly' coffee by smallholders or direct payments to landholders from the marketing of environmental services. (Landell-Mills and Porras, 2002)

This is not about advocating sweeping changes towards 'biodiversity-friendly' forms of development. It is simply about highlighting the fact that there might be alternative ways of achieving viable and sustainable poverty reduction - that build on the conservation of the existing valuable biodiversity asset. Those actions being proposed should be seen as complementary ways forward, that have the potential to manage the 'trade-offs' and maximize the 'win-win' opportunities between biodiversity conservation and poverty reduction more effectively.

What is being advocated is the need to explore the sort of incremental changes, within policy, institutions and legislation, that could help provide the enabling environment for such activities to be tried, refined and expanded where appropriate. It is clear that there are many areas within the tropical region where conventional development has simply not worked for the majority, and if we are to be really serious about achieving the first Millennium Development Goal for all then there is a real need to consider these alternative approaches.

Priority areas of work required to move this important new agenda forward include:

- Stimulate the flow of information on innovative and successful community practices integrating biodiversity and poverty by establishing a 'clearinghouse of good practices' along with a deeper analysis and understanding of the policy, legal and socio-political environment that would allow for their more widespread adoption. Test these various approaches out.

- Generate a wider appreciation for the contribution that environmental goods and services make to production systems and markets, find ways to incorporate these in accounting procedures, and develop innovative payment systems to communities for provision of ecosystem services and other public goods.
- Expand worldwide demand and markets for goods produced in 'biodiversity friendly' ways and establish certification systems for sustainably produced community goods and services that do not discriminate against small or marginal producers.
- Provide appropriate support to Indigenous and other local peoples to address resource access and land ownership issues and facilitate processes that work towards bringing marginalised peoples into decision-making processes around land use (through capacity building, provision of information, applied 'socially' oriented research activities, etc.).
- Undertake a systematic analysis of the MDGs to identify opportunities where activities related to biodiversity can and should make a contribution to the achievement of the MDGs (through a careful review of each goal, target and indicator), and address the need to define and formulate new indicators for the MDGs since the current ones only reflect a limited aspect of biodiversity. ●

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References

- Baird, I. G. 2000. 'Towards Co-Management of Mekong River Inland Aquatic Resources, Including Fisheries, in Southern Lao PDR'. Evaluating Eden Discussion Paper No. 15. London, International Institute for Environment and Development.
- Landell-Mills, N. and I. Porras. 2002. 'Silver Bullets or Fools Gold? A Global Review of Markets for Forest Environmental Services and their Impact on the Poor'. London, International Institute for Environment and Development.
- Roe, D., J. Mayers, M. Greig-Gran, A. Kothari, C. Fabricius and R. Hughes. 2000. 'Exploring the Myths and Realities of Community-based Wildlife Management'. Evaluating Eden Series Overview No.8. London, International Institute for Environment and Development.
- Steenkamp, C. and J. Uhr. 2000. 'The Makuleke Land Claim: Power Relations and Community-Based Natural Resource Management'. Evaluating Eden Discussion Paper No. 18. London, International Institute for Environment and Development.
- United Nations. 1992. 'Convention on Biological Diversity'. New York, United Nations.
- WWF. 2000. 'Living Planet Report'. Gland, World Wide Fund for Nature Year 2000 'List of Threatened Species'. Available online at <http://www.redlist.org>.

Box 3. MILLENNIUM DEVELOPMENT GOALS AND TARGETS

GOAL 1: Eradicate extreme poverty and hunger	Target 1: Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day Target 2: Halve, between 1990 and 2015, the proportion of people who suffer from hunger
GOAL 2: Achieve universal primary education	Target 3: Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling
GOAL 3: Promote gender equality and empower women	Target 4: Eliminate gender disparity in primary and secondary education preferably by 2005 and to all levels of education no later than 2015
GOAL 4: Reduce child mortality	Target 5: Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate
GOAL 5: Improve maternal health	Target 6: Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio
GOAL 6: Combat HIV/AIDS, malaria and other diseases	Target 7: Have halted by 2015, and begun to reverse, the spread of HIV/AIDS Target 8: Have halted by 2015, and begun to reverse, the incidence of malaria and other major diseases
GOAL 7: Ensure environmental sustainability	Target 9: Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources Target 10: Halve, by 2015, the proportion of people without sustainable access to safe drinking water Target 11: By 2020, to have achieved a significant improvement in the lives of at least 100 million slum dwellers
GOAL 8: Develop a Global Partnership for Development	Target 12: Develop further an open, rule-based, predictable, non-discriminatory trading and financial system Includes a commitment to good governance, development, and poverty reduction - both nationally and internationally Target 13: Address the Special Needs of the Least Developed Countries Includes: tariff and quota free access for LDC exports; enhanced programme of debt relief for HIPC and cancellation of official bilateral debt; and more generous ODA for countries committed to poverty reduction Target 14: Address the Special Needs of landlocked countries and small island developing states (through Barbados Programme and 22nd General Assembly provisions) Target 15: Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term Target 16: In co-operation with developing countries, develop and implement strategies for decent and productive work for youth Target 17: In co-operation with pharmaceutical companies, provide access to affordable, essential drugs in developing countries Target 18: In co-operation with the private sector, make available the benefits of new technologies, especially information and communications

Source: www.undp.org/mdg

About the Equator Initiative

The Equator Initiative was created by UNDP in partnership with BrasilConnects, the Government of Canada, the International Development Research Centre (IDRC), IUCN - The World Conservation Union, Television Trust for the Environment (TVE), and the United Nations Foundation to reduce poverty through the conservation and sustainable use of biodiversity in the Equatorial belt by identifying and strengthening innovative community partnerships. It was designed recognising that the world's greatest concentration of both human poverty and biological wealth is found in tropical developing countries where the loss of biodiversity is accelerating as poverty is increasing. However, there are many creative and effective ways through which indigenous and other local communities are rising to these challenges. Whether for food, medicine, shelter or income generation, these groups are using their biological resources in a sustainable way to improve their livelihoods - yet their innovations remain largely unknown.

The *Equator Initiative* seeks to promote a worldwide movement to address these challenges through a three-part programme to:

- (1) Recognise local achievements through the 'Innovative Partnership Awards for Sustainable Development in Tropical Ecosystems'
- (2) Foster South-South capacity building through community-to-community learning exchanges;
- (3) Contribute to the generation and sharing of knowledge for policy impact through publications, radio, television and the Internet.

Current Equator Initiative partners:

- BrasilConnects (Brazil) - www.brasilconnects.org
- Government of Canada - www.canada.gc.ca
- IDRC (Canada) - www.idrc.ca
- IUCN - The World Conservation Union (Switzerland) - www.iucn.org
- Television Trust for the Environment (TVE, UK) - www.tve.org
- United Nations Foundation (UNF, USA) - www.unfoundation.org

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