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# ADDITIONAL BACKGROUND READING



## **Sustaining Biodiversity:**

Benefits for Communities - Business Opportunities for  
Financial Institutions

Panel Session  
**Tuesday October 21, 2003**  
**11:15 – 12:45 hrs**

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# Current Status and Future Potential of Markets for Ecosystem Services of Tropical Timber: An Overview

Excerpts from a report prepared for the International Tropical Timber Organization. The full text is available at <http://www.forest-trends.org>

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## EXECUTIVE SUMMARY

### Status of Forest Ecosystem Markets

The past decade has seen widespread emergence of markets and other payment schemes for forest ecosystem services – such as watershed protection, biodiversity protection and carbon sequestration - around the world. At a global scale, several recent reviews indicate these activities are nascent and still limited in scope and scale, but that they may have potential to be scaled up to regional, river basin or national levels with further development. Most of the activity to test such schemes to date has been in developed countries where biophysical science tends to be stronger and legal frameworks and institutions exist that permit the development of more sophisticated markets.

The strong and growing interest in developing these markets is driven by frustrations with traditional government regulatory approaches, growing recognition of the limits of protected area approaches to conservation, societal demands for ecologically sound products, and the forest-based industry's need to find additional revenue sources to remain competitive. Those concerned with conservation and development hope that such markets can contribute to forest protection and restoration and become a sustainable source of new income for the forest-dependent poor who own and administer an increasingly large share of the world's forests. Government officials, industry and community leaders globally are beginning to assess their strategic position in these markets: identifying their opportunities, the strategic risks of action and inaction, and the implications for their relative competitiveness. Those who have examined these options in depth find there is still a need for policy assessment and pilot experience to test instruments and learn jointly with local participants.

The many different types of market and payment schemes can be organized into four categories: (1) public payment schemes to private forest owners to maintain or enhance ecosystem services; (2) open trading under a regulatory cap or floor; (3) self-organized private deals; and (4) eco-labeling of forest or farm products, an indirect form of payment for ecosystem services. There are numerous examples of each type of market in both developing and developed countries.

Watershed protection services – such as flow regulation, water quality, water supply and habitat protection – are well recognized and indeed a primary motivation for establishing many national parks and forests. Some 30 percent of the world's largest cities currently depend on forest areas for their water. Markets for watershed services are site and user-specific, and currently are limited to situations where the downstream beneficiaries such as hydroelectric power generators, irrigators, municipal water systems, and industry, are directly and significantly impacted by upstream land use.

Public payment schemes predominate in scale (though not in number), and these payments can make a significant contribution to local incomes, as well as provide sufficient incentive to maintain forest cover. In Costa Rica, for example, landholders in critical watershed areas are paid between \$30 and \$50 USD per hectare per year and similar levels of payment are planned in Mexico. In the USA, government payments for ecosystem protection range from \$25 - \$125 USD per hectare per year. Self-organized private deals appear to be limited – although information is largely proprietary and there has never been a full assessment of these types of transactions. Open trading schemes – such as wetland mitigation banking – are few, and limited primarily to developed countries.

The many different biodiversity protection services – such as habitat and species conservation, genetic and chemical information, and ecosystem functions such as pollination – are increasingly recognized as critical to many economic sectors, such as commercial fisheries. Market mechanisms include land markets for high-biodiversity-value habitat, payments for private non-consumptive uses such as ecotourism, tradable rights and credits within a regulatory cap on habitat conversion, and eco-labeled products such as shade-grown coffee, herbal medicines, and other botanicals from natural forests. The trade in these product markets is booming, with medicinals derived from compounds originally found in forests worth tens of USD billion alone a year, but these benefits are rarely captured by forest peoples. Although the bioprospecting market is still evolving, it has not yet generated significant direct investment or payments to local people. A

recent global survey found 72 cases of biodiversity markets in 33 countries, of which 63 were in 28 tropical countries. Over 70 percent of these markets were international. Experts estimate that in the U.S. alone, over \$2 billion USD has been invested in easements for habitat conservation over the past several years.

Of all the forest ecosystem services, carbon sequestration has arguably drawn the greatest attention and enthusiasm in recent years. There is now scientific consensus that human activities have contributed to global warming and that forests play a major role in both overall global carbon emissions as well as providing the services of sequestration and storage. Market segments in which tropical forests can play a role include reforestation and afforestation within the Clean Development Mechanism (CDM) of the Kyoto Protocol (the global cap and trade scheme), and a range of land use options that are attractive to investors through non-Kyoto trading, and voluntary payments by emitters to achieve carbon neutrality. Given restrictions on forest carbon offsets and estimating a value of \$10 per ton, the CDM is expected to raise at most \$300 million per year for afforestation and reforestation in the first commitment period (2008-12). Estimates of the dollar value of forest carbon trading vary widely and ultimately depend upon the size of the market, which in turn depends upon the final rules adopted under Kyoto, European trading rules, and alternative schemes implemented by the US.

### **Key Findings: Market Characteristics**

- 1) *The total value of direct ecosystem service payments in tropical countries is presently modest, but has grown dramatically over the past decade and they are significant, particularly to low-income producers.* Tropical ecosystem services are not yet commodities; rather they behave as niche markets for products of special value to a narrow range of buyers. Ecosystem service payments will generally cover only a modest share of the costs of sustainable forest management and will be sufficient to finance forests managed for protection alone only where opportunity costs are very low – such as remote areas where forest production is not economically viable and land use alternatives are limited.

Very roughly estimated, the annual value of direct payments for forest ecosystem markets in tropical countries is in the order of hundreds of millions of USD. Indirect payments, via eco-labeled products such as certified lumber is much larger, generating approximately several billion dollars per year. Together, these are significant, but modest relative to the international trade in primary tropical timber products (logs, sawnwood, veneer and plywood) which is now approximately \$8 billion USD per year, or the total trade in tropical timber products, some \$20 billion USD per year, and the far larger value of domestic wood and NTFP markets. Direct and indirect payments for ecosystem services combined are approximately the same magnitude of total annual investments in forest conservation by governments, philanthropic organizations and intergovernmental organizations, which is somewhere between \$2 and \$2.5 billion USD per year.

- 2) *Markets for forest ecosystem services are expected to grow, in both developed and developing countries, over the next 20 years.* The potential for increased demand, and increased payment, for watershed services is immense. Water demand is projected to double, if not triple, over the next 50 years and much of this growth will be in developing countries. Downstream users are learning that investments in watershed protection can be far more economical than investments in new treatment facilities. Growth in the carbon market could potentially be large, but will depend on still unpredictable rules of international climate change mitigation. Markets for eco-labeled products for export and for urban consumers in middle-income countries are likely to be the fastest growing component of biodiversity markets.
- 3) *Governments play a critical role, as the principal direct buyers of many ecosystem services, and catalysts for many private sector direct payment schemes.* Since many ecosystem services are public goods, government intervention is usually required to make a market. This may entail directly paying for a service, establishing property rights, or establishing regulations that set caps and govern trading schemes. Since these markets are characterized by high transaction costs to link buyers and sellers, and the lack of specialized market institutions, government intervention is usually required to assist in addressing these two major constraints to market development. Indirect payments, via certification schemes, are dominated by private buyers.
- 4) *Ecosystem service payments will in most cases cover only a modest—but potentially catalytic-- share of the costs of good forest management.* Prices of ecosystem services are generally not sufficient to justify forest conservation in areas where there are moderate to high opportunity costs for the land. However, evidence suggests that these payments can have a disproportionate catalytic effect on forest establishment and management. Even modest payments, reliably paid over a number of years, can provide the increment to net income that makes forestry enterprises viable, justifying the restoration of degraded lands, and enhancing the livelihoods of poor people.

## Strategic Issues

Policy makers concerned with tropical forests are beginning to assess their strategic competitive position *vis á vis* the option of markets for ecosystem services. They are keen to understand if and when they should seek to compete in global markets, and what kinds of market approaches make sense in their own domestic contexts. Policymakers face a set of key issues when trying to adequately assess and develop these options.

- 5) *Property rights and national legal frameworks are necessary for ecosystem service markets to develop yet these are poorly developed in most producer countries.* Recognizing property rights and reforming legal frameworks are often politically contentious and costly, yet fundamental to establishing payment schemes of any type. Unfortunately forest areas in developing countries are currently characterized by overlapping and conflicting claims to land and historic tensions over the rights of indigenous and other local communities. In most places, it will be necessary to negotiate political support from key stakeholders in order to establish new markets.
- 6) *These markets are not likely to contribute substantially to poverty alleviation unless proactive efforts are made to recognize rights and shape markets to provide equal access to low-income producers of tropical forest ecosystem services.* As in the development of any new market, rules governing the market tend to be set by the more powerful sectors of society who have the capital and capacity to invest in designing the rules. To some extent, this is already taking place in the global carbon market. Implications of new markets, regulations and eco-labeling standards for low-income producers need to be identified and addressed.
- 7) *New market institutions are needed to reduce transaction costs and financial risks.* A major challenge of ecosystem service market development is to ensure that critical institutions are established to reduce transaction costs, and to provide intermediation between buyers, sellers, investors, certifiers and other key groups in the value chain. If there is not appropriate action to address this at both national and international levels, many market opportunities will simply fail to materialize, especially in poorer countries and for poorer forest producers.

## Knowledge Gaps

Information about ecosystem service markets is scarce and the capacity to assess and develop markets is limited. Progress is hampered by lack of understanding and political support from key stakeholders. Few national, state or local government entities have access to the information needed to shape policy on market design. Most market expertise is available only from the private sector, generally companies and consultants who are motivated by the opportunity to promote business deals. Where site-specific design input is commercially available, pricing of services reflects the fact that most expertise and most commercial demand is presently found in the industrialized countries. While technical expertise for measuring ecosystem services is becoming more available through universities, it is often difficult for governments or NGOs to access or apply in a site-specific project.

To realize the potentials of ecosystem service markets in tropical countries, leading organizations promoting forest stewardship will need to fill these knowledge gaps. In particular, policymakers and program leaders require:

- Objective technical assistance to identify opportunities and risks of using different market instruments, and designing them to be effective, efficient and equitable;
- Opportunities to exchange experiences, perspectives and lessons with peers in other countries and regions about the most appropriate legal and regulatory frameworks;
- Practical data on costs of production, transactions, establishment and management of different market mechanisms; and
- Capacity-building to develop sophisticated national expertise in analyzing, designing and implementing ecosystem service markets, in public, private and civic sectors.

Ecosystem service markets could potentially offer a powerful new set of incentives for tropical forest conservation and restoration, and new income opportunities for forest producers. However it remains unclear which producers, consumers and types of forest resources will be the real beneficiaries of market development. It is also unclear under what conditions the creation of ecosystem service markets will be the most effective policy instrument for achieving forest policy goals. Most markets are still incipient and their further development will require concerted government action. The decisions being taken over the next few years will shape market effectiveness, efficiency and equity for decades to come.

## Biodiversity Protection Services

Biodiversity is defined as the variability among living organism from terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part. Components of biological diversity include genetic variability within species, species and populations, ecological communities, ecosystems and landscapes. Lowland and mountain tropical

rainforests probably hold more than 65 percent of all terrestrial species, while tropical woodlands hold a high share of all dryland species (Wilson 1992). Conservation of this diversity requires provision for all species and ecological communities of adequate natural and managed habitat to provide nesting sites, protective cover, clean water, breeding territory, food sources in all seasons, predator-prey balance, and the presence of interdependent species (such as pollinators). While human intervention serves to protect biodiversity in many tropical ecosystems, biodiversity is widely threatened by deforestation, fragmentation, forest degradation and pollution. Annually, 14.2 million hectares of tropical forest are lost to deforestation (FAO 2001).

Barbault and Sastapradja (1995) estimate that loss rates of tropical forest of just under 1 percent area per annum could result in 1-10 percent of the world's species being lost over the next 25 years. Myers (2001) estimates current conservation models will end up allowing 30-50 percent species loss by the end of the 21<sup>st</sup> century.

Scientific studies indicate that biodiversity cannot be conserved by a small number of strictly protected areas. Conservation must be conceived in a landscape or ecosystem strategy that links protected areas, within a broader matrix of land uses that are compatible with and support biodiversity conservation in Situ (Agius 2001; McNeely and Scherr 2003). For example, a study being done in Mexico to identify the habitats that would need to be conserved in order to ensure 100 percent species survival shows that large areas of land presently under production or settlement would be needed, and that many existing public protected areas are "in the wrong place" (Brandon 2003).

### ***Benefits of Biodiversity Protection***

Biodiversity is valued for a wide range of services:

- *Provide habitat conditions that support diverse wild plant, animal and microorganism populations of economic, subsistence or cultural value.* For example, wild animals account for 25 percent of protein requirements in West Africa, and as much as 75 percent in Congo; in Botswana 50 different species account for 40 percent of protein consumption. Wild species are the source of traditional medicines basic to the health care of about 80 percent of people in developing countries. Over 5000 species of plants and animals are used for medicinal purposes in China alone. In dry ecosystems, open woodlands are critical sources of fodder for livestock herds (Kerkhof 2000). The health of natural freshwater and coastal fisheries is strongly affected by adjacent forests.
- *Maintain ecosystem functioning.* Research indicates that increased species diversity generally provides more opportunities for species interactions, which in turn improves the rates of resource use that govern ecosystem efficiency and productivity. Species diversity may increase reliability of ecosystem function, especially under conditions of dynamic environmental change. Many of these functions are critical to agriculture and forestry. Bats, bees, beetles and other insects are the principal pollinators of fruit trees, most important oil crops, coffee, coconut and major staple food crops including potato, cassava, yams, sweet potato, taro and beans (Prescott-Allen and Prescott-Allen 1990). Worldwide declines in pollinator populations threaten both the yields of major food crops and biodiversity of wild plants. For example, the cost to North American farmers from the one quarter decline in wild and domestic honeybees since 1988 is \$5.7 billion per year (Nabhan and Buchmann 1997). Ecosystem functions are also critical controlling human and livestock disease vectors (Melnick, et al 2003).
- *Conserve genetic and chemical information of potential future utility.* For example, the seed industry (the leading user of genetic resources) constantly seeks new genetic material to improve plant yields and performance, and draws on sources of genetic material from the wild. In 1993 in the USA, 57 percent of the top 150 prescription drugs contained at least one major active compound from biological resources. Between 2-10 percent of the crop protection product market of \$30 billion were developed from natural genetic material (Landell-Mills and Porras 2002). The combined commercial worth of all genetic materials has been estimated at \$500-800 billion per year (ten Kate and Laird 1999).
- *Provide insurance against future change.* For example, the greater resilience of diverse environments and species may be required to adapt to climate change.
- *Provide spiritual, aesthetic and cultural values.* For example, nature tourists dependent on access to biodiverse habitats and wild species, are 40 to 60 percent of all international tourists. Nature tourism is increasing at a rate of 10 to 30 percent a year. UK nature and beach tourism generates UK 14 billion pounds per year—3.5 times the annual level of public farm subsidies (Pretty 2002).
- *Ensure continued existence of wild organisms as legitimate claimants on earth's resources.* Some conservation advocates and investors are driven by ethical, philosophical and religious imperatives to conserve biodiversity. Many consumers of "biodiversity-friendly" products and investors in "biodiversity-friendly" companies are motivated by these concerns. The socially-responsible investment community uses environmental screens that often include

biodiversity protection. Socially screened portfolio assets in the United States surpassed the \$2 trillion mark in 2001 (SIF 2001).

### **Market Mechanisms**

The market for biodiversity protection can be characterized as a “nascent market.” Many approaches are emerging to remunerate financially the owners and managers of tropical forest resources for their good stewardship of biodiversity listed in **Table 1**. Diverse examples are listed in **Table 2**.

<i>Table 1. Types of Payments for Biodiversity Protection</i>	
<b>Purchase of High-Value Habitat</b>	
<ul style="list-style-type: none"> <li>▪ Private land acquisition (purchase by private buyers or NGOs explicitly for biodiversity conservation)</li> <li>▪ Public land acquisition (purchase by government agency explicitly for biodiversity conservation)</li> </ul>	
<b>Payment for Access to Species or Habitat</b>	
<ul style="list-style-type: none"> <li>▪ Bioprospecting rights (rights to collect, test and use genetic material from a designated area)</li> <li>▪ Research permits (right to collect specimens, take measurements in area)</li> <li>▪ Hunting, fishing or gathering permits for wild species</li> <li>▪ Ecotourism use (rights to enter area, observe wildlife, camp or hike)</li> </ul>	
<b>Payment for Biodiversity-Conserving Management</b>	
<ul style="list-style-type: none"> <li>▪ Conservation easements (owner paid to use and manage defined piece of land only for conservation purposes; restrictions are usually in perpetuity and transferable upon sale of the land)</li> <li>▪ Conservation land lease (owner paid to use and manage defined piece of land for conservation purposes, for defined period of time)</li> <li>▪ Conservation concession (public forest agency is paid to maintain a defined area under conservation uses only; comparable to a forest logging concession)</li> <li>▪ Community concession in public protected areas (individuals or communities are allocated use rights to a defined area of forest or grassland, in return for commitment to protect the area from practices that harm biodiversity)</li> <li>▪ Management contracts for habitat or species conservation on private farms, forests, grazing lands (contract that details biodiversity management activities, and payments linked to the achievement of specified objectives)</li> </ul>	
<b>Tradable Rights under Cap &amp; Trade Regulations</b>	
<ul style="list-style-type: none"> <li>▪ Tradable wetland mitigation credits (credits from wetland conservation or restoration that can be used to offset obligations of developers to maintain a minimum area of natural wetlands in a defined region)</li> <li>▪ Tradable development rights (rights allocated to develop only a limited total area of natural habitat within a defined region)</li> <li>▪ Tradable biodiversity credits (credits representing areas of biodiversity protection or enhancement, that can be purchased by developers to ensure they meet a minimum standard of biodiversity protection)</li> </ul>	
<b>Support Biodiversity-Conserving Businesses</b>	
<ul style="list-style-type: none"> <li>▪ Business shares in enterprises that manage for biodiversity conservation</li> <li>▪ Biodiversity-friendly products (eco-labeling)</li> </ul>	

<b>Table 2. Value of Payments for Biodiversity Conservation: Selected Examples</b>			
<b>Payment scheme</b>	<b>Country</b>	<b>Type of payment/ commodity</b>	<b>Estimated value (year)</b>
Critical Ecosystems Partnership (World Bank, Conservation International, GEF)	Developing countries	Fund to finance diverse groups to protect biodiversity	\$150 million capitalization
Ejido financing of local Pas – 7 million hectares	Mexico		\$14 million
BOCOSA Project- Osa Peninsula	Costa Rica	Payments to farmers of to conserve their lands	US\$24 ha/yr
Payment for Environmental	Costa Rica	Compensation to forest owners for the	US\$221 - \$344 ha/yr

Services (PES)		ecosystem services of their lands, as included in 1996 Forest Law	Total ~ \$14 million
Shade-Grown Coffee	Mesoamerica	Coffee trees grown among other trees enhancing biodiversity	US \$5 billion for sale of shade coffee in U.S. alone
Privately Protected Areas	Chile	Private investments in land conservation including: private parks, land donations to national park system, conservation communities, eco-real estate and ecotourism, and private administration of government conservation lands	n.a.
Wetland Banking	United States	Developers who have mitigated offsite draw from bank of ‘mitigation’ credits to offset damage to wetlands as development is implemented	US \$7500 - \$100,000 per acre (cost of banking credits)
Bioprospecting	Worldwide	Biodiversity prospecting, primarily pharmaceutical, to market products and conserve forests	~ US\$ 17.5 billion (natural-product drugs)
Ecological Value-added Tax	Brazil	Mechanism that compensates municipalities that have conservation areas. Stimulates improvement of existing areas or creation of new areas	US\$ 150 million (Parana State) US\$ 45 million (Minas Gerais)

**Land Markets for High-Biodiversity-Value Habitat.** National governments (public parks and protected areas), NGO conservation organizations (e.g., The Nature Conservancy) and individual conservationists have long paid for the purchase of high-biodiversity-value forest habitats. Direct acquisition can be expensive, as underlying land and use values are also included. Local sovereignty concerns arise when buyers are from outside the country, or even the local area, or where extending the area of non-commercial real estate reduces the local tax base. New commercial approaches are being developed to encourage the establishment of privately owned conservation areas, such as the conservation communities, ecotourism-based land protection projects and eco-real estate projects being organized in Chile (Corcuera, Sepulveda and Geisse 2002). These build on growing consumer demand for housing and vacation in biodiverse environments.

**Payments for Biodiversity-Conserving Use or Management.** A lower-cost approach to securing conservation is to pay only for the biodiversity services themselves, by paying landowners to manage their assets so as to achieve biodiversity or species conservation. Probably the largest-scale payments for land use or management agreements are government agro-environmental payments made to farmers in North America and Europe for reforesting conservation easements and management contracts aiming to conserve aquatic and terrestrial wildlife habitat (OECD 2000). In Switzerland, “ecological compensation areas” using farming systems compatible with biodiversity conservation have expanded to include more than 8 percent of total agricultural land. In the tropics, diverse approaches include nationwide public payments in Costa Rica for forest conservation (Chomitz et al. 2001), and payments by conservation agencies, such as conservation concessions being negotiated by Conservation International (Rice 2001), and forest conservation easements negotiated by the “Cordão de Mata” project is doing with dairy farmers in Brazil’s Atlantic Forest in exchange for technical assistance and investment resources to raise crop and livestock productivity (McNeely and Scherr 2003). Some countries that use land taxes are using tax policies in innovative ways to encourage the expansion of private and public protected areas, as illustrated in **Box 1** for Brazil.

### **Box 1. Brazil Value-Added Tax for Conservation**

Brazil has been actively promoting its protected areas as critical instruments for biodiversity conservation and watershed protection. Yet results have often been unsatisfactory. Strict government regulations restricting forest exploitation and requiring property owners to rehabilitate degraded areas have limited the profitability of the forest sector. Furthermore, lax enforcement has provided an incentive for landowners to disregard these regulations that have proven expensive to follow.

In 1991, the General Assembly of the State of Paraná passed a law requiring that 5 percent of the revenues it received from the Circulation of Goods and Services (ICMS), an indirect tax charged on the consumption of goods and services, be distributed according to environmental standards. 2.5 percent was to go to those municipalities with conservation units or protected areas and the other 2.5 percent to municipalities that supply water to neighboring municipalities. The transfer is basically a compensation for the opportunity cost of development foregone by environmental protection but it is not calculated according to scientifically established relationships between forest cover and water improvement. The municipalities are in competition with other municipalities within Parana for the ecological ICMS. The more areas within the municipalities that are involved in ecological activities the more revenues the municipalities will receive from the State. But the more ecological tax motivates municipalities to expand protected areas, the less each such protected area will be worth at the margin, because the overall tax base expands slowly. Furthermore, the new tax revenues are not earmarked for activities that improve environmental protection locally. An innovative protected area quality ranking system has made the scheme- now adopted in over 10 Brazilian states - more effective.

Source: Perrot-Maître and Davis 2001 and May, et al. 2002.

***Payment for Private Access to Species or Habitat.*** Private sector demand for biodiversity has tended to take the form of payments for access to particular species or habitats that function as “private goods,” but in practice serve to cover some or all of the costs of providing broader ecosystem services. Pharmaceutical companies have contracted for “bioprospecting rights” in tropical forests (**Box 2**). Ecotourism companies have paid forest owners for the right to bring tourists into their lands to observe wildlife, while private individuals are willing to pay forest owners for the right to hunt, fish or gather non-timber forest products.

### **Box 2. From Bioprospecting to Botanicals**

Bioprospecting was viewed throughout the 1990s as a major potential source of financing for biodiversity conservation. The pioneering agreement between Costa Rica’s National Institute of Biodiversity (INBio) and Merck for generalized research on tropical botanical species from a highly biodiverse set of ecosystems has not been followed by other company-country partnerships of this nature, where direct payments were agreed on a per hectare basis based on calculated returns from identifying new pharmaceuticals. Rather, the conservation potential of bioprospecting is coming from more indirect returns, from the large role of natural products and their derivatives—botanicals—as key active ingredients in high-value drugs. While a few countries have tithed financial earnings from bioprospecting to conservation, in most cases financial investments have taken place in parallel as a result of recognition of the importance of conservation for its multiple benefits, including the market.

Local and national benefits of partnerships are thus coming indirectly from sustainable economic activities based on raw material supply, capacity-building and support for biodiversity science, country capacity to undertake research and develop its own biodiversity, and diverse spin-off benefits to research institutions, local businesses and others. For example, while the National Cancer Institute maintains a joint venture with the government of Sarawak for research into two potential anti-cancer compounds which provides Sarawak with flexible benefit-sharing arrangements over time, NCI has abandoned a similar arrangement in Cameroon, and another pharmaceutical bioprospecting venture, Shaman Pharmaceuticals in the Amazon has folded.

The importance of botanicals in medicine continues to be enormous. Natural products or entities derived from natural products made up 11 of the 25 best-selling drugs in 1997, with a 1997 value of US\$ 17.5 billion. Between 10 and 50 percent of the ten top-selling drugs of each of the top 14 pharmaceutical companies are either natural products or entities derived from natural products.

There are also high values in other industries-- seed, crop protection, horticulture, botanical medicine, personal and cosmetic care, and biotechnology sectors. The next generation of issues relate to establishing adequate legal frameworks, recognizing indigenous intellectual property rights, and creating multiple layers of access and benefit-sharing.

Source: Laird and ten Kate 2002.

**Tradable Rights and Credits within a Regulatory Framework.** Multi-actor markets for ecosystem services have been successfully established, notably for sulfur dioxide emissions, farm nutrient pollutants and carbon emissions, by creating rights or obligations within a broad regulatory framework. Developing such markets for biodiversity is more complicated, because specific site conditions matter so much. The United States has operated a wetlands mitigation program since the early eighties in which developers seeking to destroy a wetland must offset that by buying wetland offsets conserved or developed elsewhere. A variant of this approach is being designed for conserving forest biodiversity in Brazil by permitting flexible enforcement of that country's "50 percent rule" requirement landholders in Amazon forest areas to maintain half of their land in forest, as well as in other regions where lesser proportional areas are set aside for forest use (Chomitz 2002). Careful designation of comparable sites is required. Another approach under development in Australia is biodiversity credits. In this system, legislation creates new property rights for private landholders who conserve biodiversity values on their land, who can sell resulting 'credits' to a common pool. The law also creates obligations for land developers and others to purchase those credits. The approach requires that the "value" of the biodiversity unit can be translated into a dollar value (Agius 2001).

**Biodiversity-Conserving Businesses.** Conservation values are beginning to inform consumer and investor decisions. Eco-labeling schemes are developing that advertise or certify that products were produced in ways consistent with biodiversity conservation. The global trade in certified organic agriculture was worth of \$21 billion worldwide in 2000 (Clay 2002). International organic standards are expanding to landscape-scale biodiversity impacts. The Rainforest Alliance and the Sustainable Agriculture Network certify coffee, bananas, oranges, and other products grown in and around high-biodiversity-value areas. The Sustainable Agriculture Initiative is a coalition of multi-national commercial food producers (Nestle, Dannon, Unilever and others) who are seeking to source commodity supply from producers who are protecting biodiversity. In 2002, over 100 million hectares of forest were certified (a 4-fold increase over 1996), although only 8 percent of the total certified area is in developing countries, and most of that is in temperate forests.

**Current Market Demand**

Available data suggest that biodiversity protection services are presently the largest market for ecosystem services. A McKinsey-World Resources Institute-The Nature Conservancy team estimated the annual international finance for conservation (protecting land from development) market at \$2 billion, with the forest component a large share of that. The buyers are predominantly development banks and foundations in the U.S. and Europe (Arnold and Jenkins 2003; see Table 3).

<b>Table 3. Estimated Financial Flows for Forest Conservation</b>				
<b>Sources of Finance</b>	<b>SFM (early Nineties)</b>	<b>SFM (Early 2000)</b>	<b>PAS (early nineties)</b>	<b>PAS (early 2000)</b>
ODA	\$ 2b - \$ 2.2b	\$1b - \$ 1.2b	\$ 700m - \$ 770	\$ 350m - \$ 420m
Public Expenditure	NA	\$ 1.6b	NA	\$ 598m
Philanthropy*	\$ 85.6m	\$ 150m	NA	NA
Communities**	\$ 365m-\$730m	\$ 1.3b – \$ 2.6b	NA	NA

\* Underestimates self financing and in-kind NGO contributions

\*\* Self-financing and in-kind contributions from indigenous and other local communities. Estimated community managed forests in 1990: 100 m hectares.

NA – Not Available  
Source: Khare 2003.

A study by the International Institute for Environment and Development (IIED) of 72 cases of markets for forest biodiversity protection services in 33 countries (63 cases in 28 tropical developing countries) found that the main buyers of biodiversity services (in declining order of prevalence) were private corporations, international NGOs and research institutes, donors, governments and private individuals. Of these cases, 73 percent were international markets, and the rest were distributed among regional, national and local buyers (Landell-Mills and Porras 2002). International and many national actors demanding biodiversity protection services tend to focus on the most biodiverse habitats (in terms of species numbers), or those perceived to be under the greatest threat globally (high number of endemic species where habitat area has greatly declined).

Most of the private corporations were interested in eco-labeling schemes for crops or timber, investment in biodiversity-friendly companies, horticultural companies concerned with ecosystem services, or pharmaceutical bioprospecting. Such private payments are usually site-specific. Local actors more commonly focus on protecting species or habitats of particular economic, subsistence or cultural value. Development of market-based conservation for tropical forest

biodiversity is most advanced in Latin America. Although the highest overall level of expenditure on conservation is found in Africa, very little of this is channeled through market or payment schemes.

***Projected Growth in Market Demand***

The fastest-growing component of future market demand for biodiversity services from tropical forests is likely to be in eco-labeling of crop, livestock, timber and fish products for export and for urban consumers in middle-income tropical countries. Pressures continue to increase on major international trading and food processing companies to source from suppliers who are not degrading ecosystem services (Clay 2003). Demand for organic farm products is increasing at 20 percent per year, and the international organic movement is strengthening standards for biodiversity conservation (IFOAM 2002). Voluntary biodiversity offsets are also a promising source of future demand, as many large companies are seeking ways to maintain their “license to operate” in environmentally sensitive areas, and offsets are of increasing interest to them.

The cost and political resistance to land acquisition are rising. Construction of biological corridors in and around production areas is an increasingly important conservation objective, while many of the most important sites for biodiversity conservation are in more densely populated areas with high opportunity costs for land. Thus we are likely to see a major shift from land acquisition to various types of direct payments for easements, land leases and management contracts.

## Greening Sustainable Finance\*

Frank Vorhies (CEO, Earthwatch Europe)

The number of companies considering the concept of sustainable finance is growing continuously. By including the protection of biodiversity into their portfolio of sustainability policies, financial institutions and companies have an opportunity to green their sustainability practices. This article will show that companies committed to global sustainability should also be committed to biodiversity responsibility.

The first section briefly reviews the place of biodiversity in international thinking about sustainable development. The next section explains how biodiversity relates closely to various concepts of sustainability including sustainable business and sustainable finance. The last section provides an example of how to integrate the concept of biodiversity into sustainable finance by focusing on the IFC's new approach on sustainability.

### Biodiversity and sustainable development

Since at least the founding of IUCN-The World Conservation Union in 1948, the conservation community has recognised an interrelationship between nature conservation and economic growth. This thinking culminated in the Rio Earth Summit – the 1992 UN Conference on Environment and Development, which saw the launching of the Convention on Biological Diversity. A decade on, in 2002 at the World Summit on Sustainable Development in Johannesburg, biodiversity was explicitly recognised as a key component of sustainable development and the Plan of Implementation explicitly recognises the critical role of biodiversity in overall sustainable development and poverty eradication. The Plan called on Governments to “integrate the objectives of the Convention ... in particular in the programmes and policies of the economic sectors of countries and international financial institutions.”

More recently, in a statement by Kofi Annan, the UN Secretary General on the 2003 International Day of Biological Diversity:

“Biological diversity is a widely under-appreciated resource that is essential for human existence and has a crucial role to play in sustainable development and the eradication of poverty. Biodiversity provides millions of people with livelihoods, helps to ensure food security, and is a rich source of both traditional medicines and modern pharmaceuticals. Biodiversity also provides basic ecological services on which all life depends. ...The preservation of biodiversity is not just a job for governments. International and non-governmental organizations, the private sector, and each and every individual have a role to play in changing entrenched outlooks and ending destructive patterns of behaviour. ...Biodiversity is an essential heritage for all humankind. Stopping its loss, and guaranteeing the continued functioning of the earth's ecosystems – both marine and terrestrial – should be a high priority for everyone.”

Financial institutions committed to making a contribution to sustainable development, such as those investing in emerging markets, can strengthen their commitment by integrating biodiversity into their efforts.

### Biodiversity's triple bottom line

Today concepts of sustainability centre around a trinity of environment, economic and social objectives which is often called the triple bottom line. This trinity relates well with the three objectives set out in the in the Convention on Biological Diversity. Conservation of biodiversity is an environmental objective, sustainable use of biological resources is an economic objective, and equitable sharing of biodiversity benefits is a social objective. Hence biodiversity is compatible with the triple bottom line concepts of sustainable business, sustainable finance and sustainable development:

	<b>Biodiversity</b>	<b>Sustainable Business</b>	<b>Sustainable Finance</b>	<b>Sustainable Development</b>	
<b>Environmental</b>	Biodiversity conservation	Environmental protection	Environmental value	Environmental protection	<b>Planet</b>
<b>Economic</b>	Sustainable use	Economic growth	Economic value	Economic development	<b>Profits</b>
<b>Social</b>	Equitable sharing	Social equity	Social value	Social development	<b>People</b>

\*The article was originally a contribution to the UNEP FI report *Values to Value*, to be published November 2003

Whether a company is using an ISO14001 environmental management system, an ecological standard or certification scheme such as the Marine Aquarium Council, or a reporting process based on the Global Reporting Initiative, it should be able to integrate biodiversity into its triple bottom line policies and practices.

### **Biodiversity and the IFC approach to sustainability**

The IFC (International Finance Corporation – the private investment arm of the World Bank Group) has produced a new approach to “measuring sustainability” in an effort to integrate global objectives considerations into its own business model and its emerging markets investment portfolio. The concept is based on an 8 x 4 framework matrix for sustainability, and this section briefly introduces how biodiversity relates to this matrix.

#### ***Performance levels***

The IFC approach has 4 performance levels:

- (1) Complies with IFC and national required standards,
- (2) Shows added environmental, social or corporate governance value,
- (3) Indicates high performance, and
- (4) Recognises leadership.

Regarding level 1, companies need to ensure that their relationship with biodiversity is compliant with the IFC/World Bank safeguard policies. These policies are the basis of the recently launched Equator Principles. The policies most relevant to biodiversity include: Environmental Assessment (OP4.01), Natural Habitats (OP4.04), Pest Management (OP4.09), Forestry (OP4.36), Safety of Dams (OP4.37), International Waterways (OP7.50), Indigenous Peoples (OD4.20), and Involuntary Resettlement (OD4.30).

In general, these safeguard policies focus on “doing no harm” and minimising the environmental and social risk of an IFC investment. From a biodiversity and sustainability perspective, companies must as a very minimum be compliant with the policies.

Regarding compliance with national standards, the challenge of compliance is not so great for companies operating only in one country as it is for companies operating in a number of countries. Even for companies operating in one country, however, the challenge may be significant if the national standards are not clearly articulated or enforced. For both multinational companies and companies operating in countries with weak national standards reliance on compliance with the IFC safeguard policies along with the relevant components of biodiversity-related international agreements is recommended for level 1 performance.

Regarding level 2 performance, a key consideration for the IFC is that the “company creates local or global benefits by reducing waste, emissions, or use of natural resources or helps spread the benefits accruing from its economic activity to the local community or to groups that often fail to benefit from such activity.” A significant contribution to the third biodiversity objective on equitable sharing of biodiversity benefits would indicate a level 2 performance in terms of biodiversity responsibility.

To obtain level 3 performance which is considered “high” a company would have to significantly “leverage change within a region, sector or a supply chain.” Regarding a regional change, this could be accomplished by playing a significant role in biodiversity conservation within a regional landscape or seascape. Regarding a sector change, this could be accomplished by playing a leadership role on biodiversity responsibility within sector-wide associations and initiatives. Regarding a supply chain change, this could be accomplished by extensively managing the ecological footprint and sustainability of the company’s use of biological resources.

To obtain level 4 performance, the company must be widely recognised as a global leader with respect to biodiversity responsibility. For example, the company may not only be working closely with its host government or governments on methods for sustainable use, but it would also be engaged in relevant international associations and initiatives to share experiences and promote such efforts globally.

### ***Sustainability factors***

The IFC approach lists 8 sustainability factors grouped into three issues areas. The following table shows how biodiversity relates – directly or indirectly – relates to these factors:

IFC sustainability factor	Relationship with Biodiversity
<b>Management, commitment and governance</b>	
Factor 1: Environmental management, social development and capacity	Biodiversity should be an integral part of a company’s environmental management strategy and action plan.
Factor 2: Corporate governance	Biodiversity responsibility, like corporate governance, is a factor which can significantly influence a company’s reputation and brand value.
Factor 3: Accountability and transparency	Reporting on biodiversity performance should be integrated into a company’s triple bottom line reporting policies and practices.
<b>Environment</b>	
Factor 4: Eco-efficiency and environmental footprint	Both factors focus on the company’s relationship with its natural environment of which biodiversity is a key component. Specifically in the context of these factors, a company should undertake a “biodiversity SWOT appraisal” of its relationship to biodiversity and should implement a biodiversity strategy and action plan.
Factor 5: Environmental performance of products and services	
<b>Socio-economic development</b>	
Factor 6: Local economic growth and partnerships	Biodiversity-responsible business will promote sustainable local economic
Factor 7: Community development	The third biodiversity objective on benefit sharing relates directly to community development.
Factor 8: Health, safety, and welfare of the labour force	A biodiversity-responsible company is a company that is explicitly concerned with the sustainability of its labour force as well as with the sustainability of the communities from where they come.

Though the IFC’s 8 x 4 sustainability framework approach is complex, biodiversity responsibility can be fully integrated into it and thus become one of the key components of IFC’s contribution to sustainable finance and sustainable development. For companies this compatibility eases what is indeed a very complex task of integrating sustainability factors into their plans and operations. For financial institutions, integrating biodiversity into the IFC’s framework is a practical approach to greening sustainable finance.

## **Fighting Forest Fires through Financial Institutions\***

*Eric Wakker (AIDEnvironment) and Jan Willem van Gelder (Profundo)*

**Early 2002, the top-four Dutch banks - ABN AMRO Bank, Rabobank, Fortis Bank and ING Group - declared they would stop or substantially restrict the financing of the development of oil palm plantations for which tropical rainforest is destroyed.**

This commitment is the result of the joint efforts of a range of NGOs in Europe (Friends of the Earth, Greenpeace and WWF) and in Southeast Asia (Sawit Watch, Walhi and WWF) as well as the banks' increased sensitivity to criticisms and inputs of external stakeholders. This article elaborates on the process that led to this first break-through in commercial banks' environmental screening policy for international and sector-specific financing. The authors were closely involved in this process through a series of projects.

### **Fires and finance**

The Dutch commitment stems from the rampant forest fires in Indonesia in 1997-'98 when, in just two years, ten million hectares of forestland in "the Emerald Girdle" burnt to ashes.<sup>1</sup> Many will recall that these fires created a vast cloud of transboundary air pollution that covered much of Indonesia, Malaysia and Singapore for several months in a row. A WWF study assessed that the health of no less than 70 million people was affected. Billions of tonnes of carbon dioxide were released in the atmosphere making Indonesia the single largest contributor to global warming in these years. According to the United Nations Development Program (UNDP) the fires and haze came at a cost of US\$ 10 billion, a bill which was largely absorbed by the Southeast Asian population and the environment.

Western governments began to offer millions of dollars and supplied fire fighting expertise and equipment to Indonesia. But it was soon found that they were throwing money in the flames: fires that were put out one day were burning again the day after. Images of orang-utans literally burning to death in the treetops also triggered widespread concern among the general public. In the Netherlands alone, WWF raised over Euro 200,000 in just two months to develop a programme to counter the razing fires. It commissioned AIDEnvironment to design and coordinate several studies to identify and analyse the cause of the Indonesian forest fires.

These studies showed that although the El Niño draught definitely aggravated fires hazard, there was also widespread consensus that most fires were purposely set and that most were linked to oil palm and pulpwood plantation companies who had embarked extensive expansion programs in the 1990s. The companies resorted to the cheapest and quickest - albeit illegal - means to clear the forestlands they aimed to develop: open burning.

It became evident that, from the conservation perspective, there was no quick fix for the fire and haze problem. Then how to address these problems? The Indonesian authorities were clearly unable to stop the fires. Suharto's New Order Regime had already begun to loose authority throughout the country. Besides, Suharto's calls to stop burning was perceived with irony, as many of the plantation companies involved in burning were somehow linked to the first family's members and business friends. Palm oil buyers, such as ADM, Unilever and Cargill, represented another potential group of actors that could be approached. These companies, however, could easily claim that their products only came from readily established plantations and that, therefore, they were not to be held accountable for expansion activities. While this argument is ultimately faulty, addressing the issue through the market at this stage was not the best approach.

An alternative target group came into view when an article in The Jakarta Post appeared in November 1997. The issue covered the fire damages and the role of oil palm plantation companies as well as the following news item:

#### **Edible oil maker gets \$30m loan**

11 November 1997. JAKARTA (JP):

Publicly listed cocoa and edible oil producer PT Cahaya Kalbar has secured a US\$30 million syndicated loan from local and foreign banks. A director of the firm, Robertus Sampara Lie, said yesterday about \$19 million of the loan, which had a maturity of two years and an interest rate of 1.5 percent above the Singapore Inter Bank Offer Rate (SIBOR), would be used to finance the acquisition of PT Mintawi, another edible oil producer. "The balance of \$11 million will be used to pay off the short revolving loan and will also be used as a standby loan," he said yesterday.

He said the loan was arranged by the Singapore branch of the Netherlands-based Rabobank and its joint venture, Rabobank Duta Indonesia. Other banks involved include Sanwa Bank Ltd. of Singapore, PT Sanwa Indonesia Bank, PT Bank DBS Buana, the Development Bank of Singapore Ltd, the Singapore branch of Arab Banking Corp., the Singapore branch of Commerzbank Aktiengesellschaft, the Singapore branch of Royal Bank of Scotland, the Singapore branch of Standard Chartered Bank, the Singapore branch of Tokai Bank Ltd.

\* The article was originally a contribution to the UNEP FI report *Values to Value*, to be published November 2003

Up to then, few people in the conservation movement were aware of the relation between the forest fires and the billions of dollars that hundreds of European, American and Asian financial institutions had extended to the plantation companies in Indonesia since the early 1990s.

In 1999, Greenpeace Netherlands commissioned an in-depth study to AIDEnvironment to look into the relations between Dutch financial institutions and the oil palm plantation industry in Indonesia. A subcontracted study by Profundo disclosed that between 1994 - 1999, all major Dutch banks (ABN-AMRO Bank, ING Group, Rabobank and Fortis) had financial ties with several of the main plantation company groups such as the Sinar Mas, Raja Garuda Mas, Astra, Bakrie, Salim and Risjadson groups through a range of short-term and long-term loans, bonds issuances and IPOs. Field level case studies conducted by the Indonesian NGO Telapak showed that many of the hundreds of subsidiaries belonging to the company groups were involved in deforestation, forest fires and other illegal activities and conflicts with local communities. Analysis of the various forms of involvement showed that Dutch banks were frequently in a solid position to influence the environmental policies of their clients but at the same time had not effectively applied their leverage.<sup>2</sup>

In June 2000, Greenpeace sent copies of the report to each of the banks and proposed they adopt a basic set of investment criteria to help avoid these problems. About a year later, the Association of Dutch Bankers (NvB) proposed a meeting be held with NGOs at the Greenpeace office in Amsterdam. During this meeting, it became apparent to the NGOs that the banks tried to downplay their role and influence by suggesting that they only financed replanting of old palm oil estates; that the Indonesian government should be held accountable; if not local communities or palm oil buyers such as Unilever.

### **Bilateral talks**

Bank secrecy subsequently led to the dissolving of the dialogue organised by the NvB; the banks expressed discomfort in discussing the activities of their clients in the presence of their competitors because of pledged confidentiality. It was proposed that bilateral talks were held between the NGOs and individual banks.

These talks led the NGOs to conclude that the banks still failed to acknowledge their responsibilities. Even during these talks, banks were unwilling to discuss the specific poor performances of individual clients. Several banks continued to argue that they had already effective due diligence policies in place and that their clients already adhered to these policies.

Well before these discussions, Friends of the Earth Netherlands had already commissioned an update of the Funding Forest Destruction report and a case study the field level practises of one of the clients that had recently received financial services from one or several of the Dutch banks. For the case study the oil palm plantation company PT Matrasawit was selected which is part of the PT SMART holding of the Sinar Mas group. ABN Amro, ING Group and Rabobank had extended a major loan to PT SMART in May 2000. It was found that the company was involved in illegal land clearing and burning, conversion of primary forest and had conflicts with local communities. Hence the study concluded "that significant gaps exist between what ING Group and Rabobank claim with regards to the sustainability performance of their client and what the study uncovered."<sup>3</sup>

In May 2001, Friends of the Earth published the case study and launched a postcard campaign enabling the public to call upon the Dutch banks stop financing unsustainable plantation companies. The postcard action resulted in an exceptionally high public response and the report was widely covered in the Dutch and Belgian media. It also created political interest leading to parliamentary questions to forward to the Dutch government. The NGOs felt they needed to come out *en public* for they felt that negotiations were not leading to concrete results. However, several banks exclaimed their frustration with the action, as in their view constructive negotiations were still ongoing.

Between July and October 2001, the banks and NGOs continued talks about the scope of the set of criteria to be applied for investments in the oil palm sub-sector. During these discussions, ABN Amro bank clearly emerged as most committed to better understanding of the issues at hand. The Amsterdam branch organised a 10-day trip to Indonesia in August 2001 and met with all key grassroots and conservation NGOs to discuss concerns over oil palm development and deforestation. The itinerary also included a field trip to Riau province where forest destruction for plantation development was observed in the field and further focused dialogue with local and Dutch NGOs followed there after.

### **Final agreement**

Negotiations with the banks came to an end when in November 2001 Friends of the Earth challenged Rabobank, Fortis Bank and ING Group to join ranks with ABN Amro to agree on the guidelines proposed. Both Rabobank and Fortis agreed, while ING Group declined initially and joined ranks early 2002. It was agreed that when new financial services were to be offered to palm oil companies, the banks would assure that their clients should:

1. Not be involved in burning forestland for oil palm development
2. Not be clearing tropical rainforest for oil palm development
3. Respect the rights and wishes of local communities
4. Respect Indonesia's law and relevant international conventions.<sup>4</sup>

ABN Amro bank clearly went beyond these criteria and developed a far more comprehensive policy that applies to all investments that might affect forests, including logging, pulp and paper, mining and oil & gas development in all countries. This policy led to a major cleansing of the bank's forestland-based portfolio in the producer countries.

### **Spin off**

By the time the Dutch banks came out, the campaign had already begun to spread to other European countries and the USA where conservation and environmental groups approached investors and buyers to justify their investments and purchases from Indonesian plantation companies. A 1998 report on Germany's role in Indonesia's forest fires through palm oil consumption first triggered a major Swiss retailer, Migros, to develop and adopt criteria for its palm oil suppliers in close collaboration with WWF. In 2001 and 2002, Friends of the Earth released detailed reports in the UK on the financiers behind two major pulp and paper companies in Indonesia, Asia Pulp & Paper (APP) and Riau Andalan Pulp and Paper (PT RAPP). Rainforest Action Network in the US held Citigroup accountable for, among other, financing an oil palm company that destroyed potential orang-utan habitat. The campaign came to a temporary "cease fire" in April 2003 when Citi signalled it wanted to engage into negotiations with RAN to adopt policy language on categories such as illegal logging, prohibiting investments for projects that degrade endangered ecosystems (no-go zones), assessing the greenhouse gas emissions of the projects that they fund, and creating more robust financing for sustainable forestry, renewable energy, and other positive alternatives.

During a European seminar on Finance, Sustainability and Environment in Paris, January 2003, it was already apparent that the financial sector's acceptance of its responsibility and accountability for the impacts of international mainstream investments has grown tremendously. While there is still much scope for broader acceptance of such recognition, the key challenges that committed financial institutions will now face is *de facto* implementation and a continuing learning process *together* with non-financial stakeholders.

### **Monitoring**

The Netherlands agreement was made at a time when foreign investments in Indonesia had reached the lowest level in years. It was therefore not possible to immediately assess and monitor the impact on Indonesia's forests and communities. In 2003, however, lending to the oil palm sector began to pick up again and currently studies are on-going to see to what extent the banks have implemented their commitments. Up to date, most Dutch banks have not proactively continued their dialogue with the NGOs to discuss more recent developments in Indonesia or the forest-based sectors in general.

NGOs are likely to measure the performance of the banks' commitments on the basis of their new lending behaviour, actual implementation through third party assessments, transparent (public) reporting and a willingness to develop truly sustainable development alternatives.

### **Towards sustainable development investment**

NGOs have a complex agenda to push among the financial community. The Indonesian forest fires may have triggered some banks to adopt an investment policy it must be recognised that these are only risk aversion oriented. This, in itself, does not provide sufficient incentives to investment officers to seek sustainable investment targets. In fact, there is a risk that investment will be diverted away from high-risk regions and sectors that are really in great need of financial backing to make sustainable management practises possible. Most NGOs would like to see financial institutions invest proactively in sustainable development alternatives rather than disappear from the scene completely, which may often be the lowest risk option for a bank. Which bank, for example, is prepared to finance tropical forestry where returns may not be generated within the usual 3-10 year time horizon, *because* its management is based on sustainability principles?

It is also important for financial institutions to review the integrity of their full portfolio in relation to their investment policies. For example, some banks finance both forest conversion projects as well as timber traders who ultimately depend on the timber from exactly those forests that are converted to other land uses. Similarly, it makes no sense to one the one hand finance fossil fuel extraction and green energy distributors who are trying to gain a market share on the other.

### **Stakeholder dialogue**

The Dutch NGOs gave their target group ample time to strategize and communicate with their clients. Yet most bank representatives would probably agree that before issues could be settled, public exposure is required. This may also be

necessary if the commitments do not appear to have been implemented as agreed or as communicated. In a single day, public exposure can damage a public image built carefully over a range of years. The costs of restoring such image may by far exceed to costs of entering into dialogue and following up with concrete action.

A number of major players in the tropical timber trade have found that open and transparent dialogue is "absolutely critical" to achieving their goals. A recent booklet by members of the Tropical Forest Trust (TFT) carries the following messages, which are also highly valid to financial institutions:

Be prepared for bad news – very bad news. You might just find that one or more of your supply chain partners, people that neither you nor your direct supplier knew were involved, are guilty of extremely poor practices. Some wood suppliers are famous in their own countries for very bad practices indeed, with allegations of murder not unknown. Such is the nature of parts of the international wood trade.

Meet your stakeholders and hear what they've got to say about you, your company and the places you get wood from. At first, this might be difficult and painful, but work through the process, remain open and transparent and accept what people say. If you can do this, you will start to develop a good relationship with the people who can be most helpful. You are also likely to learn a great deal about things that have a major impact on your business and (most importantly) on your ability to achieve your goal.

Your communications program must be founded on the principles of openness and transparency. You must adopt a philosophy of 'I've got nothing to hide' (except of course commercially confidential company information) about things that have a major impact on your business and (most importantly) on your ability to achieve your goal.

Be frank and open about the problems encountered, constraints uncovered, and targets missed. The Report should highlight your thinking on how you will overcome these problems. When writing Progress Reports, be honest at all times. Never over-state your achievements - such claims will come back to haunt you.<sup>5</sup>

## Conclusion

The Indonesian palm oil case was one of the triggers in the international investment community to begin thinking about its roles and responsibilities. Under pressure, Dutch banks have adopted defensive risk aversion policies for which they deserve credit. This has contributed to an irreversible spin off effect. But much more remains to be done before forest destruction is put to a halt.

UNEP FI can play a key role in magnifying achievements made to a wider group of financial institutions. It can also promote specific target driven and transparent dialogue between NGOs and the financial sector. However, this case has also shown that, ultimately, real change depends on the willingness of individual financial institutions to learn from and remain in transparent dialogue with civil society if investing in sustainable development is the final goal.

The authors were closely involved in this process, working mostly but not exclusively under contract from various non-governmental organisations (NGOs).

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<sup>1</sup> About half this area was believed to be actually forest covered

<sup>2</sup> Wakker, E. and J.W. van Gelder 2000. "Funding Forest Destruction: The Involvement of Dutch Banks in the Financing of Oil Palm Companies in Indonesia". AIDEnvironment, Profundo and Telapak Indonesia. Downloadable from: [www.focusonfinance.org](http://www.focusonfinance.org)

<sup>3</sup> Wakker, E. 2001. PT Matrasawit: relations between ING, Rabobank and ABN-Amro and forest destruction and poverty in East Kalimantan, Indonesia. A PT SMART Corporation case study. AIDEnvironment.

<sup>4</sup> Each bank has committed to incorporate these criteria in their due diligence procedures, although the precise formulation and scope varies for each bank.

<sup>5</sup> Good Wood, Good Business, A practical, industry-oriented guide to excluding illegal & other unwanted wood from your supply chain. Tropical Forest Trust 2003.

# Local Business for Global Biodiversity Conservation: Improving the Design of Small Business Development Strategies in Biodiversity Projects

August 2003, UNDP and GEF

Available at:

[http://www.undp.org/gef/undp-gef\\_publications/publications/localbus\\_globalbdconserv.pdf](http://www.undp.org/gef/undp-gef_publications/publications/localbus_globalbdconserv.pdf)

## Introduction

UNDP, with financial support from GEF, has one of the largest biodiversity conservation programmes in the world. The programme aims to help countries conserve globally important biodiversity while promoting sustainable human development and alleviating poverty. The majority of its projects seek to achieve this by one or more of the following:

- improving the extent and effectiveness of protected areas;
- maintaining biodiversity in the production landscape (e.g. in agriculture, livestock, forestry, fisheries systems); and
- improving the enabling environment for conservation.

Key strategies in many of these projects are to improve local livelihoods in order to relieve pressures on biodiversity, or to enhance the local economic value of biodiversity so that communities have positive incentives to conserve and sustainably use it. The development of small, local businesses can be an important tool in both of these strategies.

UNDP has prepared this guidebook to help improve the design of small business development strategies within biodiversity conservation projects in order to increase their long-term impacts on conservation and development. Specifically the guidebook will help practitioners to:

- assess and demonstrate the role of small business development in biodiversity conservation;
- determine if a small business could be socially, economically and environmentally viable and sustainable; and
- incorporate issues into project or strategy design that are important to small business development.

## The Role of Small Business in Biodiversity Conservation

Small businesses are a common form of employment and a means of generating income for the world's rural poor who have limited opportunities to engage in regular well-paid off-farm employment. Local conservation strategies therefore often support small business development for communities living in and around conservation areas in the expectation that they can change the economic behaviour of the communities to reduce their threats to biodiversity.

The specific goal of business development is to promote long-term conservation through either:

- the development of alternative activities for labour and capital that divert investment away from activities that negatively affect biodiversity; or
- the modification of systems of production that use biodiversity, both consumptively and non-consumptively, so that the biodiversity resources will be managed in a sustainable manner rather than being depleted to non-renewable levels and exhaustion.

Different types of businesses promote different relationships between communities and their natural resources. This guidebook focuses on the development of small businesses that develop products or services with a direct link and benefit to local natural resources and biodiversity. These include the following sectors: tourism, wild products, agroforestry commodities, sustainable agriculture and livestock.

**Tourism** can increase the value of the natural resource by bringing in revenue streams from visitors interested in viewing or otherwise experiencing it. If local people are engaged and receive a sufficient portion of the revenue, they may have a greater incentive to manage and protect the natural resource over the long term.

**Wild products**, when suitably valued, can create an economic incentive for local communities to not degrade or convert the habitat, in order to allow sustained harvesting of the wild resource.

**Agroforestry products**, which come from the integration of trees on farms, can maintain species, forest canopy and habitat within productive landscapes, and can buffer protected areas and maintain ecological corridors between protected areas.

**Sustainable agriculture and livestock production** can be important in buffer zones to reduce rates of encroachment into protected areas and maintain resources and habitat for biodiversity within the production landscape.

#### Challenges to Developing Small Business

Small businesses are difficult to set up and run profitably. Working with poor and remote communities to develop viable and sustainable small businesses is particularly challenging, and doing it in a way that secures significant conservation impacts from such business development is even more difficult. Conservation planners need to recognize that businesses will operate within an unpredictable national, and often global, economy and a highly demanding and competitive marketplace.

Furthermore, most small businesses to be supported by biodiversity conservation projects will be located in remote areas that often lack infrastructure, local markets, skilled labour and access to credit and saving mechanisms. Hence, linking local production and community skills to the commercial market place is complex and requires a different set of skills and analysis than for natural resource management.

Although biodiversity-related small businesses are often proposed as tools for ensuring the sustainability of conservation interventions, evidence of this occurring is limited. The ability of small businesses to assist in delivering conservation outcomes is dependent on many variables and assumptions and thus there are many associated risks. Many case studies show that due to limited market opportunities small businesses often benefit an insufficient portion of resource users to have a significant impact on reducing threats to biodiversity.

Small business development can also have adverse effects on biodiversity if not well managed. Businesses directly dependent on biodiversity can overexploit the resource. Similarly, increased wealth can increase the ability to exploit natural resources. As a result, past attempts to develop small businesses as tools for conservation have met with mixed results.

Projects that consider including small business development interventions should therefore approach this subject very carefully and develop strategies based on the results of careful analysis. This guidebook is intended to assist in undertaking such analysis.

#### **Organization of the Guidebook**

The guidebook is divided into two main sections. **Section A** highlights key issues to consider when designing a strategy to develop small businesses in order to promote conservation. The Section is divided into four assessments: a conservation assessment, a sustainable livelihoods assessment, an economic assessment and an environmental assessment.

Each assessment differs in its role and guides project developers in collecting distinct but complementary sets of data. Each assessment identifies key issues, provides country case studies, and gives guidance for gathering and analysing data. A project developer should undertake these assessments in close collaboration with key stakeholders. Only if both the conservation and sustainable livelihoods assessments identify a critical role for business development should projects include such activities and the project developer continue with the economic and environmental assessments. The combined assessments will ultimately determine whether and how a business development strategy should be pursued.

The **conservation assessment** will help determine the need for and role of small business development in biodiversity conservation. It guides the reader through the challenges and key issues to consider in trying to assess and demonstrate the conservation impact from business development through changing local resource use. The assessment focuses on breaking down assumptions often made about impacts from business and employment opportunities and identifies risks and key issues associated with using business development as a tool for biodiversity conservation.

The **sustainable livelihoods assessment** will help determine how a business would fit into the social fabric of a local community as it pursues its livelihood needs. A livelihoods assessment will avoid preconceptions about what local communities seek and how they are most likely to achieve their goals. Specifically, the livelihoods assessment will help identify key stakeholders (resource users and entrepreneurs) and their history and relationship with the natural resource base, identify relevant macroeconomic and political factors, identify potential business opportunities, and help gain local ownership of any future business operations.

The **economic assessment** will help determine the economic and commercial viability of a potential small business. This assessment analyses the most suitable types of products and services to develop. The assessment guides the reader through a market analysis, cost and revenue projections, and a skills capacity assessment.

The **environmental assessment** will help determine whether a business could negatively impact its environment and provides guidance on how to manage potential impacts. This is different from the conservation assessment as it focuses on the sustainability of specific resources during the operation of a business instead of the links between business and conservation potential. This assessment is to determine the carrying capacity of the natural resources and focuses on the implications of resource replenishment rates, waste generation, energy and water requirements and supply.

**Section B** provides **guidance notes** for the development of the most commonly proposed types of businesses — ecotourism and non-timber forest products (NTFPs). It also provides a **case study** to show how a UNDP-GEF-supported project assessed, designed and implemented strategies to develop small community based ecotourism businesses.

The **Annexes** provide references to further selected guidance resources as well as all references cited in the text.

# Managing Biodiversity Correctly – Efficient Portfolio Management as an Effective Way of Protecting Species

Dr. Frank Figge, Center for Sustainability Management

Excerpts from a report prepared for GerlingVersicherungs-Beteiligungs AG. The full document is available at <http://www.sustainablevalue.com/biodiversity.pdf>

## Preface

The conservation of biodiversity cannot be undertaken as an accumulation of the protection of species and ecosystems. It is necessary instead to adopt a holistic approach, as expressed in the concept of sustainable development. Long-term considerations and future expectations represent the basis on which decisions are taken, both by portfolio managers and by biodiversity managers. A problem facing the biodiversity manager is that there may not yet be any “value” or benefit specifically visible to him when he comes to make decisions. The potential should nevertheless not be underestimated. A large part of modern pharmacy is already based on components discovered in the animals and plants of the rainforests. The need for efficient management of natural diversity of species is therefore already entirely evident today.

## Biodiversity: A Societal Asset

Human economic activity would be impossible without the natural environment. The natural environment therefore fulfills all the conditions to be regarded from the point of view of economic science as an “asset”. An asset is the *stock* whose value is deduced from a *future flow of benefit*. In so far as the natural environment, for example in the form of agricultural yields, as a supplier of natural remedies, but also for example as a tourist destination supplies a benefit in the future, it qualifies as an asset.

It is obviously difficult to make a comprehensive estimation of the value of biodiversity. This is due to biodiversity at the same time having a fundamental and complex character. The annual market value alone of the products derived from genetic resources is estimated at between 500 and 800 billion US dollars. A study of the whole ecosystem of the world estimates the annual benefit at between 16 and 64 trillion US dollars. Biodiversity is without doubt a significant asset.

## Management of Biodiversity – Learning From Portfolio Managers

Portfolio managers combine various securities into a portfolio. In doing so, they make use of the fundamental finding of portfolio theory that returns are additive whereas risks diversify. They consequently look not at the development of individual shares but at the development of the complete portfolio. Biodiversity represents a natural portfolio of a large number of species, genes and ecosystems. Here too, interest must be focused on the whole portfolio.

There has been discussion for many years in the economic sciences on how portfolios are to be put together. It is of particular interest for the management of biodiversity that consequences of the management of biodiversity can be deduced from the practice of the management of stock portfolios. These consequences, formulated here in the form of rules, are in some cases in clear contradiction with an approach which relates to individual species, genes or ecosystems and with the way in which biodiversity issues are discussed at present.

1<sup>st</sup> rule: Every decision must weigh return against risk. Additional risk must be offset by additional return.

2<sup>nd</sup> rule: Risks can be partly diversified away.

3<sup>rd</sup> rule: The benefit does not have to exceed the costs.

4<sup>th</sup> rule: A comparable or better return-risk ratio can always be created by the combining of various elements than by an individual element of this portfolio.

5<sup>th</sup> rule: High-return portfolios also consist of low-return elements.

6<sup>th</sup> rule: High portfolio returns may be a pointer to higher risks.

7<sup>th</sup> rule: Diversifiable risks are irrelevant to the valuation. They have no effect on the discount rate.

8<sup>th</sup> rule: It is not just the number of species, genes, and ecosystems, but their weighting too that is of interest.

9<sup>th</sup> rule: Efficient asset allocation can be ensured by class formation.