INCREASING REVENUES FOR PROTECTED AREAS:
A WEALTH OF FINANCING OPTIONS

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Introduction

This paper aims at giving an overview of traditional and new financing mechanisms in support of protected areas.

The web of life is breaking down: our world is facing biodiversity loss at unprecedented rates. Human impacts are causing the acceleration of species loss, at rates of several hundreds up to 1000 times the natural rate of species extinction, depending on the type of organisms. Habitat degradation and loss, introduction of invasive species, pollution, and overexploitation of resources are factors that determine the process of mass extinction. Protected areas obviously play a critical role in biodiversity conservation. Article 8 of the Convention on Biological Diversity (CBD) obliges Parties to establish a system of protected areas to conserve biodiversity, to develop guidelines for protected areas management and to promote appropriate development adjacent to protected areas. Besides agreeing on this global mandate for protected areas, through Article 8m of the CBD Parties committed themselves to cooperate in providing financial support for protected area systems: 'Each contracting party…. shall cooperate in providing financial and other support for in-situ conservation… …particularly to developing countries'.

Current revenues for maintaining existing protected areas and the creation of new ones are insufficient. Annually, approximately US$7 billion is spent on the creation and maintenance of protected areas around the world (Balmford, 2003). The amount required to adequately protect biodiversity is estimated to be about five times higher. The flow of revenues from traditional and new financing mechanisms should clearly be increased to mitigate the financing deficit for protected areas. As part of the solution, innovative financing mechanisms are being developed aimed at increasing the global revenues for protected areas, thus capturing the multiple values of ecosystem goods and services provided by protected areas to mankind.

This scoping paper focuses on an overview of financing mechanisms in support of the creation and maintenance of protected areas comprising terrestrial ecosystems. For financing options in support of marine protected areas, the reader is referred to Spergel & Moye (2004). The term 'protected area' refers in this paper to all IUCN protected area categories, including extractive reserves. The financing mechanisms are classified into six different categories, according to the type of institutional arrangement, and the dominant actor or group of actors.

1. Multilateral and bilateral mechanisms

- ***Multilateral banks***

Regional and development banks mostly support governments through loans and have poverty alleviation as their most important mission. The allocation of financial assistance of multilateral development banks to biodiversity conservation is however increasing. On one hand, development banks may provide loans and grants for the establishment and maintenance of protected areas as part of a national conservation programme. On the other hand, conservation may be financed as a way of compensating for negative impacts of infrastructure development (IUCN, 2000).

The World Bank, the African Development Bank and the Asian Development Bank require backing of proposed projects by government institutions. The Inter-American Development Bank also has a modality to finance NGOs directly.

- ***Global Environment Facility (GEF)***

The Global Environment Facility is an international financial mechanism launched in 1991, which counts with the participation of 173 member governments. GEF strives after a global environmental agenda and provides funding to projects that address threats to the global environment in four focal areas: biodiversity loss, climate change, ozone depletion, and degradation of international waters. GEF is the designated financial mechanism of the CBD while The World Bank, UNDP and UNEP act as Implementing Agencies of its operations. In the year 2000, the Biodiversity focal area of GEF allocated over US$1 billion in grants to 345 biodiversity projects. An additional US$1.7 billion in co-financing was raised to support these projects (IUCN, 2000).

- ***Bilateral development assistance agencies***

Bilateral donors still provide one of the largest contributions to funding of biodiversity conservation. In the new sector approach embraced by many donor countries, environment is often not anymore a top priority and environmental issues are included or "mainstreamed" in all development activities. Bilateral assistance tends to be more efficient and less bureaucratic in comparison multilateral support and may be subject to fewer restrictions. Many development assistance agencies have the obligation to invest in biodiversity conservation, through ratification of the CBD by their government. However, poverty alleviation is still a primary goal in the programmes of many bilateral agencies and most of them restrict assistance to a set of target countries. Important contributions to nature conservation come from bilateral development assistance agencies such as CIDA (Canada), DANIDA (Denmark), DFID (United Kingdom), DGIS (The Netherlands), GTZ (Germany), JICA (Japan), NORAD (Norway), SIDA (Sweden), SDC (Switzerland), USAID (USA) and the European Commission.

- ***Debt-for-nature swaps***

Debt-for-nature swaps create a link between external debt of a country and financing of conservation. An amount of debt is exchanged by the creditor for a financial contribution to conservation by the debtor country, in a voluntary transaction. There are two types of debt-for-nature-swaps: commercial and bilateral debt swaps (Spergel, 2004a).

1. Commercial debt-for-nature swaps involve debt owned by developing countries to international commercial banks. Major conservation organisations often buy the debts from creditors at considerable discounts and reach a subsequent agreement on the amount of money that the debtor government will spend on new conservation programs in exchange for the cancellation of the debt.
2. Bilateral debt reduction programs, involving debt owed to other governments. The creditor government agrees to cancel debt in exchange for financing of conservation by the debtor country in local currency.

Major conservation NGOs such as Conservation International, The Nature Conservancy and WWF have been involved in debt swaps, either as facilitators or as parties buying and cancelling debt in the case of commercial debt swaps. Other actors frequently involved are ministries of finance, ministries of foreign affairs, bilateral assistance agencies, national parks agencies, and local conservation organisations as beneficiaries. The revenues generated by debt-for-nature swaps are often administered by national and local conservation trust funds (see § 6). Debt-for-nature swaps have resulted in the channelling of nearly a billion dollars to nature conservation since the first experience in 1987 (IUCN, 2000). Recent examples are debt-for-nature swaps arranged in Peru for about US$11 million, in Belize for US$10.7 million, and a debt swap currently being negotiated of approximately US$10 million in Panama (TNC, 2004).

2. State subsidies, taxes, user fees, and pollution fines

- ***Direct allocations from government budgets***

Protected areas may generate substantial benefits to the national economy. In Ecuador, each year about 80,000 foreign tourists spend more than $100 million in the country on overall holiday expenses (Spergel, 2004). In Costa Rica, nature based tourism was for a couple of years the most important source of foreign exchange. In Kenya, nature-based tourism represents the second largest source of foreign exchange earnings.

The prospect of increased revenues from tourism, and other potential economic benefits from protected areas (e.g. as derived from watershed protection or carbon sequestration, bioprospecting), may motivate governments to increase the amount of money spent on protected areas. Only if biodiversity is properly protected and sufficient money is invested into the development of tourism infrastructure and maintenance of roads, nature-based tourism can lead to sustainable economic growth and the creation of jobs in developing countries. Another important condition to the development of nature-based tourism is that the political climate of the country should be relatively stable. However, in spite of the sketched potential of increased returns, worldwide there is a trend of decreasing government expenditure on protected areas.

In Colombia, indigenous territories or *resguardos* were established by Constitutional Law. The government of Colombia allocates 'territorial transfers' from the central State budget directly to the indigenous institutions that manage the *resguardos*, as if they were municipalities.

Indigenous territories cover approximately 25% of the national territory, while the indigenous population contributes less than 2% to the total national population. Part of the financial resources is used to support the design and implementation of management plans for the *resguardos*, involving sustainable resource extraction and conservation. From 1994 to 2001, the *resguardos* received a total amount of US$ 23 million, which corresponds to a payment of US$ 0,82 per ha over this period (Van der Hammen, 2003).

Also in Brazil, indigenous territories cover more than 20% of the Amazon (against 4% of the land protected in reserves and parks), and the number of extractive reserves recognised by the State is growing. Recently, Greenpeace assisted in the process of declaration of two extractive reserves including more than 2 million ha in the Amazon state of Para, which include recognition of indigenous rights over the land concerned. Government subsidies will be transferred only to entities with legal rights to these extractive reserves.

- ***Taxes, levies, surcharges and tax incentives***

Taxes, levies and charges are means of creating revenues from goods and services derived from protected areas, which are not directly traded at markets. Taxation schemes work according to two principles: 'beneficiary pays' or 'polluter pays'.

Charging to private companies benefiting from hydrological services can generate revenues (Chomitz et al., 1998). In Colombia, a law requires that 1% of all investments into water projects should be paid for watershed protection. Hydroelectric plants are required by the same law to pay 6% of their gross revenues to regional and municipal governments as a contribution to watershed conservation and sanitation.

An example of a tax according to the 'polluter pays' principle is the tax on fossil fuels charged by the government of Costa Rica. Part of this tax is allocated to the National Forestry Fund FONAFIFO. Payments on a per hectare basis are made from this fund to local landowners and NGOs as a compensation for forest conservation and reforestation activities. Indigenous organisations also benefit from these hectare-based payments. It is one of the few examples of government taxes through which carbon emissions are compensated by conservation payments.

Charges and surcharges on the basis of forestry activities and timber imports can be used to obtain extra revenues from the forestry sector. Indonesia could build up a reserve of more than US$700 million in its National Reforestation Fund from a 32% surcharge on forest fees (Richards, 1999). A study of the Netherlands Economic Institute indicated that a 1-3% import surcharge on tropical timber imports into the EU, Japan and the USA would raise US$31-93 million (Richards, 1999).

Some countries impose surcharges on property taxes (e.g. many states in the USA), or on real estate transfer taxes (e.g. France).

Tax incentives can be used to stimulate desirable behaviour, and encourage users to move towards more sustainable land management (Richards, 1999). Tree planting, the sale of land for conservation purposes and the use of alternatives for forest products can thus be promoted. The link between most tax incentives and results in terms of increased protected areas funding is weak, however.

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- ***User fees***

The most important user fees in relation to protected areas are entry fees. In exceptional cases, entry fees generate sufficient revenues to pay for the costs of park maintenance.

An example is provided by Botswana, where the national park entry fees for foreigners were increased by 900% in 1989. In combination with the promotion of high-cost, luxury tourism, a drastic increase in total revenues was the result, which made government subsidies to game reserves and national parks superfluous (Barnes, 1998). Also in Ecuador, approximately 80,000 foreign visitors per year pay an entry fee of US$100 to visit the Galápagos Islands National Park. Large part of this entry fee is reinvested into the park. Experiences in different parts of the world show that foreign visitors are often willing to pay higher entry fees than currently is the case. However, only a small number of protected areas in the world that are internationally well-known for the presence of unique wildlife species or other natural assets, are expected to be able to raise enough money through user fees as the only source of income.

Other user fees represent a wide range of fees on diverse activities, such as admission fees for special attractions, parking, camping, picknicking, charging for fishing and diving, yachting or cruise-ship visit permits, and to concessionaires who operate tourist facilities (IUCN, 2000).

Fees and royalties paid for resource extraction such as timber, oil, mining and fishing also have an important potential, on the basis of the principle of compensating for extracting a resource by conserving another. Spergel (2004a) illustrates this principle with two examples of trust funds in the USA. The U.S. Land and Water Conservation Fund benefits from fees paid for offshore oil and gas leases. Over a period of four decades, this fund has provided almost US$9 billion for the acquisition of land for protected areas and has given more than 37,000 grants for conservation projects. The Natural Resources Trust Fund of the state of Michigan is financed by royalties on extraction of minerals, oil and gas and has granted more than US$300 million to state parks over the past 15 years.

Some countries charge right-of-way fees to companies for oil and gas pipelines, electric power transmission lines, and for telecommunications infrastructure. These payments are in the order of millions of dollars (Spergel, 2004a). In Brazil for example, the national environmental agency is authorized to collect 0,5% of construction and maintenance costs of any pipeline, transmission line or broadcasting tower located in a national park. This environmental compensation fee must be reinvested into the national park concerned.

Considerable revenues can sometimes be drawn from pollution fines and judicial damage awards. Damage claims related to oil spills in Alaska for example, have resulted into the payment of millions of dollars to conservation areas.

Airport passenger fees are used in a few countries as a way to generate revenues for conservation. In Belize, a conservation fee is collected at the airport from foreign passengers, together with the airport departure tax.

Limitations of subsidies, taxes, user fees, and pollution fines: The volume of state budget allocations for protected areas has been steadily decreasing. User fees are not always reinvested into protected areas.
Advantages: Entry fees for foreign visitors and other user fees can in many cases be increased. A larger share of pollution fines should be directed to nature conservation. There is a clear potential for increasing revenues for conservation from resource extraction fees, oil spill fines and other pollution fines, taxes on fossil fuels and compensation payments for gas and oil pipelines crossing protected areas.

3. Grants and donations from the civil society

- ***Private foundations***

Foundations are among the oldest means to raise revenues for nature conservation. Wealthy individuals or groups of citizens may create a foundation to support a charitable cause. Some foundations aim at the protection of biodiversity or nature conservation next to other goals. In the USA, there are various examples of foundations established by wealthy individuals that contribute millions of dollars each year to biodiversity conservation in developing countries: the Ford, MacArthur, Moore, Mott, Packard, Rockefeller, and Turner Foundations. Recently, in November 2004, the Gordon and Betty Moore Foundation announced a donation of US$8 million to The Nature Conservancy in support of the conservation of the Osa Peninsula region in Costa Rica, including two national parks and a corridor zone that connects them.

- ***Conservation organisations and environmental NGO's***

A well-established source of funding for nature conservation is the provision of financial resources by NGOs. Protected areas are often supported by one or several national NGOs. Some of the larger, international NGOs finance conservation activities in other countries than where the NGO is based. Well-known examples of NGOs with significant funds for international conservation activities are Conservation International, The Nature Conservancy and WWF. NGOs derive their financial resources from membership of private persons, and from donations of the public and private sector. Conservation organisations and other environmental NGOs often act as an intermediary to channel the financial flows of other donors to specified activities and projects.

One of the oldest conservation NGOs is Flora and Fauna International (FFI). It was created in 1903 and provides support to conservation throughout the world. Their efforts led to the creation of the Kruger and Serengeti National Parks in Africa. There are several funds related to FFI, mainly in support of specific endangered species. The Arcadia Fund, created in 1998, supports the establishment of protected areas through direct land purchase (FFI, 2004).

A relatively new and cheap option with a potential that deserves further exploration, is the raising of revenues through Internet. An example of such a mechanism, which involves both the private sector and the general public, is The Rainforest Site.

Created in 2000 and owned by a non-profit organisation, it has the goal to preserve rainforests worldwide. Sponsors pay a small fee for each visitor of the site who clicks the button "Save Our Rainforests", clicks on their ad, or signs up; or they pay a percentage of any purchase. The sponsors make these donations to improve their public relations and as a form of advertising. Until 2002, The Rainforest Site generated funds to purchase and preserve an estimated 4725 ha of land.

In 2002 and 2003, The Nature Conservancy issued bonds on the financial markets worth US$ 325 million (The Katoomba Group, 2004). This is an innovative mechanism that helps the organization to spend 5% more on conservation activities. The conservation bonds will be paid over time by using future donations and contributions, and via the return on investments of the NGO's endowment capital.

- ***Individual donations***

Individuals may make donations to NGOs to support conservation activities. Charitable donations can also be done in the form of planned giving, through a person's will or by insurance and annuities mechanisms. In workplace donation schemes, individual employees have the option to donate a deduction of their pre-tax salary to charity causes, including environmental charity causes. A condition to workplace donation schemes is the existence of a national tax law that permits such systems.

Special forms of individual donations that provide a more constant stream of revenues are site memberships, "friends" schemes, and adoption programmes (IUCN, 2000). Membership programmes of protected areas imply yearly donations by individuals to a specific protected area, while the donors might not actually visit the area. In the case of the similar 'friends' schemes, the donors may receive certain benefits while visiting the park. An adoption programme allows donors to adopt part of a protected area. The donor pays a certain amount of money and receives a certificate, which proves the adoption of an acre or hectare. The 'Adopt-an-acre' programme of The Nature Conservancy was established in 1951 and protects approximately 47 million ha (116 million acres) around the world by selling 'deeds' to an acre or hectare of protected area. In 2002, the total support to the programme was US$ 923 million, of which 42% resulted from dues and contributions (The Nature Conservancy, 2004).

Cause-related marketing is the sale of items (primarily intangibles) whose main value lies in the purchaser's knowledge of having helped conservation (IUCN, 2000). For example, visitors to China have the option to receive a panda stamp in their passports by paying US$1 extra, and each dollar is used to finance panda conservation (Pearce & Pearce, 2001).

- ***Lotteries***

There are many examples of lotteries that raise money for charity purposes and other societal goals, including nature conservation. The Dutch Postcode Lottery has allocated a substantial part of its profits to biodiversity conservation.

This includes donations equivalent to almost $ 150 million to WWF Netherlands for biodiversity projects in different parts of the world (Spergel, 2004a). Governments sometimes sponsor lotteries that channel part of their net revenues to conservation.

Limitations: funding obtained from individual donations, charitable foundations and lotteries is often not suitable in providing a constant source of income for maintenance of protected areas, and should be regarded only as additional or complementary sources of funding.
Advantages: NGOs have developed certain mechanisms such as adoption programmes, memberships and 'friends' schemes that are successful in providing a more stable flow of income for protected areas.

4. Property rights approaches

- ***Purchases or donations of land***

Governments and NGOs may purchase land for conservation, whereas individuals may donate land for this purpose. Purchase of land in other countries is less common. The Netherlands Committee for IUCN manages a Small Grants Fund for the Purchase of Nature, in support of the acquisition by local NGOs of relatively small nature areas that are at risk (Blom et al., 2002). An example of strategic purchase of nature is the acquisition of an area that links up two nature reserves, thereby increasing the total conservation value.

- ***Conservation easements***

Conservation easements have a history of about 40 years and were first applied in the USA and Canada. Conservation easements are legal agreements, in which landowners agree to permanently restrict (further) development of their land, thus contributing to conservation. In turn for these restrictions to development rights, the landowners concerned pay lower taxes or receive a tax deduction. Conservation easements are also legally binding to all future owners of the property.
Limitations: Conservation easements require advanced legal provisions. They tend to work well in situations where land tenure issues are resolved and also in the more prosperous regions and countries, where tax deduction in favour of nature conservation can be afforded.
Advantages: Conservation easements are less costly in comparison to acquisition of land. They can also be used in a transition phase towards the creation of a park or reserve, as an option to gain time in the face of threatening destructive land use practices. Restrictions to development rights are transferred to next generations and new buyers.

- ***Conservation concessions***

Under a conservation concession agreement, governments or local resource users agree to protect natural ecosystems in change for a steady stream of structured compensation (Rice, 2002). Payments may reflect costs of government administration and enforcement, decreased revenue from taxes, lost employment, and the opportunity costs of foregoing natural resource exploitation.

The concept of conservation concessions has been developed at the Center for Applied Biodiversity Science at Conservation International and is being implemented in a range of different situations. The first concessions were agreed with governments, for example in 2001 a conservation concession encompassing 135,000 ha was established in the Peruvian Amazon in the Los Amigos River watershed. Previous to this agreement, the government of Peru included a provision in the new Forestry Law that legally permits conservation concessions as a competitive land use. Conservation International is currently exploring opportunities to develop conservation concession contracts with indigenous groups and local communities.

Limitations: A conservation concession agreement has a limited term, typically ranging from 5 to 10 years. Long-term conservation is therefore not guaranteed, as this depends on the renegotiation of the contract. There are as yet no well-documented cases of local communities who benefit from payments derived from conservation concessions.
Advantages: The limited term of conservation concessions makes it an attractive option to governments and local resource users. It can be used as an option to gain time in the face of destructive land use practices, which is clearly illustrated by the case of buying timber concessions from logging companies. Conservation concessions can also be targeted to sensitive species, by providing payments, employment or support for community projects to local people if they forego hunting or harvesting determined species.

5. Private sector

- ***Corporate donations to foundations and NGO's***

In spite of the concern expressed by large corporations for saving global biodiversity, the amount of corporate donations to biodiversity conservation is small: less than 3% of the current total annual spending on protected areas (Spergel, 2004b). In few cases, corporations have voluntarily donated more than US$1 million in support of protected areas of biodiversity conservation.

- ***Voluntary contributions to environmental funds***

Private companies may also make voluntary payments for hydrological services. In Costa Rica, two types of voluntary agreements have developed. On one hand, private agreements have been established directly with NGOs. An example is the agreement since 1998 between the hydro-electric power company La Esperanza and the conservation NGO Asociación Conservacionista Monteverde, where the company pays 10 US$/ha per year to the NGO for hydrological services provided by forests of the Monteverde nature reserve. On the other hand, the national forestry fund FONAFIFO established agreements with hydro-electric power companies and other major water consumers. The private companies make payments on a per hectare basis to FONAFIFO, who in turn provides financial compensation for forest conservation to local forest owners and NGOs. The payments range from 10 US$/ha up to 47 US$/ha per year for the more recent agreements, while the period of commitment of the agreements varies from 5 to 10 years.

There is another example from Costa Rica, which is not based on an institutional agreement with FONAFIFO or the Ministry of Environment. In 2000, the drinking water company of Heredia established a hydrological fee in three minor watersheds in the Central Valley of Costa Rica. The company collects a small fee on consumed water, to be reinvested in forest conservation and reforestation within the same region.

In the Cauca Valley of Colombia, major water users united in private entities of Associations of Water Users, decided to pay voluntarily an additional fee to the tax paid to the Regional Development Co-operation (Echavarría, 2000; Perrot-Maître & Davis, 2001). An important rationale for this development was the fact that the agro-industrial water users in the Cauca valley had been facing continuous water shortages. The additional fee is collected at (sub-)watershed level and is reinvested into watershed management activities in the same area. In 2000, there were 12 Associations of Water Users, covering an area of more than 1 million hectares and benefiting approximately 97.000 families in upper watersheds (Echavarría, 2000).

- ***Direct financing of reforestation and conservation***

Private companies may have different reasons to invest money directly into reforestation and conservation activities. An important reason is the positive effect this may have in terms of an improved public image. The expectation of economic benefits derived from environmental services provided by forests and other ecosystems, represents another important motivation.

An example of payments in support of the provision of water services is provided by the Philippines. In 1992, the National Power Corporation (NPC) funded the development of 1,000 ha of tree farms in the Lake Lanao-Aguas watershed. The hydro-electric power sector contributed US$ 1,1 million to this project (Mero, 2002). The municipal water company of Cuenca in Ecuador has invested revenues from water into the purchase of upstream nature areas for strict conservation purposes (Hofstede & Alban, 2002).

Private companies may also voluntarily finance carbon sequestration projects, in order to compensate for carbon emissions they produce directly or indirectly. In 1998, the French car manufacturer Peugeot-Renault announced to invest about US$10 million in a major carbon sink project in northwest Mato Grosso. In cooperation with the NGO Pro-Natura and the French government institution Office National des Forêts, 5000 ha of degraded pasture are being reforested (May, 2002). In The Netherlands, major energy providers joined efforts to finance afforestation projects in developing countries, which is implemented through the foundation FACE (Forests against Carbon Emission). FACE also acts as implementing institution for Trees for Travel, who offers air travellers the opportunity to contribute funds for tree planting to counteract the carbon emissions as a result of their flight.

- ***For-profit investments linked to conservation***

Examples of for-profit investments linked to conservation include eco-tourism enterprises, marketing of Non-Timber Forest Products and other products of sustainable resource extraction accompanied by eco-labelling and product certification, and bio-prospecting.

Investments into bio-prospecting have created relatively scarce revenues worldwide, despite high initial expectations. In 1982, the pharmaceutical company Merck & Co signed a pioneer agreement with the National Institute for Biodiversity INBio in Costa Rica, obtaining the right to collect and study samples of native plants, insects and micro-organisms. The company tests the samples for possible medicinal value. It provided US$1 million to INBio, and INBio will receive a share of any royalties that may result from successful product development. Of the revenues created, 30% flows to the national protected areas system.

For-profit investments linked to conservation may be promoted by so-called Biodiversity Enterprise Funds (BEFs). BEFs are highly flexible investment funds that provide long-term capital and advice to small and medium-scale enterprises engaged in conservation-compatible development. These enterprises often operate in or around protected areas and buffer zones in developing countries, and are engaged in e.g. eco-tourism activities or marketing of Non-Timber Forest Products. Most BEFs include between four and seven key actors: local communities, local businesses, investors, financial catalysts, local NGOs, host government agencies, and/or partner enterprise funds (IUCN, 2000).

- ***Levies on financial transactions***

In the financial sector, levies can be raised from international financial transfers, or on credit card transactions. A problem with global levies is the coordination of the mechanism and the institutional framework. Who decides on the destination of the financial resources generated? National levies are easier to implement, since they depend on the government of a single country and one governmental organisation can be in charge of the enforcement, collection and allocation of the created revenues (IUCN, 2000).

An example of levies on credit card transactions is provided by Visa, which enables its clients to choose a WWF credit card instead of a regular one. In the USA, Panda Visa cards are issued, of which 0,55% of all expenses made with the card, goes to WWF. This has raised over US$ 7.5 million for WWF. The British bank MBNA has worked with WWF Visa cards since 1995. On opening an account and for each year the card remains open and active, the bank donates £1 to WWF. Additionally, for every £100 spent using the card, WWF receives a supplementary 30 pence donation. This programme has generated over £2 million for WWF (Charity credit cards, 2004; WWF Visa Card, 2004).

Limitations: To date, voluntary payments by private companies for environmental services have had to date a limited impact on protected areas financing.

Advantages: Voluntary payments of the private sector for environmental services have a clear potential to support reforestation of buffer zones around protected areas, and in ecological corridors connecting them. The same holds true for the promotion of conservation-compatible development in buffer zones and ecological corridors by nature-based enterprises.

6. Multi-actor institutional arrangements

- ***Conservation trust funds, national environmental funds***

Since 1990, national environmental funds including conservation trust funds have been established in more than 30 countries. Within a decade, their combined assets increased to more than US$500 million (IUCN, 2000). The main goal of creating a conservation trust fund is to provide long-term funding to protected areas, or small grants to NGOs for conservation projects. A trust fund is money or other property that is set aside to be used only for specified purposes, and which is managed and controlled by an independent board of directors (Spergel, 2004a). Trust funds in the strict sense are restricted to common-law countries such as the United Kingdom and the USA. However, the term *trust fund* is usually applied in the broad sense, including equivalent institutions of civil-law countries: *fideicomisos* (Latin America) and *foundations*. There are three types of conservation trust funds: endowment funds, sinking funds and revolving funds.

1. Endowment funds have a fixed amount of capital, which is invested. Only the revenues of capital investment are used to finance conservation activities. Endowment funds are the most common trust funds.
2. Sinking funds use part of their capital to finance conservation in addition to capital investment revenues. In this way, the capital of a sinking fund decreases gradually over time until it ceases to exist.
3. Revolving funds receive revenues from taxes or user fees and spend most or all of these revenues on conservation.

The endowment is often funded by contributions from a variety of different sources, such as debt-for-nature swaps, GEF grants, multilateral banks, bilateral donors, and grants from private foundations (e.g. the MacArthur Foundation). NGOs such as WWF, The Nature Conservancy and Conservation International have played an important role in assisting the design of conservation trust funds and providing capital. At the national level, recent examples include the Bolivia Protected Areas Fund FUNDESNAP ($46 million endowment), the Mama Graun Conservation Trust Fund for Papua New Guinea ($15 million endowment), and the Ecuador National Environmental Fund FAN, which was funded by several bilateral debt swaps and a GEF grant. An example of a trust fund network is RedLAC: the Latin American and Caribbean Environmental Funds Network. This network administers more than $150 million for conservation in 27 funds across Latin America and the Caribbean.

Limitations: Not all conservation trust funds have the specific aim of providing grants in support of protected areas, or their portfolio may include a wide range of other activities.

In view of the current tendency of an increasing amount of money that is being deposited in endowments of trust funds, it remains to be seen which part of the created revenues flows effectively into protected areas financing. Administrative costs may be high and rates of return on investment may be variable.
Advantages: Conservation trust funds are a decentralising mechanism that can be used to divide large international grants into many small grants that are paid over several decades or more. Conservation trust funds have the potential to provide sustained, long-term funding for protected areas (Spergel, 2004a).

- ***Water funds***

In Ecuador, the municipal water companies of Quito and Pimampiro created water funds by charging levies on drinking water (Echavarría & Granizo, 2000). In the case of Quito, the revenues of the water tax would have to be complemented by voluntary payments of major agricultural and industrial water consumers, and be invested into nature conservation activities in the upper watershed. In Pimampiro, an environmental NGO promoted the set-up of the municipal water fund, which results into direct payments to forest owners. International donors provided seed money to both water funds.

Recently, a project for the establishment of a water fund is being implemented in Sierra de las Minas, Guatemala. In this case, major downstream water consumers in the sectors of agriculture and industry will make payments to a water fund, which will be used partly to finance the maintenance of the Man and Biosphere Reserve of Sierra de las Minas.

Limitations: The level of payments for water services is in most cases not sufficient as to compensate fully for the opportunity costs in relation to dominant agricultural land uses. Therefore, water funds may not be sustainable from the economic point of view.
Advantages: Water funds have evolved from bottom-up societal processes and are the result of intensive interaction and consensus building among multiple actors. One could benefit from the existence of these institutions by supplying them with complementary payments for other environmental services provided by natural ecosystems in upper watersheds, such as carbon sequestration and biodiversity conservation.

- ***Carbon offset projects***

Private sector investments into carbon offset projects are not necessarily restricted to afforestation and reforestation activities agreed upon in the Clean Development Mechanism of the Kyoto Protocol. There are examples of partnerships between conservation NGOs and private companies aiming at the joint implementation of carbon offset projects with an important conservation component. One example is provided by a partnership of Conservation International and four major Brazilian companies named the Instituto BioAtlântica (IBio). IBio, together with The Nature Conservancy of Brazil and the Socio-Environmental Research Institute of Southern Bahia, has developed a Conservation Carbon project to restore and protect nearly 12,000 ha of the threatened Atlantic Forest. Other examples of Conservation Carbon projects that involve the participation of multiple actors are being implemented in the coastal rainforest of Ecuador and in the Sierra Madre Biological Corridor in the Philippines (The Center for Environmental Leadership in Business, 2004).

The Climate Change Initiative of The Nature Conservancy also has been undertaking model carbon offset project in several countries. The lessons learned from these projects are translated into best practices for adoption by the carbon credit market. An example of a model carbon offset project implemented in a protected area is the Noel Kempff Mercado National Park in Bolivia. In a partnership, the government of Bolivia, the Friends of Nature Foundation (FAN), The Nature Conservancy and three energy companies (American Electric Power, PacifiCorp and BP Amoco) jointly implement the US $11 million Noel Kempff Mercado Climate Action Project, which is the largest forest based carbon project in the world.

- ***Payments for Environmental Services programmes (PES)***

In Costa Rica, the legal framework endorses the concept of paying for environmental services provided by natural forests and plantations. The latest Forest Law supports payments to compensate for the environmental services provided by forests. The acknowledged forest environmental services are the regulation of hydrological cycles, scenic beauty, carbon sequestration, and biodiversity conservation. Through a program of Payment of Environmental Services, the National Forestry Finance Fund FONAFIFO pays private landowners and NGOs either for maintenance of primary forest, establishment of forestry plantations, or forest management. From 1997 to end of 2002, the Payments for Environmental Services program included 310,134 hectares (6 % of Costa Rican territory). Of these, 261,500 ha correspond to forest protection, 21,360 ha to forestry plantations and 27,274 ha to forest management.

On the basis of the experience in Costa Rica, international donors now support pilot projects of PES in several other countries in Central America. In Guatemala, a pilot programme of support to forest conservation activities (PPAFD) started in 2000, where landless farmers living at elevations above 1500 m will receive revenues of up to 55 US$/ha per year in a number of watersheds. Pilot projects of Payments for Hydrological Services started in Nicaragua, Honduras and El Salvador at municipal level in the framework of the PASOLAC programme (Pérez, 2003).

Recommendations for policy making

General issues

1. In the design and implementation of any financing mechanism, a clear definition of conservation goals, clear decision-making procedures, transparency of allocation of resources, and participation of relevant stakeholders including local communities, are crucial issues. This holds particularly true for those mechanisms that generate long-term revenues for protected areas.
2. In developing countries, financing mechanisms in support of biodiversity conservation should address poverty alleviation as much as possible, as poverty is one of the root causes of habitat loss and degradation. The rural poor living in and around protected areas should benefit from revenues derived from protected areas.
3. The definition and formalisation of property rights of local people should be included in the design of financing mechanisms (see also Verweij, 2002a).

4. There is no single solution or panacea to eliminating the global financing deficit in the budget for protected areas. A mix of complementary financing mechanisms should be applied to provide protected areas with a sustained stream of sufficient income. The composition of this mix may vary from one protected area (system) to the other, according to the specific assets of the protected areas and the way in which willingness to pay of stakeholders for derived goods and services can best be captured.
5. The choice of a proper scale level is crucial in determining the effectiveness of any financing mechanism. Funds aimed at the conservation of specific regions or specific protected areas may be associated to a higher willingness-to-pay of certain stakeholders for tangible conservation goals, in comparison to global or national level conservation funds.
6. Many current financing mechanisms are organised according to principles of input financing. Any financing mechanism implemented without being linked to an adequate conservation strategy, has a high chance of failing. As far as possible, conservation output should be defined in terms of specific goals, and the return on investment in terms of achieved conservation goals should be properly monitored and evaluated. Efficiency and effectiveness of conservation financing should receive more attention.
7. A larger share of bilateral development cooperation funds should be directed to nature conservation. To this purpose, biodiversity conservation goals should be included in the Poverty Reduction Strategy Papers of developing countries. In particular developed countries that ratified the CBD have a responsibility in sharing the costs of conservation with countries in the South. Developed countries should spend a fixed percentage of their GDP on supporting the green environmental agenda of developing countries, including money for nature conservation.
8. Perverse subsidies to the agricultural and forestry sectors should be redirected to financing in support of biodiversity conservation. These subsidies could also be used more specifically for conservation-compatible forestry activities and agriculture (e.g. agro-forestry) in buffer zones and ecological corridors connecting nature reserves and national parks.
9. The legal rights of indigenous peoples over their territories should be recognised and financial support should be provided to strengthen their institutions, and to design and implement management plans for sustainable resource use and conservation. The model implemented in Colombia of transfer payments from the State budget to the indigenous *resguardos* may serve as an example and could be extended to include payments for global environmental services derived from *resguardos*.
10. The development of new financing mechanisms involving private corporations requires further attention. To this purpose, private corporations should be called upon to accept their responsibility to share in the costs of biodiversity conservation by making substantial financial contributions to conservation trust funds for example. Furthermore, investments in businesses that contribute to biodiversity conservation should be facilitated.

Specific financing mechanisms

1. Conservation trust funds have a strong potential to provide sustained, long-term funding for protected areas. Conservation trust funds are a mechanism that can be used to divide large international grants into many small grants that are paid over several decades or more. They have proven to be effective in collecting large amounts of money from a variety of donors, including GEF, multilateral banks, bilateral development cooperation agencies, private foundations, and recently also private corporations.
2. A larger share of the revenues generated by bilateral debt reduction programmes, should be allocated to nature conservation.
3. Besides contributing to conservation, Payments for Environmental Services (PES) programmes have an important potential to address issues of poverty alleviation as well. This potential should be enhanced by incorporating goals of poverty alleviation more explicitly in these programmes. This in turn may help to decrease human pressure on protected areas and buffer zones.
4. Conservation concessions can be used as an option to gain time in the face of destructive land use practices, for example by buying timber concessions from logging companies. The period of operation of conservation concessions should be regarded as a transition phase, in which time-consuming participatory processes may take place aimed at the development a conservation strategy that is socially acceptable.
5. International regulation should be influenced as to include the recognition of mitigation of CO2 emissions through avoided deforestation in a new or existing implementation mechanism of the Kyoto Protocol. The next step would then be to make sure that newly created protected areas in global hotspots of biodiversity benefit from revenues of carbon credits.
6. Water funds have evolved from bottom-up societal processes and are the result of intensive interaction and consensus building among multiple actors. One could benefit from the existence of these institutions by supplying them with complementary payments for other environmental services provided by natural ecosystems in upper watersheds, such as carbon sequestration and biodiversity conservation (Verweij, 2002b).
7. There is a clear potential for increasing revenues for conservation from resource extraction fees (timber, mining, oil, gas), oil spill fines and other pollution fines, taxes on fossil fuels and compensation payments for gas and oil pipelines crossing protected areas.

Recommendations for further research

Options for further, in-depth research include the analysis of the potential of:

- dept-for-nature swaps;
- conservation trust funds;
- payments for environmental services;
- environmental taxes; and
- contributions from the private sector to conservation.

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