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Financing Sustainable Development The Case of Costa Rica

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Abstract

Today, Costa Rica looks back on one decade of sustainable development policy. Although many problems of the county still remain unsolved, Costa Rica has chosen a new and promising development path, giving highest priority to the conservation of nature. Innovative finance mechanisms like debt-for-nature-swaps, an agreement for bio-prospection and climate cooperation projects were put into practice early and in a more consequent manner than in any other country.

The example of Costa Rica serves for studying the different sources of external financing of sustainability, their influence on sovereignty and the margin of governmental action.

Introduction

The concept of sustainable development is based on three pillars: social, economic and ecological sustainability. Basically, creating conditions for sustainable development is a government task, as it cuts across all sectors of a country. Therefore, another element implicitly adds to this enumeration: political sustainability, as defined by reliability of legal and political circumstances. No nation can claim to really develop in a sustainable way nowadays, but the relevant shortcomings in attaining the goals are different from country to country.

In Costa Rica the major problems are to be found in the fields of nature conservation and economic development, while social policy has a certain tradition. Since the Cuban revolution, the country has been serving as a showcase for social equity within the capitalist system. Although social climate has become rougher in recent years, poverty is not as big a problem as it is in other parts of Latin America. As the army was abolished in 1949, a major share of public budgets is destined to social welfare. Nevertheless, social expenditures have contributed to the high public debts. Costa Rica was among the countries which were most seriously hit by the debt crisis of the eighties. Thus finance for other policy fields became scarce. Not even these times of crisis eroded Costa Rica's democratic tradition. The country is marked by a two-party system, comparable to the US. The constitution prohibits a second consecutive term for the president. This balance of power leads to high public support for the government. Maybe this is one of the reasons, why the government succeeded in maintaining a wide margin of political optionality.

As this article concentrates on innovative mechanisms Costa Rica uses to finance its environmentally-oriented development policy, it will neglect "traditional" development aid as well as grants from the Global Environmental Fund GEF, both of which are applied widely for funding the same type of development projects described below.

Environmental conditions and policy

Costa Rica forms part of the geographical bridge both between North and South America and between Atlantic and Pacific oceans. It is among the ten countries with the highest amount of precipitation, but the precipitation patterns differ from region to region. Within the territory a remarkable variety of climatic regions can be found thanks to its mountain range that ascends from sea level up to nearly 4.000 meters.

This complexity in geographic circumstances is reflected in Costa Rica's huge biodiversity. Although Costa Rica represents only 0,035% of the earth's territory, scientists presume between three and seven percent of all species to be living within its boundaries (e.g. Fuchs 1997, p. 38). The extreme weather conditions on the other hand lead to erosion problems. Over 60% of its territory is not suitable for agricultural use (LeBlanc 1997, p. 2).

Compared to other countries of the subcontinent, there is a remarkable public awareness for environmental matters in Costa Rica. The right for a healthy environment was laid down as a constitutional amendment in 1994 (Saborio Valverde 1997, p 8, 38). Ecology was made a compulsory subject at primary school. Classes undertake excursions to the national parks to learn about nature conservation. Sustainable development has been a mayor policy goal for the Government of President José María Figueres Olsen. The Costa Rican Planning Ministry has created a powerful system of sustainable development indicators (Sides, Internet — URL: <http://www.mideplan.go.cr/sides>) which allows measuring the fulfillment of this civil right. It includes social, economic, ecological and climate data.

Protected areas now cover nearly 25% of the national territory. Eleven percent of the territory belong to the strongest protection category which is the declaration as national park in state property. Once declared, a national park cannot be removed, not even by law. Problems arise between protection of nature and the constitutional protection of private property (Art. 45). In some cases where compensation was only paid in state endowments the High Court ruled out the already declared national park. This led to the undesirable situation that 17% of the national parks' area stay in private property until the end of the litigation. Specialists distinguish seven legal statutes, depending on kind of owner (private, NGO — willing or unwilling to transfer property, state organization) and progress of litigation. As a consequence, the owner is eventually tempted to make the most of the land while it still belongs to him or her and fell all the rest of the valuable trees in a short span of time. This is why Costa Rican Government has desperately been seeking funds for buying ground within these “paper parks”.¹

A peculiarity of the Costa Rican democratic system is the *consensualismo*, which means embracing the political opponent. Thus nongovernmental organizations (NGOs) find themselves integrated in the fulfillment of state functions, namely in nature conservation and environmental politics.

¹ The question is, if there is no legal alternative to this high commitment of state capital.

Deforestation and forestry policy

In former times, all of Costa Rica had been covered by different kinds of forests. Although logging was already begun by the pre-Columbian indigenous people and then proceeded by the Spanish colonists, it was not until the second half of this century that massive lumbering destroyed the largest part of the virgin forests. Projections from the year 1992 foresaw complete deforestation between the years 2015 to 2033 (Notimex 1993, p. 21). Latest numbers given by the *Ministerio de Planificación* indicate a decrease in deforestation from 17.000 hectares in 1992 to 8.000 in 1994 (MIDEPLAN 1997). Nowadays there remain about 1.8 million hectares of primary forest, most of which is under some kind of protection (for 1994: MIDEPLAN 1997).

Reasons for deforestation, apart from the tropical timber business, are

- expansion of plantations of coffee and bananas,
- export-orientated beef production,
- dislocation of subsistence farming to less productive areas not claimed by the big land owning companies.

The beef export boom starting in the 1960s offered opportunities even for smaller farmers because investment needs are low as cattle are kept outside all year. Most of the beef is produced for export. Because of the high prestige of cattle farming — the “cattle subculture” (LeBlanc 1997, p. 18) — high incentives are required to counteract its expansion. Each kilogram of beef produced implies the loss of 2,5 tons² of soil (Fuchs 1997, p. 29). This results from the fact that half of the national territory (Lara 1995, p. 116; Santiago/ Schmidt 1995, p. 2) is covered by pastures, while only eight percent of it are regarded as suitable for cattle grazing (Lara, *ibid*). Much of the farmland lies on steep hillsides and in areas where tropical rainfalls easily wash away the soils. On the other hand, beef exports only account for 1.4% of export revenues (for 1996: MIDEPLAN 1997), while the World Resource Institute estimates the value of nature's resources lost between 1970 and 1989 to be \$ 4.1 billion (Tenenbaum 1996, p. 17).

Subsistence farming on marginal grounds results from the unequal land distribution. Costa Rican law tries to compensate for this at the expense of primary forests: after two years of occupying land the *precaristas* are given possession rights, after ten years the “squatters” can claim a property title (LeBlanc 1997, 10). The vicious circle consists in the fact that previously tropical woodlands are rapidly exhausted and degraded by erosion as roots no longer hold them together. Thus farmers see themselves forced to clear more virgin forests.

² The authors always refer to metric units.

Although the national park system was created in the seventies, it was not until 1987 that the Costa Rican government made the conservation of forests a policy goal. There were different measures taken by the Costa Rican Government to prevent deforestation. A tax reduction on wood selling benefits from 30 to 20% is granted if the area is reforested. This is neither an instrument to prevent logging of primary forest nor is the incentive for reforestation strong enough to take effect (LeBlanc 1997, p. 3). Since 1986 there have been reforestation subsidies. The *Certificados de Abonos Forestales (CAF)* are certificates that give the right for tax exemption in the first five years of reforestation up to the amount of the total costs. This subsidy is equivalent to about \$ 1.000 per hectare and is aimed at big land-owners. In 1988 a revolving forestry fund, the *Fondo de Desarrollo Forestal* was created with the help of a debt-for-nature agreement with the Netherlands. It was meant to encourage small forestry, crediting \$ 644 per hectare for the first five years, which are to be repaid as the wood is harvested. The CAF certificate system was remodeled in 1991. Now it is linked to the pursuit of a sustainable forest management plan for each piece of forest. Access was made easier for small land-owners and responsibilities for CAF were transferred to the now restructured *Fondo Nacional de Financiamiento Forestal - FONAFIFO* (LeBlanc1997, p. 3). In its first ten years of existence, 10.5 million \$ were paid to forest owners for their environmental services.

These instruments indeed created incentives for reforestation, but showed some significant shortcomings:

- Primary forests were logged in order to give way for tree planting.
- The certificates were traded by investment companies that did not care about the long-term protection of the new forests.
- Forest direction restricted the number of species to be planted. Most indigenous trees were excluded because there were no data available on growth and output. The ecological effects of this policy are hard to foresee (Butterfield 1994, p. 319).

In April 1996 the forest law was renewed, transferring the administration of logging allowances to the municipalities (Muñoz 1996, p. 2) and private forestry engineers. This regionalization led to an 16% increase in logging permissions (Quesada 1997, p. 6A). Permits more than doubled from 431,566 to over one million cubic meters (Escofet 1997, p. 12). This is only partly due to the fact that permissions are now being granted for several years. The main problems are the lack of work-force and skills in the regional administration and the increased temptation for bribery. Critics state that Costa Rica lacks a systematic measuring of its forest covers (ibid.). The estimation that “50% of the logging in Costa Rica is done without the required permit” (LeBlanc 1997, p. 3) can neither be proven nor denied. Logging can not even be impeded within national parks because the

administration — the *Sistema Nacional de Áreas de Conservación (SINAC)* — does not have enough rangers to control the areas. Yet there is great public awareness about the item. Lately, the abolishment of a lumber shipment tag has been reversed, because of many complaints against transports of allegedly illegally cut-down trees (Escofet 1997, p. 12).

In October 1997 the environment minister claimed that deforestation had been reversed (Chaves/Boone 1997). This is only one part of the truth: A destroyed primary forest can never be restored. Reforestation of previously cleared areas cannot account against the illegal logging of rainforest.

Agriculture and environment

Starting in the middle of the 17th century, plantations have become predominant in agriculture. The first crop was cacao, later came coffee in the high plains and bananas in the Caribbean lowlands. Organic waste is one problem. Seventy percent of the overall organic products of coffee and 40% of banana plants are dumped, in many cases into the rivers, a practice which is illegal since 1938 (Oakes 1996). Coffee and Banana growing are often linked to an abusive use of pesticides which actually lies seven times above world per capita average (Saito/Odenyo 1997, p. 2) thereby endangering farm workers' health and the water resources. The massive use of agrochemicals in cultivation of banana and new non-traditional crops (tropical fruit, macadamia nuts and flowers) and Tannic acids stemming from coffee processing are mayor threats for ground and surface water. Since a new sun-resistant coffee bush was first planted in 1980 the shadowing trees are being cut down which leads to the disappearance of 90% of the birds living in coffee plantation and to higher soil erosion (Oakes 1996). Recently, much attention has been paid to diminishing hazardous use of pesticides in banana plantations. After years of lawsuit Dow Chemical offered an out-of-court settlement for the banana workers affected by sterility having employed DBCP (Avalos Rodríguez 1997, p. 8A), a pesticide banned in the US since 1979 (Saito/Odenyo 1997, p. 2ff). Chiquita Corp. and other banana producers have tried to install an own eco-label which is being certified by the New York Rainforest Alliance and the Costa Rican *Fundación Ambio* (Anonymous 1997b, Anonymous 1997c). Critics object that the „Better Bananas“-principles reflect more or less the requirements of the law on solid and liquid wastes, enacted in January 1995 (Scharlowski 1996).

Population and settlement structure

Population growth endangers sustainability as well. Although the density of 67 inhabitants per square kilometer does not by itself indicate over-population the habitable part of the territory is

relatively small. Two thirds of the 3.4 million population live in the central valley. Population grows by annual rates around 2.5%, 3.2% in urban areas. This arises problems from inadequate infrastructure, air pollution and settlement competing with agriculture use of the most fertile soils of the country.

Energy production and policy

Today's share of renewable energy sources is 82.4%, 75.2% alone stemming from the Arenal hydroelectric plant. The first block of the geothermal plant Miravalles is operational since March 1994, the second one was said to be going on-line in the middle of 1997 (ICE 1997; Cordero 1996), but it has not been finished yet. An operator for the third block has been found by tender, using the model of BOT (build-operate-transfer) for a span of 15 years (Cordero 1996, Segnini 1997). In 1994 the minister for natural resources, energy and mining (MINAE) promised a phase-out in fossil energy production by the year 2001. MINAE officials are very unhappy about this prematurely set aim because it is by no means rational. Firstly, it assumes that electricity consumption remains constant. Instead, power demand grows by approximately 8% per year (OCIC 1997, p. 1). Secondly, there is not yet a technically viable substitute for burning fuel or gas in the quantities needed during peak load.

Power production is dominated by the state-owned electricity and telecommunications monopoly *Instituto Costaricense de Electricidad* (ICE) with its regional subsidiaries, whose indebtedness hinder the power grid to keep pace with the steadily growing demand. There are legal constraints, which obstruct major private investment in energy production (LeBlanc 1997, p. 3). The wish to keep development under control in this case collides with the necessity for deregulation in order to attract foreign capital.

The Energy Savings Act in 1996 introduced a 15% tax on all fossil fuels. It provided for one third of the revenues to go to the national forestry fund FONAFIFO. As the ministry of finance considered itself unable to fulfill the requirement of contributing \$ 15 million to the fund in 1996 there has recently been a treaty between both institutions to guarantee an annual 2.7 billion colones³ for five years starting in 1997.

³ This amount is equivalent to 11.5 million US\$ in the present. According to the treaty, is secured against falling below 7 million US\$ due to devaluation.

Industry and environment

Industry is relatively backwards concerning waste management and energy efficiency. Although already 47% of industrial energy demand is covered by the use of agricultural waste, 37% still stem from burning fossil fuel. Case studies for five typical Costa Rican enterprises led by the German society for development cooperation (GTZ) found out large potentials for reduction and substitution of energy use. Put in practice, the proposed changes could lead to an annual climate benefit in the dimension of 4,000 tons of CO₂ and 80 tons of SO₂. At the same time, cost saving potential would range between 10 and 13% (GTZ 1996, p. 25).

The wood processing industry still receives its raw material at low prices from settlers, which motivates them very little for sustainable forestry. On the other hand, cheap raw material leads to squandering. The nature conservation NGO *Fundación Neotrópica* estimates that only 54% of the logged wood reach the sawmill, where half of the wood delivered are wasted by unproductive processing (Butterfield 1994, p. 318).

As far as CO₂ -emissions are concerned, the highest growth occurred in the transport sector: “From 1983 to 1993, the number of vehicles in use doubled from 190,000 to 390,000, with the number of automobiles increasing from 66,000 to 150,000.” (LeBlanc 1997, p. 4) Lately the Costa Rican Government eliminated the 40% consumption tax on electric vehicles, in order to make them more competitive. An enforced use of electric vehicles in public and private transport could on the long run ease pollution in urban areas and at the same time lower the CO₂ -emissions caused by transport (Muñoz 1997, p. 3), given the above-mentioned structure of electric power production.

Models of external financing

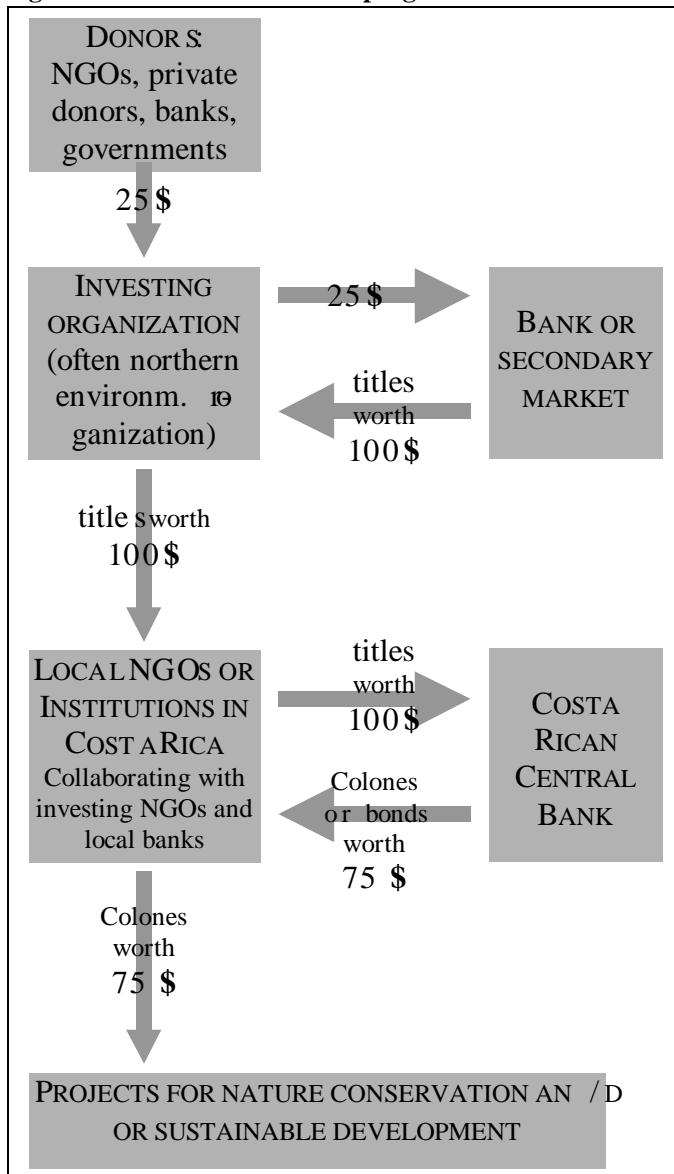
By the end of the eighties the Costa Rican government took conscience in the fact that the social and economic development depended on preserving the few remaining forests. The production of wealth until then had depended on the exploitation of non-renewable resources, most of which resided in the primary forests. Today, soils, water and microclimate are seriously endangered by the loss of tropical jungles. Politics have been trying not to harm the old elite of banana companies, cattle rangers and coffee planters, while giving priority to new sectors of the economy that take advantage from the existence of tropical forests. As the means for this policy should therefore not stem from a new repartition of wealth, in many cases, they had to be found outside the country.

Debt for nature

External financing of nature conservation policy is not new to Costa Rica. Costa Rica claims to be the first country to use the model of debt-for-nature swaps.

In the “lost decade” of the eighties the burden of foreign debts was pressing hard on the whole of Latin America, especially on countries like Costa Rica whose economy relied mainly on the exportation of banana and coffee. By 1985 debt service reached half of the export earnings, with 36% being only for the interests. This made Costa Rican debt titles extremely cheap on the international finance markets. Environmental donors seized the opportunity to buy and convert them into national currency in order to finance conservation projects. In March 1987, the Indiana based Northwest Bank indirectly invested 11.8 Million \$ in shares of the local company Portico, which produces doors and exports them to the US. Its woods stem from forests managed in a sustainable way. In August 1987, World Wide Fund for Nature (WWF) and The Nature Conservancy (TNC) started negotiating with the Costa Rican central bank. They invested 0.9 million \$ in Costa Rican debt titles. Over the years, nine different conservation projects received funding worth 5.4 million \$, over four times the initial sum. Other transactions came from the governments of Netherlands and Sweden. Between 1987 and 1991, 91.9 million \$ of debts were converted into green investment. This is only a tiny fraction of the overall Costa Rican debt burden, which rounded 3 billion \$ in the eighties. However, it gave the government the opportunity to actively maintain its forestry policy, to create jobs in the national parks and to gain confidence among investors and international NGOs. By setting the incentives, i.e. fixing the price of acceptance, it kept control over the budgets and at the same time regulated the attractiveness of debt-for-nature programs. In theory, paying debts in national currency leads to inflation, because the central bank is tempted to print new money. Practically, this effect was alleviated by prolonged payback periods (Kloss 1994, pp. 119-136). However, debt-for-nature programs have the disadvantage of high transaction costs for the involved organizations. Debt-for-nature operations depend from so many different institutions (banks, brokers, governments, central bank etc.) that a lot of paperwork is needed. As a rule of thumb, if the initial investment cannot be at least doubled, the donation is better invested directly. As the debt crisis alleviated in the last years, no new projects have been initiated so far.

Figure. 1 How debt-for-nature programs work



Source: Kloss 1994, p. 91

Tourism

In its boom years by the end of the 1980s and in the beginning of the 90s, tourism rates grew by 25 to 30% annually. 1994 was the first year foreign currency earnings generated by tourism surpassed those from banana exports. Today tourism employs 17% of the active population (Burkard 1996, p. 20) and earns the country 700 million \$ each year (Burnett 1998). Most tourists come from US and Latin America (41% each). The share of eco-tourists to Costa Rica is estimated to be above 40% (Panos Institute 1996). The term ecotourism or sustainable tourism is not clearly defined. In any case, ecologically aware travelers choose the country because of its

natural beauties and, on the contrary, would not visit it without them. Within this range, scientific visitors or bird watchers can be found as well as white water rafters who tend to consider nature a scenery for their recreational activities. Worldwide ecotourism is the fastest growing market share within tourism with a growth rate between 10 and 15% (Panos Institute 1996). After an initial phase of skepticism, the government of Costa Rica decided to strongly support ecotourism. Tourism minister Carlos Rösch advocated the integration of a clause concerning sustainable tourism into Agenda 21 at the Rio Conference in 1992. The average eco-tourist spends more money on his or her vacation than normal tourists do. In 1995 every traveler to Costa Rica left \$ 840 within the country. This number rose by 71% within only eight years which reflects a rise in quality. Ecotourism relies very much on regulation in order to prevent destroying its own bases. The Tourism Ministry gives priority to small and medium enterprises and takes care for the offers being benign to the environment. In 1993, for instance, a German investor was expelled because of irregularities in constructing a hotel complex. He was charged of having eradicated valuable vegetation, killed animals of protected species and having damaged a coral reef (Anonymous 1993).

The village of Longo Mai is an example for an ecologically and socially orientated tourism development. It lies next to La Amistad National Park in the south-east mountain region near the Panamanian border. Longo Mai has specialized in hosting educational travelers and solidarity workers (Burkard 1996, 21). Regional effects of tourism can as well be studied in La Fortuna, near the Arenal volcano. The village not only by its name resembles a gold digger town. Practically all of its 800 inhabitants are in some way or the other dedicated to tourism. The typical hostel does not exceed five rooms or cabins. Small supermarkets and restaurants provide food for the visitors; handicraft gift shops offer guided tours to the volcano and the hot springs beneath.

The national park entrance fees for foreigners were raised overnight from 1.3 (Panos Institute 1996, p. 10) to \$ 8 which at the same time increased the tourists' participation in conservation and halted the crowding of the areas. In some places now the number of visitors at one time is limited. Small farmers and land workers find jobs as rangers or guides in the parks, thus ensuring the support of the local population for nature conservation . Tourism also has its share in Central American cooperation. Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica and Panama plan the installation of a 1,500 mile biodiversity corridor, the *Paseo Pantera* (Stevens 1996). However, tourism always depends on business cycles and on the public image of a country, which can easily be spoiled. In the last years, a slow decline in number of visitors can be observed, while incomes from tourism are stagnating on a high level. This is due to relatively high prices, compared to countries like Guatemala or Peru and to rising delinquency. While the cities are

controlled by invisible but efficient security forces, recently even guided groups of hikers have been subject to hold-ups within the national parks.

Bio-prospection

Another creative means to generating income from preservation of primary forests is its use as a resource for genetic material. The first time its exploitation was put on a regular basis was in 1991 with the cooperation between the US based pharmaceuticals enterprise Merck & Co and the National Biodiversity Institute INBio, founded as a NGO by the Costa Rican Government in 1989. The agreement implies the systematic collection and documentation of samples from the rain forests by INBio specialists and their use by Merck's research laboratories. Merck paid about one million \$ as a fixed sum on every renewal of the treaty⁴. A license fee between one and three (in some cases up to ten) percent of the revenue is granted in case drugs basing on Costa Rican genetic substances get on the market. The gene database is made available to the public by the company by Internet (URL: <http://www.merck.com>). INBio is to use only half of this income for its operative purposes while the rest goes to the preservation of the forests (Tenenbaum 1996, p. 19). The rights of author stay within the country (Anonymous 1997b). This contract, the full text of which is kept secret, has widely been criticized for selling out a country's natural resources. Still it has to be considered that the "traditional" way to generate income is by destroying one's own resources. Costa Rica's attempts to preserve its natural beauties as a way to have the cake and eat it too: Whole sectors of the economy are living on the survival of the indigenous flora and fauna.

Activities Implemented Jointly

Activities Implemented Jointly (AIJ) is the first phase of a series of bilateral and (in theory) multilateral climate protection projects between industrialized and developing countries. Climate cooperation was first instituted by the UN Framework Convention on Climate Change and then denominated "Joint Implementation" (JI) It departs from the idea that the emission of gases which cause the global greenhouse effect can be limited anywhere and should start where the reduction efforts are most cost-efficient. Big emitters of the industrialized world should therefore invest in climate protection in developing countries, thus fulfilling their obligation to reduce domestic emissions. Host countries can profit from the positive side effects of the measures. Critics argued that the historical responsibility for the climate change lies in the northern hemisphere and suspected a new kind of ecological imperialism. However, while the instrument of climate

⁴ The initial payment is said to have been 1.14 million US\$. There have been two renewals up to now, one in 1993, the other in 1997.

cooperation developed over the years, the key principle remained that participation by the host countries was on a strictly voluntary basis and requires government approval, to make sure that benefits are shared equally between investor and host. Funding has to be strictly additional in order to not divert finance from official development aid. The AIJ pilot phase was officially started at the 1995 Conference of the Parties to the Climate Convention. It has the peculiarity, that investors are not allowed to account for the greenhouse gas reductions achieved abroad in their home country. After the year 2000, AIJ will be replaced by the so-called "Clean Development Mechanism (CDM)" which was decided upon at the Kyoto Climate Conference. Investing countries from the northern hemisphere will then be allowed to credit greenhouse gas reductions achieved in the host countries onto their national reduction or limitation targets.

The main greenhouse gas is carbon dioxide (CO₂), the bulk of which is emitted in oxidation processes. The natural balance is destroyed by human-induced burning of fossil fuels and clearing of forests. There are mainly two groups of measures to reduce CO₂ emissions; energy and forestry projects. Energy projects can consist in increasing the efficient use of energy or replacing fossil fuels by renewable energy like wind and water power. Forestry projects halt deforestation to stop the release of carbon stocks, rebuild the stocks by restoring ancient forests or plant new forests which will fix CO₂ from the air. Due to problems in measurement and verification, forestry projects may not be included in the CDM.

On the basis of its prior experience, Costa Rica was among the first countries to play an active role in climate cooperation, taking the chance to promote its sustainability policy. Costa Rican climate cooperation started in September 1994 with a "Statement of intent for bilateral sustainable development cooperation and joint implementation of measures to reduce emissions of greenhouse gases" (USIJI 1994), followed one year later by a similar document between the US and all Central American States. The aims of cooperation are best described in the bilateral statement. The following items are explicitly but not exclusively listed: "... biodiversity conservation and ecosystem protection, reduction of local pollution, sustainable land-use practices, improved rural income opportunities, and local participation in project planning and execution." (USIJI 1994)

In April 1994, the Costa Rican JI Office (*Oficina Costarricense de Implementación Conjunta*, OCIC) - was created as a result of the cooperation between the later Ministry for Environment and Energy (MINAE)⁵, the privately organized Costa Rican Investment and Trade Development Board (CINDE) and two NGOs. One is the FUNDECOR, an NGO dedicated to nature conservation, whose president, Franz Tattenbach, at the same time heads OCIC. The other is the ACOPE, the

⁵ In 1994 its name was *Ministerio de Recursos Naturales, Energía y Minas* (MINIREM).

Association of Independent Power Producers. OCIC receives additional funding from CRUSA, the Costa Rican — US Foundation for cultural exchange. OCIC was established by a presidential decree. It reports to the MINAE and executes the authority to formulate JI policy, evaluates and approves projects (LeBlanc 1997, p. 7). Nonetheless, it is not located clearly within the system of separation of powers. OCIC consists of only seven persons, many of whom are constantly representing the institution in international meetings. Five of them are scientists.

The OCIC's guidelines for project criteria are:

- Minimize red tape.
- Be experience based.
- Meet current international standards.
- Represent Costa Rica's particular interests (Lay et al. 1996).

Project proposals are to be decided upon within six weeks. There are different sets of criteria, which can be grouped by general criteria, climate priorities and feasibility items.

The general criteria state that projects should be according to Costa Rican laws and sustainability goals. They should offer "enhancement of income opportunities and quality of life for rural peoples and members of certain vulnerable groups including cultural minorities" (Lay et al. 1996). The communities involved have to support the project. Transfer of skills and technology is requested as well as to keep negative influences of the project on an acceptable level.

Criteria cited from the UN Framework Convention on Climate Change (UNFCCC) are reinforced by OCIC and exceeded as far as verification by a "qualified, non-participating organization" (ibid.) is requested. Financial additionality to development assistance or any other obligations by industrialized countries is called for, according to the UNFCCC. All costs related to the project have to be considered, including those of non-participants. Institutional feasibility is demanded on the Costa Rican side. Political, administrative or scientific institutions must be able to indeed administer the project as well as the proponent. Previous climate cooperation experiences on the proponent's side are highly appreciated.

First climate projects

Most of the climate cooperation projects were proposed by the Costa Rican environment ministry MINAE. Not surprisingly, most of them are to be found in the field of forestry.

Nine bilateral JI projects have been approved in Costa Rica. In Costa Rica there are but forestry and renewable energy projects. The total amount to be invested in forestry projects is ten times

higher than in energy projects, its volume in terms of carbon offsets is expected to be 73 times higher than in the energy projects (Gorbitz 1997, p. 55).

Of the five forestry projects approved by USIJI only one project is fully financed. Another one has received just enough funding to realize a pre-feasibility study. One out of four energy plants is definitely operational. The lack of finance is as typical for the AIJ pilot phase as the fact that all participants tend to hide this fact from the public. A blatant example for this behavior is the latest report to the UNFCCC where projects that are not financed are described to be operational. Cooperation with Norway is special in the way that projects are not only approved but also financed by the guest country's foreign ministry.

Regarding climate effects, there are two possible forestry project forms: One consists in the preservation of existing forests in order to prevent adding GHG from deforestation to the emissions from the combustion of fossil fuels. This means that no imminent emission reduction is taking place. The other is reforestation. In theory, constant reforestation could for some time sequester emissions of industry and traffic, thus winning time for a change of patterns in production and use of energy. The problem is that pests, fire or simply logging and changes in land use can revert the progress made in all the years of forest growing. In contrast, emission reductions once achieved from efficiency gains cannot be reverted in the future. The aspect of future losses makes forestry projects difficult to handle in context with climate cooperation.

The forestry projects are distributed all over the country. They include two projects for preservation, Biodiversifix in the northern Guanacaste Conservation Area and Ecoland, in the Esquinas National Park. The latter one is fully operational thanks to AIJ. Reforestation is the goal of the Carfix project, located in the Central Volcanic Range, near the capital. A plantation project, Klinkifix, aims to plant fast growing exotic pine trees in the Turrialba region. The private developer had been planning the plantation for years. As it does not find funding through AIJ, he is now collecting private donations in the US. From the aspect of sustainability, Klinkifix is questionable, as pine trees do not contribute to biodiversity, nor will the plantations will end up in lasting forests. The Virilla River Basin Project, in cooperation with Norway, reforests the upper course of a river used for power generation.

As for energy projects, there is an enormous potential for renewable energies in Costa Rica. However, from the AIJ point of view, renewable energy projects do not pay off in Costa Rica, as they do not replace very much fossil fuel, because 80% of the electric energy is already produced by renewable sources. This will change, as the country is preparing to export electric energy to its

neighbors El Salvador, Nicaragua and Panama. As a result of AIJ, a first wind power station has gone on-line in the strong-wind area of Tejona.

Developing the instrument of climate cooperation

From the very beginning, Costa Rica has handled AIJ in a very autonomous way. The first projects stemming from cooperation with USIJI are being financed or are still seeking funding on a project-to basis. The investors are directly involved in proposal, planning and implementation. For these projects the transaction costs are high, return on investment as well as the real greenhouse gas effects are submitted to considerable entrepreneurial risk. This is why Costa Rica has developed an alternative model of financing climate cooperation.

The invention of so-called creditable, tradable offsets (CTOs) was the unilateral anticipation of an international crediting system. Once crediting will be agreed upon on an international level, CTOs can be regarded as emission allowances. Each CTO stands for an amount of GHG reduced or sequestered in vegetation, expressed in carbon equivalents⁶. MINAE guarantees the amount to the CTO buyer for the period of 20 years. This means that, if any of the financed projects fails or does not produce the expected GHG effects, the State of Costa Rica will provide for other projects to take the same effect. This is done by selling only a part (approximately 17%) of all possible carbon reductions (90 million tons) as CTOs. Each single CTO (equivalent to 1 ton of carbon) is sold for 20 \$. As soon as emissions trading is begun, the price will be derived on stock markets. The whole mechanism depends on the two conditions:

- The home country of the buyer will recognize CTOs as valid.
- CTOs are of economic use for their bearer (e.g. entitles him or her to tax exemptions).

Proceeds from selling CTOs go to the above mentioned National Forestry Finance Fund FONAFIFO⁷, which is responsible for the so-called umbrella projects. In theory, these projects only need the approval of the Costa Rican JI office but not of the investor's country. On the contrary, CTOs would not be transferable. In practice, the State of Norway as the first buyer of CTOs developed two projects together with OCIC. The overall project volume being 3.4 million \$, Norway obtained 200,000 CTOs for the first 2 million \$ invested in forest conservation and reforestation. But there are actually three "real" umbrella projects being financed by fuel tax and CTO selling. These include the *Proyecto Forestal Privado*, which "aims to compensate farmers for forest conservation, reforestation or sustainable management efforts" (Foundation JIN 1996, p. 2),

⁶ One ton of carbon equals 3.67 tons of CO₂.

⁷ In other publications reference is made to a "National Carbon Fund" (i.e. Foundation JIN 1996b, p. 2). This fund is not clearly defined. It seems to be just a part of FONAFIFO.

the *Proyecto de Áreas Protegidas* serves the national park administration primarily for purchasing land, and the Costa Rican Renewable Energy Export Program which totals 215 MW of capacity to offset 0.35 million t carbon per year in the importing neighboring countries (LeBlanc 1997, p. 12f). In July 1997, the US Initiative on Joint Implementation (USII) bought 16 million CTOs, 11 million of which are to be achieved by forest conservation and the rest by reforestation. An independent verification of all CTO-related projects by the Swiss company SGS has been agreed upon, which is financed by the World Bank. Up to the present, there is no private bearer of CTOs, except for the US based company Center Financial Products which bought a 1,000-ton CTO at a price not revealed to the public (Liddell/Escofet 1997, p. 12) and placed it at the Chicago Stock Market.

Which are the advantages of CTOs over a “normal” JI procedure?

Investors can enter cooperation on a very small budget because virtually the minimum investment could be \$ 10 for one CTO. No administration is required and there are no external costs. The investor takes no risk if one project fails or is delayed; the only risk lies in the stability of the constitutional system of Costa Rica, which in turn has proved stable over the last 50 years. On the other hand, there is no free riding for the investor by linking the engagement to supply contracts. This goes in line with the restrictions set by the UN Framework Convention.

The benefits for Costa Rica consist in realizing projects according to its own economical necessities and political preferences, thus fully conserving its sovereignty. This is reflected in the decision of OCIC to withdraw projects that have not yet received financing from the project-to-project basis and to carry them out under the Forestry Finance Fund's umbrella.

Costa Rica offers all the necessary requirements for successful climate projects: strong and lasting democratic institutions and wide acceptance of the goal of climate protection. Climate cooperation may help to counteract pressures of exploitative industry and farming. The measures financed do not induce a new path of development, they just foster and stabilize a process already begun by Costa Rican politics. Climate cooperation can set further economic incentives to realizing the value of nature's resources. In contrast to the theory of climate cooperation, this is no transfer of know-how in the north-south direction. In the field of nature conservation Costa Rica is working out knowledge transferable to other tropical regions.

Environmental services

Costa Rica has always been very cautious in questioning the role of the big US banana companies, which are active on its territory. Only in March 1997, a MINAE study revealed the damages banana

plantations do to the environment (Alavarado Davila 1997). This can be seen as the first step beyond the traditional limits of Central American sovereignty. The concept of environmental services, which was first applied in forestry, has recently led to a new type of contract, first celebrated between the environment ministry MINAE and the transnational fruit company Del Oro.

Del Oro passes 1,200 ha of land to the Guanacaste Conservation Area (ACG) in payment for six kinds of environmental services the contract mentions. These are:

- “Biological control agents” (mainly insects) coming from the ACG forests.
- Technical services rendered by national and international ACG consultants to the company.
- Water provision from the Rio Mena.
- Biodegradation of 1,000 truck loads of orange peels annually.
- Protecting a plantation of orange trees from pests which lies isolated, surrounded by ACG forests.

Each service is mentioned with price per unit and a minimum fee.⁸ Apart from this, any use beyond the minimum will have to be paid for by the fruit company. On the other hand, carbon benefits resulting from restoring forests on the transferred lands will be shared between Del Oro and the ACG.

Conclusions

From the Costa Rican example, several lessons can be learned:

1. Sustainability is a new development path, which benefits certain sectors of an economy and goes to the detriment of others. The inevitable conflict between them will be decided by each sector’s contribution to national wealth.
2. New interest groups that benefit from nature conservation have been identified and organized.
3. Complying with social concerns provides the basis for acceptance
4. In contrast to the criticism by ecologists of selling out the country, the government, together with the national NGOs, have managed to keep its control of the process.
5. Compared to other Central American governments, Costa Rica has maintained a wide margin of political optionality by finding innovative sources of financing its political goals.
6. Sustainability policy has to be consistent, reliable and publicly supported. Only this can assure the confidence of foreign donors and investors.

⁸ The value of these services seems a bit arbitrary though, and give the impression to be calculated to match the price of the transferred land.

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