

# Pilot Phase Joint Implementation Projects in Costa Rica

A Case Study

by  
Carlos Chacon  
Rolando Castro  
and Steve Mack

# Acronyms

ACCVC	Costa Rica's Central Volcanic Mountain Range Conservation Area
ACG	Guanacaste Conservation Area
ACOPE	Costa Rican Association for the Production of Electricity
ACOSA	Osa Conservation Area
AIJ	Activities Implemented Jointly
CACTU	County Agricultural Center of Turrialba
CAF	Forestry Investment Certificate (Certificados de Abono Forestal)
CAFA	Advance Forestry Investment Certificate (Certificado de Abono Forestal por Adelantado)
CAFMA	Natural Forest Management Certificate
CARFIX	Costa Rican JI project in the Central Volcanic Mountain Range Conservation Area
CCB	Forest Protection Certificate
CDM	Clean Development Mechanism
CEDARENA	Centro de Derecho Ambiental y de los Recursos Naturales
CERs	Certified Emissions Reductions
CIEL	Center for International Environmental Law
CINDE	Costa Rican Coalition of Development Initiatives
CNFL	National Power and Light Company in Costa Rica
COMBOS	The Association for the Conservation and Management of Tropical Forests
COP	Conference of the Parties
CTOs	Certified Tradable Offsets
ECOLAND	Esquinas Carbon Offset Land Purchase Initiative in Costa Rica
FCCC	Framework Convention on Climate Change
FESP	Costa Rica's Forestry Environmental Services Payment
FONAFIFO	Costa Rica's National Fund for Forestry Financing (Fondo Nacional de Financiamiento Forestal)
FUNDECOR	Foundation for the Development of the Central Volcanic Range
FUNDEX	Foundation for Export Development
GHGs	Greenhouse Gases (ie: CO <sub>2</sub> - carbon dioxide, CH <sub>4</sub> - methane, N <sub>2</sub> O - nitrous oxide)
GRUAS	Costa Rica's multi-institutional and inter-disciplinary commission to identify land for purchase and promote sustainable forestry policy
INBIO	National Biodiversity Institute
IPCC	Intergovernmental Panel on Climate Change
JI	Joint Implementation
JUNAFORCA	Costa Rican coalition of landowners
KLINKIFIX	JI pilot reforestation project in Costa Rica
LUCF	Land Use Change and Forestry
MINAE	Costa Rica's Ministry of the Environment and Energy
MOP	Meeting of the Parties
NGO	Non-governmental organization
OCIC	Costa Rica's Office for Joint Implementation (Oficina Costarricense de Implementación Conjunta)
PAP	Protected Areas Project in Costa Rica
PFP	Private Forests Project in Costa Rica
SINAC	Costa Rica's National System of Conservation Areas
SGS	Société Générale de Surveillance

## A. Introduction

Costa Rica has been a leader in the development of joint implementation pilot projects under the United Nations Framework Convention on Climate Change (UNFCCC). Article 4 of the UNFCCC allows Parties to the Convention to develop projects in conjunction with other Parties, or their citizens, to mitigate or prevent emissions of greenhouse gases through the use of the joint implementation or JI mechanism.<sup>1</sup> To this end, Costa Rica has officially established and supported the governmental Costa Rican Office for Joint Implementation (*Oficina Costarricense de Implementación Conjunta*, OCIC). OCIC has reviewed, approved and helped promote a significant number of privately developed and managed pilot projects and has also pioneered the development of new frameworks for large-scale public and public-private JI forest conservation, regeneration, and tree plantation initiatives in Costa Rica.

OCIC has called privately developed and implemented initiatives “First Generation” or “First Phase” projects. These projects were the first to be developed, and OCIC’s participation in their implementation was for the most part limited to project review, approval and promotional assistance. Based on its experiences with these private projects, OCIC has gone further, developing proposals for larger scale, nationwide JI projects with very active governmental participation. OCIC refers to these proposals as the Second and Third Generation of JI projects, and has set forth these proposals as possible models for JI programs in other countries. The nationwide proposals have taken the form of two broad “umbrella projects.” Through these proposals, The Ministry of the Environment and Energy (MINAE) is seeking JI funding to provide payments for environmental services, reforestation and forestry projects with private landholders (the Private Forestry Proposal, PFP) and to consolidate the nation’s system of national parks and biological reserves (the Protected Areas Proposal, PAP). In order to fund both proposals, the government of Costa Rica is offering investors carbon mitigation by means of a system of “Certified Tradeable Offsets (CTOs),” through which the Government of Costa Rica guarantees carbon mitigation in the name of the buyer of the CTO.<sup>2</sup> The price of these CTOs was US\$10.00 per ton of carbon under an agreement with the Government of Norway and now the price of a CTO is US\$20.00 per ton of carbon.

Those familiar with the JI debate but unfamiliar with Costa Rica might be surprised that a primary motivation for the government’s strong interest in promoting this mechanism has been its view that JI offers a promising source of funding to protect the world’s biodiversity.<sup>3</sup> Thus, the principal focus of OCIC’s efforts to date has been forest preservation, forest regeneration and tree plantation carbon sequestration projects. Energy projects have been developed more recently, although mostly promoted by private parties. This strong interest in biodiversity conservation is fully consistent with the country’s long history of leadership and innovation in this area among developing countries worldwide. In this vein, Costa Rica has established what is by far the most complete and representative system of protected natural areas in Central America. Costa Rica has long been a major center for tropical biology research, with important research stations in various parts of the country. It was a pioneer in using debt-for-nature swaps to fund conservation, and with the creation of the non-governmental National Biodiversity Institute (INBIO), Costa Rica has become a world leader in biodiversity prospecting. INBIO has committed to donate a significant portion of any profits realized from its activities to further consolidate the nation’s public protected areas system. Private conservation efforts have protected significant areas of tropical forest and Costa Rican NGOs are beginning to use conservation easements in Latin America in order to help ensure biodiversity protection on private lands.

Indeed, Costa Rica has envisioned, and to a significant degree has created, a “biodiversity industry,” where conservation and use of biodiversity through prospecting, tourism, research, regulation of water supplies and mitigation of greenhouse gases is seen as an important element of the economy.<sup>4</sup> In the context of JI, the existence, health and growth of this industry can and should be seen as a form of guarantee that carbon sequestered in forests will remain there.<sup>5</sup>

However, despite much progress in the area of biodiversity conservation, Costa Rica also faces severe threats to its environment. Before 1990, deforestation rates in Costa Rica were among the highest in Latin America, and efforts to control deforestation outside National Parks and Biological Reserves have been mostly ineffective. Costa Rica has much to do to control illegal deforestation. As a result of deforestation and poor land management, erosion is a serious problem, threatening agriculture and silting up hydroelectric facilities, on which the country is largely dependent for clean power. Damaging floods in recent years have also been blamed in part on deforestation.

Several factors have contributed to the rate of deforestation. A large percentage of lands within declared protected areas remain in private hands and are often poorly managed. Land use planning has not been consistently undertaken or implemented. As a result, a great deal of the national territory is being put to uses for which it is not suited, or for which better uses exist.<sup>6</sup>

In addition to mitigating greenhouse gas emissions, if fully operational, JI could also contribute significantly both to consolidating Costa Rica’s achievements in biodiversity conservation as well as addressing some of its major environmental problems. For example, OCIC is proposing through the PAP that JI funds invested in land use projects could be used to consolidate the nation’s system of protected areas, adding to the sequestration of carbon and preventing its release through forest loss, in addition to biodiversity benefits. Through the PFP, OCIC has also proposed that JI be utilized in reforestation projects in watersheds and on lands whose proper capacity calls for forest cover, thus sequestering carbon, reducing erosion, mitigating flooding, improving hydroelectric generating potential, and improving the quantity and quality of water supplies. Further, JI funding devoted to the production of hydroelectric and wind energy, energy conservation and efficiency or to the promotion of cleaner transportation technology could reduce emissions of greenhouse gases and improve local air quality, as well as provide significant economic benefits. Because of the inherent flexibility of the mechanism, JI can be applied creatively to effectively address a large number of local environmental problems. *The great potential of JI to generate significant environmental and other benefits in project host countries, if the projects are well designed and executed in addition to its emissions mitigation potential is an issue that has not received sufficient attention.*

This report will present an introduction to the political, economic, legal and institutional framework affecting pilot JI forest projects in Costa Rica. The purpose of the report is to present a picture of how local rules, institutions, and other conditions can help or hinder the development and execution of JI forest projects, and offer observations and recommendations on the development of JI projects based on the Costa Rican experience. The report will attempt to address the issues of additionality, methodologies employed for determining baseline data, verification, leakage, and insurance in the context of both the current international debate on joint implementation and the actual pilot forest projects being developed in Costa Rica. The report will address both private and public participation in pilot

JI forest projects. While the focus of this report will be on Costa Rica, it is hoped that it can also provide insight into potential opportunities and problems that might be faced in other developing countries, particularly those in Latin America. The authors also hope to introduce a dose of real-world experience to an extremely important world-wide debate about the pros and cons of JI that has been almost entirely theoretical.

## B. General Background to Joint Implementation in Costa Rica

In many ways, Costa Rica is unusual both as a developing country and as a Latin American Republic, a circumstance which should be taken into account when considering JI projects in this country as a model for projects in others. While currently emerging from a serious economic recession, Costa Rica has been relatively prosperous, particularly in contrast to its Central American neighbors to the north. Costa Rica abolished its army in 1949, and President Oscar Arias Sánchez won the Nobel Peace Prize in 1987 for the development of a peace plan which led to the end of civil wars and democratic elections in Nicaragua, El Salvador, and Guatemala. There is a high level of literacy and life expectancy, a social security system, and accessible health care throughout the country, although high levels of immigration from other Central American states over the past decade and a half have placed burdens on social and economic support systems and services. Free, non-violent and fair elections have occurred regularly every four years since the revolution of 1948. While corruption and lax enforcement of some laws have caused some problems, these are less serious than in other developing countries in Latin America and around the world. As noted, Costa Rica is also a leader in the conservation and productive use of biodiversity, with approximately twenty-five percent of its land area included under one category of protection or another (although, as will be shown, different categories of protected areas do not receive equal protection). Largely as a result of its relative tranquility and reputation for conservation of its abundant natural resources, tourism has joined agriculture and light industry as a keystone of the economy. For these reasons, Costa Rica is viewed as having a favorable investment climate for a developing country.

Costa Rica signed the FCCC in Rio de Janeiro on June 1992, and the Convention was ratified by the Legislative Assembly in June of 1994.<sup>7</sup> Also, by Law N°7513, published on July 13, 1995, Costa Rica ratified a Central American Agreement on Climate Change. With a view to implementation, Costa Ricans and their partners from other countries began the development of pilot JI projects soon after the FCCC came into effect. One of the earliest comprehensive proposals, the Esquinas Carbon Offset Land Conservation Initiative (ECOLAND) was completed in 1994, and implementation of the project began soon afterwards. ECOLAND, which used funding from a U.S. utility company and a private U.S. foundation to buy private lands for inclusion in a public national park, has been fundamentally completed, with the parties presently negotiating the terms of the transfer of the land from COMBOS, the non-governmental organization that purchased the lands from their owners, to the government. When this occurs, and when adequate protection is ensured by the government, ECOLAND will be the first successfully completed pilot JI forest project in the world.

Several other early private pilot JI forest projects were being developed at this time, including CARFIX, BIODIVERSIFIX, and KLINKIFIX. Each of these is discussed in Section IV.

The present administration of President José Figueres Olsen has taken a strong interest in JI in Costa Rica, and developing a highly active JI program has been one of the highest priorities of Minister of the Environment and Energy René Castro Salazar. As noted above, the prospect of using joint implementation to consolidate Costa Rica's national system of protected

areas led the administration to concentrate first on developing and promoting forest projects. The ministry helped shape the basic forestry law, that was then undergoing revision, to include the basic framework for two large-scale public and public-private JI pilot projects: one to consolidate land ownership in National Parks and Biological Reserves and to help pay for their protection, and another to provide incentives for reforestation, sustainable management and forest protection on private lands. These projects will also be discussed below in Section IV.

Another early accomplishment of the Figueres administration was the signing of a letter of intention between the governments of Costa Rica and the United States in September of 1994. This letter established the intention of both parties to jointly explore the potential for developing JI projects.<sup>8</sup> A more recent accomplishment was the signing of an agreement with the government of Norway and a consortium consisting of three Norwegian corporations. The agreement calls for the government of Norway to contribute an initial financing of US\$1.7 million, from a Norwegian fund for joint implementation funded by a tax on gas, and the consortium to contribute US \$0.3 million to a combined reforestation and hydroelectric power pilot JI project. The initial goal of the project is to reforest 1,000 hectares of private land in the watershed of the *Rio Virilla*, and to upgrade a hydroelectric facility located on the river.<sup>9</sup> This project is taking place within the framework of the PFP, discussed in Section IV C.

Other recent developments include the offering for sale of CTOs by Centre Financial Products and a contract with the Swiss firm *Société Générale de Surveillance (SGS)* to undertake certification for the PAP. The four main elements of the assessment by SGS are: a) suitability analysis; b) scientific methodology assessment; c) quantification of carbon offsets; d) risk and uncertainty assessment.<sup>10</sup>

## C. Forestry and Conservation in Costa Rica

As noted, the strengthening of the sustainable forestry sector and the consolidation of the nation's system of protected areas have been primary focuses of JI activities in Costa Rica to date, and are the subject of OCIC's two nation-wide JI proposals, the PFP and the PAP. In order to understand how JI forest projects in Costa Rica will work in practice, an introduction to forestry and conservation issues is essential. In addition, Costa Rica has recently undertaken an important study of the location and condition of the nation's biodiversity, in order to set priorities for government action in promoting both sustainable forestry and conservation. This study, undertaken by an inter-institutional and multi-disciplinary commission known as GRUAS, is also being used as the basis for guiding the investment of resources obtained through MINAE's nationwide JI projects.

### 1. Regulation of Forestry Activities

Before the arrival of Columbus in 1502, 99.8 % of Costa Rica's territory was covered by forest. Early in the 19th century the introduction of crops like sugar cane, tobacco and coffee led to the deforestation of the Central Valley, and by the end of that century the expansion of cattle grazing activities to other areas of the country initiated a process of deforestation of mountainous areas and other fragile lands.<sup>11</sup> This process of deforestation has continued, and has been particularly strong in the last half century.

The expansion of agriculture and the consequent destruction of forest was actively promoted by governmental policies, particularly the agrarian reform legislation, which was highly favorable to those seeking to cultivate unused land<sup>12</sup>. It also implemented rural land

titling programs<sup>13</sup>, and established agricultural subsidy programs for cattle ranching and agricultural plantations<sup>14</sup>. For most of this period, the creation of an efficient and sustainable forestry industry was a relatively low priority for either the government or private interests, and much valuable timber on lands cleared by settlers was burned, misused, or left to rot. Eventually this situation became more evident and the need for regulations dealing with the proper use and conservation of forests gained more attention from Costa Rican authorities.

However, public concern for the preservation and sustainable use of natural resources in Costa Rica is not a recent development. Even before Costa Rica became an independent country in 1821, some legal provisions existed to address forest protection. A striking example of this early concern was a proclamation issued in 1775 by Spanish governor Don Juan Fernandez de Bobadilla, prohibiting burning fields and forests since “the practice is followed by sterility of the soil.”<sup>15</sup> However, it was not until 1969 that forested lands became subject of specific regulations that promoted not only the proper use and conservation of forests, but also provided an institutional structure for implementation. Beginning in 1969, the government of Costa Rica passed legislation to control forestry activities through a system of permits and management plans. However, these proved to be largely ineffective in slowing forest loss. This law also created the Forestry Service as an agency of the Ministry of Agriculture and Livestock. It was not until 1978 that the first Forestry Development Plan was published, although it was never implemented. Most of the problems faced by the Forest Service were attributable to the dearth of economic resources and the lack of proper training in sustainable forestry practices, the very low profile that forest products had in the national economy, and an inadequate legal and institutional structure.

By 1979, the government began to apply incentives to promote reforestation activities, originally allowing persons investing in reforestation to deduct the costs associated with this activity from their income taxes.<sup>16</sup> Further incentives included exemptions from property taxes<sup>17</sup> and an income tax exemption on earnings from reforestation. In 1983, the government, acting through public banks, also created trusts to finance tree plantations through low interest loans for terms as long as 30 years. However, sufficient funds were not committed, and few landowners showed interest in investing in this activity. In 1986, the government attempted to further stimulate reforestation by private landholders by passing a new forestry law<sup>18</sup> which authorized Forestry Bonds (*Certificados de Abono Forestal* -- CAF), freely negotiable tax credits, in a given amount per hectare. While these incentives did stimulate reforestation, there were also abuses, as some investors accepted credits without fully meeting their reforestation obligations, or cleared native forest in order to reforest and collect CAF incentives. In addition, inexperience also added to the negative environmental impacts of these early reforestation programs: plantations were badly managed, poor quality seed was often used, and there was heavy reliance on non-native species.<sup>19</sup>

In February of 1996, a new forestry law was passed which established a new framework for both control of forestry and incentives, and also set forth the basic legal framework for the large-scale joint implementation forest projects currently being implemented by OCIC, including for the first time, the concept of environmental services.<sup>20</sup> The new forestry law contains significant departures from past forest regulation practices. In relation to actual and proposed AIJ or JI initiatives, perhaps the most important are provisions providing for payments to compensate private landowners who protect natural forests for the environmental services<sup>21</sup> that these forests provide, as well as measures to de-regulate production, processing and marketing of trees grown in plantations. Incentives for the provision of environmental services include direct payments, exemption from payment of property taxes, and protection from land invasions through a summary legal procedure to

quickly and efficiently evict squatters.<sup>22</sup> Regarding tree plantations, the new forestry law would treat plantation-grown timber in the same way as any other agricultural product, requiring for the processing and commercialization of this timber a certification of origin.<sup>23</sup> These aspects of the new forestry law will be discussed in greater depth in the discussion of MINAE's PFP, below.

In other ways, Costa Rica's forestry sector is at a critical point, facing opportunities that could greatly increase the contributions of forests to the national economy and elevate their importance in the public eye. For example, a crisis in the cattle industry caused by falling prices and increased competition from imported meat has led to the noticeable abandonment of grazing in many areas of the country, and pastures are giving way to spontaneous regeneration of forest for lack of ready land use alternatives. Owners of small to medium size properties are becoming increasingly involved in forestry and reforestation activities, and have begun to join together to promote their interests in this area. JUNAFORCA, a leading coalition of such landowners, has joined together 67 local organizations to work towards promoting favorable forestry policy. In terms of JI, these circumstances offer the promise of the availability of significant amounts of land for reforestation or forest regeneration, provided that economic incentives are available in the short-to-medium term to help stimulate this activity. Besides, JI offers an opportunity to internalize the costs of other environmental services provided by the forest. While JI could provide the mechanism for such incentives, markets for forest products must also be strengthened to make these activities sustainable. The rise of tourism to become the leading Costa Rican export, and the high level of dependence of this activity on the availability of natural areas and vistas, has also helped contribute to a rise in the value of forested lands, as well as to increase the attractiveness of nature conservation as a use of private lands.<sup>24</sup>

## 2. The National System of Conservation Areas

While facing significant difficulties in the control of deforestation on private lands, the government of Costa Rica has in great measure successfully established an extensive system of protected areas. Throughout the history of the nation, legislation has been enacted seeking to protect important natural resources. The first significant protected natural areas were established in the 1960s, largely the result of initiatives by highly motivated persons or groups both within and outside of government, but with little material or political support. However, by the 1970s environmental conservation consciousness had expanded dramatically, and a significant number of important national parks were legally established throughout the country during this decade. This created the basis for the present protected areas system, although sufficient resources for proper protection and management were still lacking.

The first area to be protected was Cabo Blanco in 1963 as a natural reserve, followed by Santa Rosa and the Poas Volcano, declared as national parks in 1971. By 1977, the legislative Assembly passed the Law for the Creation of the National Parks Service, which created an administrative and legal framework for the management of National Parks, and also established highly restrictive limitations on activities within areas declared to be national parks.<sup>25</sup> While extremely important for the consolidation of the new and growing parks system, the restrictions in this law, which prohibit the undertaking of any commercial activities within park borders, have hampered attempts to make the National Parks economically self-sufficient.<sup>26</sup>

The Forestry Law of 1986<sup>27</sup>, re-enacted in 1990<sup>28</sup> with minor modifications, established much of the basic framework for the present protected areas system. This law created a

number of categories of protected areas, including National Parks, Biological Reserves, National Wildlife Refuges, Forestry Reserves and Protectorate Zones. In so doing, it established what would be a critical distinction between National Parks and Biological Reserves on the one hand, and other categories of protected areas on the other: according to the law, lands within National Parks and Biological Reserves were required to be purchased by the state, while lands within the other categories were permitted to remain in private hands.<sup>29</sup> Partially as a result of this distinction, National Parks and Biological Reserves have been far better managed and protected than other categories, where deforestation has continued. This continues to be a crucial factor in protected areas management in Costa Rica, and for MINAE's JI forest conservation proposal, the PAP.

The division in management criteria for different categories of protected areas was for many years exacerbated by an administrative framework which placed National Parks and Biological Reserves under the control of the National Parks Service, Forestry Reserves and Protectorate Zones under the administration of the Forestry Department, and National Wildlife Refuges under the supervision of the Wildlife Service. The management of different categories of protected areas by different agencies led to wide variation in the ways in which the different categories of resources (e.g. timber and wildlife) were managed, with little consideration for rational management of broader ecosystems. While each of these departments operated within a single ministry,<sup>30</sup> they were highly centralized in offices in San Jose. A lack of cooperation among the agencies resulted in a duplication of work, a waste of resources, and a lack of trust.

Since the late 1980's, Costa Rica has moved towards decentralization of the nation's system of protected areas into regional units called Conservation Areas, which typically include several protected areas of various categories as well as surrounding lands. Similar to the concept of ecosystem management in the United States, the Conservation Areas approach involves the management of different types of areas under a single administrative unit. The National System of Conservation Areas (SINAC) has been formed in the last few years to serve as the single administrative body responsible for the administration of these areas and the application of relevant legislation. The formation of SINAC consolidated the National Parks Service, the National Forestry Department and the Wildlife Service into a single agency. The personnel that previously worked for these different agencies now work together. SINAC has decentralized the organ by opening 11 regional offices for each of the country's Conservation Areas.

The Conservation Areas approach has a number of advantages. The simplified administrative structure and the decentralization of personnel and services saves scarce government resources and increases the capacity of the government to provide technical support in the field, close to managed resources and to affected persons and communities. This approach aims to manage each Conservation Area as an integrated whole, rather than focusing on individual protected areas as it has in the past. Placing different categories of protected areas under the administration of a single administrative unit rather than three separate agencies also helps depoliticize protected areas management and helps assure that all categories receive adequate attention. The Conservation Areas approach also seeks to improve the relationship of governmental authorities with local communities and to improve local attitudes towards protected areas by improving services and making the administration of protected areas more responsive to local needs.

Despite the advantages of the new system, problems remain. A strong legal framework for SINAC does not as yet exist. While a draft law to formalize the reorganization and decentralization of protected areas management was submitted to the Costa Rican Legislative

Assembly in 1991,<sup>31</sup> it has not yet become law. Instead, SINAC has operated under a series of executive decrees which outline its responsibilities and obligations. While these decrees, which do not require the approval of the Legislative Assembly, do lend a legal basis to the activities of SINAC, they can be overturned or altered by subsequent administrations without legislative approval. Other problems facing SINAC include bureaucratic resistance to decentralization and changes in procedures and responsibilities, and lack of personnel and other resources.

Several laws passed in the past few years -- The Organic Law of the Environment,<sup>32</sup> the new Forestry Law,<sup>33</sup> and the Law for Titling of Lands Located in National Reserves<sup>34</sup>-- may have important impacts on the management of protected areas in Costa Rica, as well as on the eventual implementation of MINAE's protected areas II proposal, the PAP. These laws, and in particular their potential impacts on land tenure issues within protected areas, will be discussed in more detail in the discussion of the PAP, below.

As with the forestry sector, biodiversity conservation efforts in Costa Rica must adapt to changing conditions. Perhaps most importantly, restrictions on public expenditures have meant that the hiring and maintenance of personnel by the state to manage protected areas has been strictly curtailed, and public resources for land purchases, equipment, and other expenditures are likewise very limited. These problems have been common for those agencies in charge of forestry and wildlife activities, too. Costa Rica has already gone far towards meeting the challenges posed by these circumstances. For well over a decade the government of Costa Rica has worked closely with non-governmental organizations -- most notably the National Parks Foundation -- to harness private resources to assist in the purchasing of lands for inclusion in the National System of Conservation Areas and in providing management for them. Costa Rican conservationists in both the public and private sector have been highly creative in developing new mechanisms to provide resources for conservation, including leading the world in undertaking debt-for nature swaps, pioneering highly organized efforts to catalogue and discover economic uses for biodiversity, and promoting conservation by private landowners through education, incentives, and legal reform. MINAE is presently exploring the possibility of granting management concessions for selected protected areas to qualified private conservation organizations. The government's promotion and development of II highlights the possibilities that exist for alternatives to the traditional public funding sources for conservation efforts.

### 3. The GRUAS Commission

To provide guidance for forestry and conservation efforts, MINAE convened the GRUAS Commission. GRUAS was a multi-institutional and inter-disciplinary commission created to provide orientation in two areas: first, to promote sustainable forestry and conservation efforts on private lands; and second, to identify priorities for land purchases to assist in the consolidation of SINAC. Using maximization of conservation of biodiversity as its major criteria, GRUAS produced maps identifying lands to be purchased and placed under protection, as well as lands which, remaining under private ownership, should have priority in receiving incentives for conservation or reforestation. The GRUAS Commission also looked closely at the land tenure situation within protected areas.<sup>35</sup> The commission was especially noteworthy because it was broadly participatory. For example, workshops were held including over one-hundred people from both public and private institutions working in conservation. As a result of this work, OCIC has adopted the GRUAS maps and studies as inputs for the PAP. Such an open and participatory approach should be an integral component of any II regime.

## D. Costa Rica's JI Program

Costa Rica has gone far beyond any developing country in its attention to JI. Its activities have included the creation and funding of a specialized office to promote and develop JI both in Costa Rica and in international discussions, acting as host for a larger number of private JI projects than any other developing country, and developing the first comprehensive, nation-wide forestry projects to use JI funding to further its sustainable development goals. Costa Rica promoted the rapid implementation of JI, in contrast to many other developing countries, and fully embraced the pilot phase. This small country has become a laboratory for testing the viability of JI in the field, and its experiences in developing JI projects can inform the design and implementation of future JI regimes in other countries.

The following discussion describes the organization and activities of institutions working in JI projects in Costa Rica, the original pilot JI forest projects developed primarily by private actors, and the evolution of the framework for the nation-wide projects.

### 1. The Creation of the Costa Rican Office for Joint Implementation (OCIC).

OCIC was officially established in September, 1995, by an agreement between MINAE and three private organizations, and by presidential decree in March 1996.<sup>36</sup> The creation of OCIC reflected the status of JI as a priority within the ambitious sustainable development program of the Figueres administration. OCIC is responsible for evaluating AIJ projects proposed to be undertaken in Costa Rica and for seeking their approval by the Secretariat of the UNFCCC. The decree establishes that projects not meeting criteria set forth by OCIC will not be accepted by the Costa Rican government.<sup>37</sup>

The decree creating OCIC established ambitious, broad and far-reaching functions for the office. These functions include:

- “definition of national objectives and goals for the natural resources, energy, transportation and climate change sectors, in regard to joint implementation”
- “definition of national policies, guidelines and procedures for the preparation, evaluation, approval and monitoring of JI projects
- “evaluation and recommendation of approval of projects meeting defined guidelines before MINAE”
- to “analyze, identify and promote, in the public and private sectors, the formulation and execution of [JI] projects”
- to “establish mechanisms to facilitate the marketing of joint implementation projects at the international level”
- to “coordinate actions with the different institutions and organizations realizing activities in joint implementation, both public and private, national and international,”
- to “approve methodologies and mechanisms for the monitoring of [JI] projects to permit the verification of reductions in the levels of emissions and the capture of greenhouse gases.”<sup>38</sup>

This decree also established a body comprised of three non-governmental organizations to provide technical and operational support for OCIC. This body, designated the “Non-Governmental Specialized Technical Sector,” was comprised of the Foundation for the Development of the Central Volcanic Range (FUNDECOR), the Costa Rican Coalition of Development Initiatives (CINDE), and the Foundation for Export Development (FUNDEX). At this time, FUNDEX is not participating in this effort and the Costa Rican Association for

Production of Electricity (ACOPE) has joined this Technical Sector. The decree defines the roles for the three organizations as follows :

- FUNDECOR is responsible for assisting in the development of forest resource inventories and in developing “estimates of storage and fixation rates of biomass and its equivalent in carbon.”
- CINDE is responsible for assisting in the definition of international marketing strategies for JI projects as well as international promotion to attract investment in approved JI projects.<sup>39</sup>
- OCIC itself is divided into three units: the General Coordinator, Administration, and the Technical Consultative Unit.

At the same time that OCIC was formally created, a second decree created the Specific National Fund for the Conservation and Development of Greenhouse Gas Sinks and Depositories.<sup>40</sup> According to the decree, moneys deposited into this Fund will be used for two purposes: first, to undertake small to medium scale forestry and reforestation projects throughout the country, and second, to purchase private in holdings in National Parks and Biological Reserves (these goals have since evolved into the PFP and the PAP proposal). The fund is to be administered by OCIC. The decree specifies that moneys received by the Fund be distributed in the following manner: for those paid to receive credits for “the authorization of forestry incentives or for the compensation of environmental services of forests and forestry plantations,” the funds will be deposited in, and managed by, the National Fund for Forestry Financing (*Fondo Nacional de Financiamiento Forestal* - FONAFIFO). Funds destined for land purchases would be invested in a permanent program for this purpose. The decree also calls for the creation of an international economic mechanism for trading carbon credits, or “Certifiable Tradeable Offsets”.

OCIC is unusual for a governmental office in Costa Rica in that it incorporates private sector and NGOs into the basic structure of the organization and assigns them specific, essential tasks. This type of structure is known as a joint venture because it involves both public and private sectors. This circumstance reflects not only the changing role of governmental agencies in the face of tight public budgets, but also the increasing importance of NGOs and the private sector. Over the past decade, NGOs have worked closely with past and present administrations in the implementation of environmental policies. They are particularly active in the establishment and administration of protected areas, as well as in the growing area of private conservation, biodiversity prospecting and policy making and have participated prominently in forestry policy debates, developing sustainable forestry projects in the field, all areas of particular importance to the emerging Costa Rican JI program. The potential of NGOs and private sector to contribute to the Costa Rican JI program is strengthened by their independence from public budget constraints as well as independence from the cycles of changing governments and their priorities. This growing prominence of NGOs is increasingly apparent not only in the environmental field, but in all areas of public life. OCIC and Costa Rica’s JI program highlight public-private cooperation and adaptability in the face of changing economic forces and political circumstances.

The evolving Costa Rican JI program also involves the participation of other public institutions besides OCIC, MINAE, SINAC and FONAFIFO. This is particularly true of energy projects, that involve the participation and active cooperation of other parties, instead of SINAC, such as the Costa Rican Institute of Electricity (ICE), the National Power and Light Company (CNFL), the Costa Rican Institute of Water and Sewerage (AyA) and local municipalities. At its present stage of implementation, the PFP has included the CNFL as signatory and co-implementor of the agreement for a watershed reforestation and

hydroelectric plant upgrade pilot JI project signed by MINAE with the Government of Norway and a consortium of private Norwegian firms. While difficulties in inter-institutional cooperation between public agencies in Costa Rica have been a problem in the past in other areas -- and this should be closely watched in the development of Costa Rica's JI program -- there have been significant efforts to improve and streamline such cooperation, particularly in the most relevant area of watershed management.

Since the formation of OCIC, the roles of participating institutions have evolved, and other organizations have also become prominent participants. For example, the Earth Council, established in Costa Rica after the 1992 United Nations Earth Summit in Rio de Janeiro in order to monitor progress on the agreements signed at the summit, is an important participant in the PAP, assigned to assist OCIC in marketing projects and identifying and approaching potential investors and contributing the seed capital. While the decree which established OCIC stated that FUNDECOR would be primarily responsible for establishing baselines for determining levels of carbon fixation in JI projects, in practice this role has also been assumed by private project developers. Another example is the participation of the Swiss firm *Société Générale de Surveillance* and of Centre Financial Products in the implementation of the PAP.

## 2. Private JI Forest Initiatives: Phase 1

At this time, more than three years have passed since developing a AII program became one of the priorities of the Figueres administration. To date, the program has passed through two phases and is entering a third.

As noted, OCIC refers to the early pilot JI initiatives developed primarily by private interests in Costa Rica as "First Generation" or "First Phase" AII forest projects. At this time, the promotion of new small private initiatives is not a high priority for OCIC. However, OCIC has worked closely with private project developers and recognized the value of these experiences in the development of its programs. To date, two of the original pilot JI forest projects -- CARFIX and BIODIVERSIFIX -- have been integrated into OCIC's nationwide "umbrella" projects, the PFP and the PAP. Of the other two First Generation pilot JI forest projects, ECOLAND has been substantially completed while KLINKIFIX has received some funds to begin implementation as originally proposed.

To begin discussion of the individual "First Phase" forestry projects, it is useful to point out their most important shared characteristics:

- Each were projects with individual, independent objectives, with no direct relationship to each other;
- The Costa Rican government was to have no direct participation in the eventual implementation of the project (once funds were obtained). Its role was limited to review and approval. Once the project was approved by OCIC, the primary responsibility for obtaining funding for implementation fell to the project developer.
- Each project was to be implemented in a specific geographical site or region within the country clearly identified in the proposal.
- The potential source of funding was any specific company from an Annex 1 country.

The importance of these projects was that they provided Costa Rica and the world with hands-on experience for the pilot phase of JI. In An international crediting system for JI provides the legal incentive for Annex I private sector groups to participate in projects. Costa

Rican authorities have come to the conclusion that in the absence of such a system, high transaction costs will keep small private organizations from obtaining sufficient funding to fully implement projects once they were approved. For example, of the four original projects, only ECOLAND obtained sufficient funds to be implemented. In addition, given the fact that the major objective of the government during the pilot phase was to slow deforestation and promote reforestation, a highly complex, nationwide problem, the government came to the understanding that private, individual AIJ projects could not meet the nation's goals for JI. Another highly significant factor weighing on governmental authorities was the perception that given the small size of the country, smaller individual projects would be less appealing at the international level than larger projects. Important in this consideration was the thought that Costa Rica would be competing with countries with much larger land mass. For these reasons, Costa Rica's program evolved to the nationwide "umbrella" projects. The individual projects are examined first.

#### a. ECOLAND

The Esquinas Carbon Offset Land Purchase Initiative (ECOLAND), was an early pilot JI forest initiative to purchase private lands within the border of Piedras Blancas National Park in southwestern Costa Rica, within the Osa Conservation Area (ACOSA). The project proposed to purchase between 2,000 to 3,200 hectares of the 12,500 hectares in the Piedras Blancas National Park. Before the project began, almost all lands in the park were privately owned. The climate change benefits from the project derived from the fact that these lands were at risk of being logged, releasing the CO<sub>2</sub> contained in the forest into the environment. In addition, the Piedras Blancas National Park is extremely important biologically, an integral part of the most important humid forest on the Pacific side of Central America and part of a proposed trans-isthmus biological corridor. The project proposed that lands be purchased by a Costa Rican NGO and later transferred to the Costa Rican government, represented by MINAE.

Although the lands acquired through the project would ultimately be managed publicly within the legal framework which applies to National Parks, the preparation of the ECOLAND proposal, the raising of funding, and the purchase of lands were all carried out privately. The ECOLAND project was undertaken by a consortium of organizations consisting of Trexler and Associates, Inc., a U.S. based consulting firm specializing in assisting companies in developing strategies for reduction or mitigation of greenhouse gas emissions; Tenaska Washington Partners II, L.A., a U.S. utility company; The National Fish and Wildlife Foundation of Washington, D.C.; the Association for the Conservation and Management of Tropical Forests (COMBOS), a Costa Rican NGO specializing in private conservation initiatives; the Osa Conservation Area (ACOSA), the governmental organization responsible for the eventual management of the area; and Rainforests of the Austrians, an NGO with property in the area.

The ECOLAND project raised \$450,000 from Tenaska, and an additional \$250,000 from the NFWF. This funding was used by COMBOS to purchase 2,200 hectares within the limits of the national park. To date, the lands purchased by the project have yet to be passed to the ownership of the state, although this transfer is expected to occur in the near future. According to project developers, the transfer has yet to be approved by the relevant governmental authorities.

The ECOLAND project, according to its developers, was "designed to protect the carbon storage and sequestration capacity of Piedras Blancas National Park."<sup>41</sup> As such, the project is based on the assumption that lands within the boundaries of the declared park not purchased

and passed to governmental control will be deforested. In the words of the project proposal, “there is no doubt that all primary forest not under a viable protective regime will be lost in the foreseeable future.”<sup>42</sup> Therefore, the carbon benefits of the ECOLAND are based primarily on preventing the release of carbon stored in the mature forests of the Piedras Blancas National Park.

The accuracy of this assumption is difficult to evaluate. Deforestation rates in Costa Rica outside of strictly protected management areas such as National Parks and Biological Reserves have been high, and thus, historically, there is much support for assuming that the forest at Piedras Blancas was in danger. Adding to this threat is the fact that this forest contains much valuable timber. Experience has shown that National Parks and Biological Reserves have been the most successful publicly managed protected areas in the prevention of deforestation. Among the reasons for this have been a requirement that lands in such areas be purchased by the state, as well as very clear prohibitions on extractive activities. Placing these lands in the hands of the state for protection is also the most politically practical solution, avoiding potential problems arising from purchasing large areas of private land with foreign funds and placing them beyond the use of local residents without governmental participation.

However, developments in Costa Rica have shown that approaches to conservation are changing, and that viable and cheaper alternatives to the purchase of lands for protection in National Parks and Biological Reserves may now exist. Among the most interesting developments in this area has been the increase in the number of private nature reserves established throughout the country. Attitudes towards forested lands are changing. In contrast with the situation a decade ago, forested lands today attract higher prices than deforested land. Faced with these facts, new options exist for conservation on private lands. Some landowners might be open to accepting incentives in return for establishing binding limits on the development of their land (this possibility is addressed by MINAE’s PFP, discussed below). In Piedras Blancas, for example, some owners of forested lands along the coast are included within the borders of the park. These land owners were reportedly interested in placing binding conservation easements on their properties rather than face the possibility of being forced to sell their lands. On the other hand, it is important to remember that private conservation is only voluntary, and present or future owners might not be willing to protect forests.

Implementation of ECOLAND has raised issues that need to be addressed in any similar proposal in the future. First, delays in passing ownership of these lands to the state as well as a lack of sufficient funds for management have resulted in lands not receiving adequate protection. In spite of its legal obligation to provide protection, MINAE does not have the resources to provide a sufficient amount of personnel to cover work in the area. Secondly, some lands purchased by ECOLAND are located on peripheral areas of the park, and persons holding lands in more central areas pass through lands purchased by the project, causing managerial difficulties. Furthermore, other public entities are not providing public services to persons living on private in holdings in the park. This causes social and economic problems as well as resentment of the park. Finally, because MINAE cannot enforce national park restrictions on private in holdings, persons on these lands continue to obtain permits to harvest trees.

While some of the problems arising in the implementation of ECOLAND were difficult to foresee, others could have been dealt with in the preparation of the proposal. Most obviously, additional funds should have been included for providing management and control

for lands after their purchase. It is important to point out that this lesson has been well learned, and more recent project proposals include this precaution.

As noted, the implementation of the ECOLAND project has caused some discontent among local residents of the area, mostly among those who did not sell their lands and face certain hardships caused by the inclusion of their lands in a national park. These inconveniences are common whenever these types of land use restrictions are declared, and should not be used as a criticism of JI. The area was declared to be a national park, thus committing the government to the eventual purchase of these lands, before AIJ funding was a realistic possibility. As is the case in most remote areas such as this one, the residents of the area were generally eager to sell their lands and relocate to more convenient sites.

Despite a few problems, ECOLAND has shown some highly positive results. The project purchased lands in one of the most biologically important protected areas in the country. In addition, AIJ funding was supplemented by contributions from more traditional sources of conservation funding to show that this mechanism can be used creatively to leverage scarce funding for conservation.

The ECOLAND proposal left open the possibility that a future phase or phases of the project could be implemented to purchase additional lands in Piedras Blancas National Park. However, at present it seems more likely that any future AIJ or JI investment for the purchase of lands in this area would take place within the framework of MINAE's PAP. The PAP was not in existence at the time that the original ECOLAND proposal was written, but is designed precisely to undertake these types of operations.

## b. KLINKIFIX

This project proposes to test pilot commercial tree plantations on privately owned farms in Costa Rica using the species commonly known as the klinki pine (*Araucaria hunsteini*). According to project developers, the klinki pine is a large species suitable for the production of high-quality wood. This pine is an exotic species in Costa Rica, and thus reforestation with this species appears to present few direct biodiversity benefits<sup>43</sup>. However, availability of trees planted for timber lowers pressure on natural forests and, consequently, natural forests face lower risks. The project proposes to convert between 1,200 to 2,400 ha. of privately owned pasture lands to tree plantations.<sup>44</sup>

The principal project site is the Turrialba Valley in central Costa Rica, although other areas of the country are also suitable for the klinki pine. The project would be managed and monitored by a joint staff including representatives of the Newton Treviso Corp. and the locally based County Agricultural Center of Turrialba (CACTU). This project would provide landowners with technical assistance and financial support to develop klinki tree plantations on land formally used to raise cattle.

Although this was among the earliest AIJ forest projects to be approved by both OCIC and USJI, KLINKIFIX has only recently received partial funding to begin planting. The Klinki project has some 100,000 trees on hand, of which 30,000 must be planted this year to ensure their survival. In the past months, KLINKIFIX has received only some of the funding needed for investment in its reforestation project. The funding strategy followed by the project is to convince households and schools in the United States to offset their greenhouse emissions through investing in the project.

Since the Klinki pine needs 30 to 40 years to reach maturity, the promoters of the project recommend that the reforestation be mixed with other, faster growing species, or with other crops or cattle. The Klinki project signs a contract with the beneficiary, by which the CACTU agrees to provide technical assistance, to provide the necessary klinki trees, and to give the landowner the equivalent of \$500 per hectare or for every thousand trees, distributed in the following manner: 40% the first year, 30% the second, 15% the fourth year, and 5% the fifth. The beneficiary in turn signs a guarantee for an amount equal to that received and for a term of 30 years. In case the landowner sells his property or the part planted with Klinki, he or she must inform CACTU in writing and return the amount of funds received, except in the case where the new owner agrees in writing to continue with the project. The contract signed with the beneficiary cedes the right to carbon fixed by the trees to Reforest the Tropics, Inc., for a term of no less than 40 years.

At present, KLINKIFIX is being undertaken as a private project, independent of MINAE's PFP, although as will be shown, the project has many elements in common with the PFP. One stumbling block for participation in the governmental incentives program under the PFP is that MINAE has not listed the Klinki pine as a species eligible to receive governmental reforestation incentives. In any case, KLINKIFIX's limited geographical scope, relatively small scale, and local administration makes it appropriate to be carried out on a private basis, as OCIC itself recognizes.

The social, political and economic impacts of the project are non-controversial. Being in effect a program to assist small to medium landowners in diversifying production on their lands as well as introducing a long-term earning potential, including distribution of both financial incentives as well as technical assistance and trees, KLINKIFIX should only have a beneficial impact. As the project does not contemplate the relocation of landholders, and might provide some degree of incentive for small farmers to stay on their lands, the project should have a positive impact on the local community.

Being among the earliest projects designed, KLINKIFIX included no formal provisions to protect investors, such as insurance agreements, independent verification or certification. More recent JI projects in Costa Rica, such as the PAP, have included this type of protection. The scheme of payments proposed and the education of landowners about the economic benefits of planting the klinki pine are the most important components of ensuring the project's future implementation and protecting investors. In addition, OCIC would be able to certify the project's credits and grant CTOs.

On the other hand, a matrix was developed and described in the proposal which addresses the issue of expected carbon benefits. It is based on scientific research on the klinki pine carried out for many years by CATIE, a well known graduate school for Central America and the Caribbean in the field of forestry and land based sciences, located in Turrialba. A scientific study of that matrix is beyond the scope of this report. However, CATIE has established a strong reputation on forestry issues, and is well familiar with the klinki, having originally brought the species to Latin America.

### c. BIODIVERSIFIX

BIODIVERSIFIX is among the first pilot JI forest projects designed in Costa Rica. Located in Guanacaste province in the northwest corner of the country, BIODIVERSIFIX proposes to use AIJ funding to regenerate and protect both dry and wet forest in the Guanacaste Conservation

Area (ACG). The project's main objective is to regenerate tropical forest and allow for sustainable use of its products and services without damaging its biodiversity.<sup>45</sup> The ACG protects one of the last few remnants of dry tropical forest in Central America, and its biological importance has made it an international center for studying the ecology of this type of forest.

The ACG is comprised of approximately 120,000 hectares, and includes both dry forest closer to the coast and more humid forests farther inland. As a result, the BIODIVERSIFIX project has two components: DRYFIX and WETFIX. DRYFIX proposes to restore approximately 45,000 ha. of abandoned pastures, fields and very early successional stages to dry forest. Likewise, WETFIX proposes to restore approximately 13,500 ha. of abandoned fields to wet forest. The project proposes to purchase private lands located in the national parks of the conservation area in order to promote eco-tourism, biodiversity prospecting and limited sustainable forestry practices. BIODIVERSIFIX has not received funding for its implementation and more recently it has been officially included under the PAP.

This project proposal was developed by the personnel of the ACG, including Dr. Daniel Janzen, a noted biologist who has worked in the area for over 20 years. The ACG has developed a comprehensive approach to increase the sustainability of the ACG, and JI is seen simply as another source of funding for the continuation of ongoing work. In an interview, Dr. Janzen stressed that the sustainability of the project is based on the strength of the "biodiversity industry" created by activities in the conservation area. As Dr. Janzen pointed out, the creation of jobs providing sufficient income for locals, as well as benefits obtained from biodiversity prospecting and tourism, represent the best protection that investors could obtain for their participation in the project.

Purchasing lands in the ACG will displace few local people, mainly because the area where the park is located and its surrounding areas has been largely vacated by locals. A recession caused by low beef prices, resulting in a general willingness to sell lands to the ACG, led to the abandoning of cattle ranches in the area. Just like other parks in the world, the ACG faced local opposition to some of its policies, such as land use restrictions or control over hunting, when it began to implement its work in the area about 20 years ago. However, in recent years this opposition has been generally replaced by strong support for the ACG and its plans for the future.

BIODIVERSIFIX included in its budget solid financial support to carry out monitoring and enforcement activities through official authorities under SINAC. Regular park management costs were also included. Provisions for carbon credits were not defined in the proposal as they to have been when funding sources were identified.

As was stated before, BIODIVERSIFIX has now been included under the PAP. For this reason, its future implementation is linked to the future of that project.

#### d. CARFIX

This project proposes "to stabilize the existing natural forest, and create additional forest cover"<sup>46</sup> in the Central Volcanic Mountain Range Conservation Area (ACCVC). Most of this area is covered with tall, dense, biologically rich evergreen forest. The activities to be implemented include natural forest regeneration (10,670 ha.), sustainable management of natural forests (20,502 ha.) and tree plantations (5,533 ha.), with the goal of conserving the existing carbon sinks and increase carbon sequestration in the conservation area. The project

also proposes to undertake some activities needed to purchase lands located in the national parks of the conservation area.

The project, to be implemented by FUNDECOR, a Costa Rican NGO, and the governmental office of the ACCVC, had two main components: to provide technical assistance to local private landowners to engage them in sustainable forestry practices and to provide economic incentives for local landowners while engaged in medium-to-long term forestry practices. CARFIX has been seen as an additional source of funding for the activities that FUNDECOR had already planned and has been implementing for several years for the protection and sustainable management of the conservation area.

Even though both MINAE and USIJI approved the CARFIX proposal, the project did not receive funds to be implemented as a private project. However, it has obtained funding through the PFP, as it has been incorporated in that larger proposal. As FUNDECOR is one of the NGOs officially represented in OCIC, CARFIX's model has been the basis for the design of the national level projects known as the Umbrella Projects.

It is important to stress that scientific research to understand the behavior of both native and non-indigenous tree plantations has been rare in Central America. Only recently have these types of research studies been undertaken. FUNDECOR, since its creation in the early 90's, has carried out scientific forestry research in the ACCVC to address the shortage of information and thereby support its work. Even though independent verification of the project's baseline was not considered in the proposal, estimates used for the determination of the baseline is strongly supported by FUNDECOR's scientific work. Likewise, past and expected deforestation rates used in determination of the projects' baseline were calculated based on field work and Landsat satellite images from previous years.

Purchasing lands in the parks of the ACCVC with payments for environmental services to private landowners increases the protection of the parks and at the same time increases the benefits for environmental services derived from the ACCVC. For example, pasture lands in the ACCVC are no longer profitable for cattle grazing. Therefore, activities related to forest use and tree plantations are more profitable and increase the economic incentive for engaging in these activities. For this reason, local landowners become increasingly interested in participating in the project, and it has become an additional source of income and jobs for the region. Furthermore, tourism in the region creates further incentives for forest protection and sustainable use of the resources in the project area.

FUNDECOR is working closely with SINAC, and provides strong financial support for SINAC's activities in the ACCVC. As proposed by the CARFIX project, monitoring and enforcement activities in the area are carried out jointly by SINAC and FUNDECOR. Satellite images and data have already been used by FUNDECOR to assess forest cover in the ACCVC, and will be used to monitor the implementation of carbon sequestration activities. In order to avoid the perverse incentive for landowners to clear cut natural forests and get credit for the planting trees under JI, FUNDECOR will give payments only to landowners whose land was not covered by natural forest in 1990. Through aerial photos and satellite images FUNDECOR can verify which landowners qualify to obtain payments.

Another practice that FUNDECOR is utilizing to increase the long term success of the activities proposed in CARFIX is to purchase timber in advance, years before the trees are harvested. Through this mechanism, FUNDECOR pays landowners a percentage of the predicted market value of the timber that will be eventually harvested. With this source of

income, landowners will have an annual flow of cash to cover short term needs, thus making it easier for them to participate in the project until mature trees can be harvested and the best market values can be obtained for them.

As was stated earlier, CARFIX became the model for the PFP. At this time, CARFIX has been included in both of the “Umbrella” proposals, and for this reason many of the issues related to CARFIX can be best explained within the framework of those larger proposals.

### 3. Public and Public-Private Initiatives: “Umbrella Projects” of Phases 2 and 3

OCIC and MINAE have developed two new major initiatives to develop, market and implement nation-wide AIJ land use and carbon sequestration projects, which it describes as the second and third generations of AIJ projects in Costa Rica, and has touted these initiatives as potential models for other countries.<sup>47</sup> These proposals were dubbed the “umbrella proposals” because they sought to provide an over-arching, nation-wide framework under which all AIJ forest projects could be implemented.

The first of these is the establishment of a program of incentives to stimulate reforestation, forest management and the conservation of forests on private lands. The second is a proposal to use joint implementation funding to consolidate the nation’s protected natural areas system, based on the recommendations of the GRUAS commission and the administrations of local conservation areas. This proposal follows a “commodity” approach, proposing to sell CTOs as commodities in order to obtain funding. Both of these projects will be financed in large part through the issuance of “Certified Tradeable Offsets” (CTOs) to AIJ or JI investors. While OCIC considers the umbrella projects the preferred way to undertake AIJ or JI projects, it remains open to reviewing privately developed and implemented projects as well.<sup>48</sup>

These second and third phase projects share the following characteristics:

- Given their size, these projects reduce transaction costs when compared with smaller individual projects;
- These project proposals and the sale of CTOs are not tied to specific, identified project sites or specific parcels of land identified beforehand. However, during the implementation of the project, funds received will be used for specific activities on specified lands.
- These projects have a larger social impact because even small land owners throughout the country can participate in the project.

#### a. Certified Tradeable Offsets (CTOs)

OCIC defines Certified Tradeable Offsets (CTOs) as a specific number of units of greenhouse gas emissions reduced or sequestered in which all phases of the JI project in the host country have already been completed, and in which the “without project baseline” has already been certified by both the home and host country governments. The home country verification would certify that the offsets are of a high enough quality to allow them to count against national and firm-level greenhouse gas commitments, if such crediting is permitted under the Framework Convention on Climate Change.<sup>49</sup> Though this report is concerned mainly with forest projects, CTOs can be applied to energy projects as well.

OCIC stresses that CTOs are verifiable by the “home” government. OCIC points out that the condition of a forest preservation project, for example, can be verified through the use of satellite images and field work.<sup>50</sup> The same would hold true for plantation-type reforestation projects.

As OCIC points out, CTOs offer significant advantages to investors, perhaps the greatest of which is convenience. Details of project development and proposal approval would not need to involve the investor, who would simply purchase the CTOs. Another advantage is security. For example, CTOs from the PAP will be certified by SGS, and CTOs from the PFP would only be issued where “all phases of the JI project in the host country have already been completed.”<sup>51</sup>

OCIC had set a price for CTOs from the PFP of \$10 per ton of carbon in their negotiation with the Norwegians.<sup>52</sup> The first portion of CTOs from the PAP will be offered for sale by Centre Financial Products in February, 1998, at an estimated price of \$20 per ton of carbon.

#### b. Phase 1: The Private Forestry Project (PFP)

The Private Forestry Project (PFP) is an initiative that uses payments for environmental services described in the Forestry Law to promote tree plantations, conservation and sustainable management of natural forest in priority buffer areas of the National System of Conservation Areas identified by the GRUAS Commission. These activities are supported by AII funding of the Norwegian government, and revenue collected from local gas taxes in the funding country. This project and its framework are clearly set forth in existing forestry legislation and in a project approved by OCIC and Norway called “reforestation and forest conservation AII pilot project”. Through this specific project, funds from the Government and private sector of Norway will become the first international source of funding for the Costa Rican program called Forestry Environmental Services Payment (FESP).

Under this mechanism private landowners in Costa Rica would receive FESPs and the AII investor would receive an equivalent quantity of CTOs according to its investment. As stated, this project gained the initial framework from what is known as the Private Forestry Proposal (PFP).

Funding received from AII or JI investors through the purchase of CTOs is integrated into the Specific Fund for the Conservation and Development of Greenhouse Gas Sinks and Depositories, where they would be destined for either the PAP or for the PFP. Funds directed to the PFP are transferred to the National Fund for Forestry Financing (FONAFIFO), established by the Forestry Law to provide incentives to small and medium landowners for forest conservation and reforestation activities once OCIC has verified the information provided by FONAFIFO. Once under the control of FONAFIFO, funds are transferred to landowners as payments for environmental services through means of contracts.

The Forestry Environmental Services Payments created by the Forestry Law and its regulations grants approximately US\$505 per hectare to tree plantations (through a certificate called CAF and another one called CAFA), US\$337 per hectare to forest management practices (through a certificate called CAFMA) and US\$210 per hectare to forest conservation (through a certificate called CCB). The government gives these payments to private landowners over a period of 5 years. In the first year the payment is for 50% of the total, in the second year 20%, then 15%, 10% and in the fifth year 5%. For 1997 the program states that a maximum of 14,000 hectares of tree plantations, 7,000 hectares of commercial forest and 50,000 of natural

forest for conservation purposes would receive the payment. Approximately US\$7.5 million from Costa Rica's tax on gasoline will be used to make these payments. A legally binding contract is signed between the government and the landowners when making these payments. All these contracts had to be signed before the end of this year and they will have to be inscribed at the Public Registry before the second payment is made. For 1997 all recipients of these payments have been selected. Applications submitted in 1997 could obtain these payments next year.

In addition to those payments, there are other incentives in the new Forestry Law such as special legal protection against squatters and some tax exemptions. It is important to point out that those payments mentioned in the previous paragraph are given only over a period of five years and for this reason the government is purchasing just those credits accruing over this same period of time. If the government desires to purchase credits available after the initial period of five years, it will have to pay for them. A description of those payments and other incentives is given below.

### FESP for Tree Plantations

Landowners involved in tree plantations can apply to obtain payments for the environmental services that their tree plantations provide. These payments for environmental services are:

- CAF - Forestry Investment Certificates (Certificado de Abono Forestal) are payment for environmental services. They are given to landowners who have a management plan for planting trees in an area of at least 1 hectare. For 1997 this payment was ¢120,000 per hectare (approximately US\$505), given to land owners over a period of five years.
- CAFA - In Advance Forestry Investment Certificate (Certificado de Abono Forestal por Adelantado) is given as payment for environmental services given by tree plantation projects covering an area of 1 to 10 hectares per landowner. For 1997 this payment was ¢120,000 per hectare (approximately US\$505). The difference between the CAFA and the CAF is that the CAFA is for small landowners in need of funds for their own activities and short term needs.

To receive either a CAFA or a CAF, landowners are required to sign a legally binding contract inscribed in the Public Property Registry. Registration ensures that others know that there is a land use restriction on that specific piece of land. At this time, the government is signing these contracts with private landowners and notaries have been contracted to inscribe them in the Registry. When receiving these incentives, landowners are required to grant or concede the carbon credits from their property to the government. For 1997 all recipients of these payments have been already selected. Applications submitted in 1997 could obtain these payments next year.

### FESP for Forest Management (CAFMA)

The new Forestry Law allows those involved in sustainable forestry practices to apply for and receive payments called Natural Forest Management Certificates (CAFMA) for the environmental services provided by their forests. To receive CAFMAs, owners must use their forest according to an approved management plan. CAFMAs are approved for landowners with a minimum of 2 hectares and a maximum of 300 hectares per property or adjacent properties of the same owner. For 1997 this payment was ¢80.225 per hectare (approximately US\$337).

## FESP for Forest Conservation and Restoration of Degraded Lands Suitable for Forest (CCB)

Those preserving natural forests that have not been used at least for two years and those landowners restoring degraded lands can obtain payments for environmental services called Forest Protection Certificates (CCBs).

\_\_\_\_\_ CCBs are payments for environmental services given to landowners preserving their natural forests and for those preserving degraded lands who own an area between 2 and 300 hectares. For 1997 this payment is ₡ 50.000 per hectare (approximately \$210).

Landowners receiving FESP must sign contracts with MINAE requiring the landowners to commit to conservation or reforestation activities for a period of 15 years, specifying that all carbon sequestration credits are to accrue to MINAE. The contracts specify that if the land owners sells his or her land the payments received must be returned to the government unless the new landowner agrees to accept the terms of the contract.<sup>53</sup> The contracts are filed in the land registry. These contracts pose a potential problem in that the contract does not bind subsequent landowners to accept the terms of the contract in the case that a property is sold, and difficulties might arise in collecting incentives already paid out. In addition, given the fact that these contracts are new, FONAFIFO has also reportedly faced some problems in having these contracts accepted for inscription in the National Property Registry. A useful alternative could be the signing of contracts which are binding on future landholders such as easements.

FONAFIFO is governed by a Board of Directors consisting of two representatives of the Private Sector, one a representative of the organizations representing small and medium land owners, and the other a representative of the forest industry; and three representatives of the public sector, one from MINAE, a second from the Ministry of Agriculture and a third from the National Banking System. The Board of Directors have broad powers to manage the fund.

A brief description of the Private Forestry Project which appeared in “Joint Implementation Quarterly” describes the role of FONAFIFO in the Private Forestry Project as follows: “FONAFIFO acts more or less as the project developer ... that receives the JI investments for reforestation and forest management projects executed by medium and small landholders throughout Costa Rica. As such, FONAFIFO functions as the administrator and financing agent in the PFP.”<sup>54</sup> While OCIC stresses that “the PFP would increase the accountability of the existing infrastructure by opening it to third party verification,”<sup>55</sup> no mechanism for such third party verification appears in the relevant legislation. As it stands, however, control over the contracts would rest primarily with MINAE, as well as with the private forester responsible for the preparation and operation of the respective management plans.

Options for improving control over enforcement of the contracts would include requiring certification of compliance by means of third party verifier (i.e. NGOs experienced in forestry certification, etc). However, the fact that the project is directed at small and medium sized landholders might make these potential solutions financially impractical unless funding is provided through the project for this function. While these potential options are not mentioned in the legal framework, OCIC has said that MINAE could consider subcontracting private sector organizations to assist in control activities.<sup>56</sup>

The PFP establishes carbon baselines based on sequestration for reforestation activities and prevention of release of stored carbon and sequestration for conservation activities and

regeneration of natural forest. As implied, the accuracy of carbon baselines established by the PFP would rely heavily on verification procedures adopted by the project.

There is a much greater demand in Costa Rica for incentives under the PFP than available funding. This circumstance implies that there are a great number of landowners willing to reforest or conserve forests on their lands, provided that adequate incentives are available.

Indeed, private conservation is already a rapidly growing land use, with over 200 private landowners referring to their properties as private conservation reserves. Although the expansion of eco-tourism in Costa Rica over the past decade has made a number of such reserves presently viable as economic enterprises, conversations with landowners indicate that much land is being placed or held in conservation in hopes of eventually receiving economic incentives, developing economic uses for the land while conserving the forest, or simply out of a desire to conserve natural resources. Reported declines in the profitability of alternative land uses such as cattle raising also plays a role in the high demand for assistance in conservation and reforestation. Reforestation can be a highly viable economic land use for many areas of Costa Rica, but without cash incentives this is a long-term investment beyond the reach of many small and medium-sized landowners.

The relatively high demand for incentives and the fact that some landowners appear to be voluntarily protecting their lands will raise the issue of whether the PFP is additional -- that is, whether conservation and reforestation, and thus carbon sequestration and storage, would occur without AIJ or JI funding. For example, attitudes of landowners in favor of forest conservation and reforestation do appear to be changing. However, such attitudes are highly difficult to quantify. It is also extremely difficult to determine to what extent these changes are dependent on the prospect of AIJ or JI funding to support these activities, or on the international prices of other products such as beef and grain. The additionality question regarding the PFP is perhaps best illustrated in the context of a fortunate confluence where local economic conditions, global climate policies providing needed funding for programs in developing countries, and a responsive local government program promote environmentally beneficial activities.

As in the case of the KLINKIFIX project, the economic and social impacts of the PFP are non-controversial. The program exists to assist small to medium size landowners in diversifying the uses of their lands, and to make these uses more compatible with the natural capacity of the land. The PFP would not result in involuntary displacement of landowners, although the program, if fully operational, would probably stimulate the market and raise prices for private forested lands. The PFP would also result in making forestry activities more sustainable and profitable.

This project has received the approval from the governments of Norway and Costa Rica and has been reported to the UNFCCC Secretariat. At this time, the project is implemented and partial funding for it has already been received by Costa Rica. Accordingly, the Norwegians have received CTOs representing 200,000 metric tons of carbon, for their investment.

### c. Phase 3: The Protected Areas Project (PAP)

The PAP is a proposal to strengthen the National System of Conservation Areas (SINAC) by using AIJ or JI funding obtained through the sale of CTOs to purchase lands and settle land claims in National Parks and Biological Reserves. Land tenure would be consolidated in the

hands of the government and funding would accrue to support conservation efforts and programs in these protected areas. The PAP project will follow the recommendations of the GRUAS Commission to place under strict protection those lands necessary to protect an estimated 90% of Costa Rica's biodiversity. The project proposal claims both carbon sequestration offsets for regeneration of natural forest in these areas, as well as offsets for preventing deforestation of threatened areas within these lands. BIODIVERSIFIX, an early AII forest project to purchase lands within the Guanacaste Conservation Area, has been integrated into the PAP. The national park component of CARFIX has also been integrated into the PAP.

This project will be implemented throughout the country given the fact that most protected areas in Costa Rica are subject to this project. "The intention of this project is to finance all the necessary activities to transfer to MINAE a total of 555,052 ha. corresponding to the lands in the national parks and those biological reserves that have been declared" as such but that have not been registered in the National Property Registry as part of the Forest Patrimony of the State. Since 24,554 ha in those protected areas are under other uses they have been excluded and the area subject to claim is 530,498 ha.<sup>57</sup>

In order to understand the PAP, a familiarity with the legal issues affecting land tenure in the areas affected by the proposal is essential. Rural lands in Costa Rica have been occupied and claimed in a haphazard manner, with little systematic organization and partition of the national territory. Claims on lands have been established through a variety of forms, including active settlement and farming of lands, land grants by the state, distribution through agrarian reform programs, the claiming of community property rights by indigenous groups, through exploitation of logging or mining claims, or through the buying and selling of these claims. In a typical case, rural settlers will clear land and plant a portion of it with crops or pasture, and under Costa Rican law the possessor of the lands gains property rights after a period of ten years. While this property right can be converted to legal title through a court procedure, often this is not done, and land in such rural areas can be and usually is held under a variety of indicators of legal rights in the land, ranging from legal title to a registered survey, to an informal map, or to statements given by neighbors. In these situations, there is often little precision as to property boundaries and conflicting or overlapping claims often exist. While the Costa Rican government claims title to unoccupied lands as national reserves, in practice there are few lands in Costa Rica that are not affected by private claims.

This sometimes chaotic land tenure situation is typical for most of the areas declared to be National Parks or Biological Reserves in Costa Rica, and the declaration of such an area is the beginning of a long process of identifying and mapping claims, negotiating settlements with owners, and inscribing and passing legal title to the state. While in some protected areas ownership interests are well established, in others much work remains to be done. OCIC's PAP proposal, in fact, estimates that only 5% of the lands in National Parks and Biological Reserves are titled as such in the name of the government. In a number of protected areas, some lands have been purchased for conservation purposes by an NGO (as in the ECOLAND project), and are simply awaiting transfer to the government. In other cases, lands are legally held by government institutions other than SINAC, and agreements for their transfer must be reached.

In essence, the PAP proposes to use AII and JI funding to undertake the work necessary to settle legal claims in National Parks and Biological Reserves, to title these lands in the name of MINAE, and to provide protection. In this way these lands would be included as a part of the natural patrimony of the State. While the baseline of the project is based on the carbon sequestration and emissions potential of lands within these areas, much of the actual costs of the project will be determined in the settlement of legal claims to lands. MINAE proposes to

use AIJ and JI funding through the PAP to settle the clearest and least costly claims first, eventually reaching more difficult and costly situations. Investments in the PAP should thus be made with a clear understanding that some costs of the project may involve addressing legal issues that are complex and often difficult and expensive to resolve. MINAE should ensure that land tenure records for lands within National Parks and Biological Reserves are well organized and accessible to the public.

An advantage of smaller-scale protected areas projects (such as ECOLAND or BIODIVERSIFIX in its original form) that target specific lands is that it is easier to determine and demonstrate the actual costs of acquiring lands than would be the case with a nation-wide proposal such as the PAP. In Guanacaste, for example, where land settlement patterns have tended towards the establishment of large cattle ranches over many years, the land tenure situation is much simpler than in other parts of the country.

In the third phase of Costa Rica's AIJ program, land tenure has been considered to define priorities related to the selection of lands to be purchased. Those lands where less land tenure problems exist (or are nonexistent) are coming first on the list, leaving those with more problems last. This is not necessarily a bad outcome, however. It seems better that land purchase is allowed to go ahead, even though the most intractable land tenure problems will be left until last. Otherwise, the start of the PAP would be delayed by lengthy court proceedings covering difficult land tenure problems, with climate benefits similarly delayed.

The PAP raises a question regarding additionality -- that is, whether the proposed project would occur without JI -- in that the Organic Law of the Environment requires that private lands in National Parks and Biological Reserves be purchased by the State.<sup>58</sup> The same article of the law provides "private properties affected ... by being located in national parks, biological reserves and national wildlife refuges, shall only be included within the State [Protected Area] from the moment that payment or expropriation has legally been made..."<sup>59</sup> Costa Rican conservationists have pointed out that the longstanding presence of private lands within National Parks and Biological Reserves due to lack of funds, despite the existence over many years of legal requirements that they be purchased,<sup>60</sup> amply demonstrates that there is a need for JI funding to accomplish this. There are also some rulings from the Supreme Court requiring the Government to expropriate those lands located in national parks and biological reserves, of course making the correspondent payments to private land owners.

The obligation of the government to purchase those lands derives from a Supreme Court ruling stating that the government has to compensate individuals whose lands are affected by highly restrictive environmental regulations, such as those in national parks and biological reserves, where no economic activity by private landowners is allowed. If the government does not do so the Supreme Court stated that it would be violating private ownership rights stated in Article 45 of the Costa Rican Constitution<sup>61</sup>. This interpretation of the Supreme Court has been included in laws that were passed after that ruling, such as the Law of the Environment and the new Forestry Law.

As a consequence of that legal framework, the Costa Rican government has to purchase large amounts of land within the Conservation Areas to be able to enforce the existing regulations. This is one of the reasons why the conservation areas have a strong interest in purchasing private lands in national parks and biological reserves and why the PAP also proposes this.

As with the PFP, the issue of additionality with regard to the PAP points out some of the difficulties with this concept when applied to concrete projects in developing countries. According to most commentators on this subject, the requirement that these lands be purchased would signify that the use of JI funds to purchase private lands within National Parks and Biological Reserves would not be additional, and that such a project should therefore not be considered for AIJ or JI funding. For years the government of Costa Rica and national and international conservation organizations have carried on an important struggle in the face of great odds and with few funds to establish a National Parks System that has become a model for developing nations. If the PAP is considered by some people as not additional, this would mean that Costa Rica could not use AIJ or JI funds in order to purchase the private holdings, that have been one of the greatest threats of deforestation of these areas. Other countries also have legal requirements that the state purchase lands in protected areas, and would face this issue in similar proposals to consolidate ownership through AIJ or JI.

The social and economic impacts of the PAP are essentially those of the Costa Rican SINAC. In many cases, the establishment of strictly protected areas does result in the displacement of persons seeking to farm or undertake other activities in these areas. The PAP, to the extent that it provides funds to purchase lands in National Parks and Biological Reserves, will accelerate this process. However, the SINAC is the result of a well-considered and established governmental policy developed over a period of over twenty years and promoted by governments representing both major Costa Rican political parties. These policies have only recently been affected by discussions regarding the possibilities for funding for SINAC through AIJ or JI. As is apparent in national legislation and in numerous statements, including the national plan of environmental policy recently published<sup>62</sup>, the government of Costa Rica has determined that investment in biodiversity conservation should be a major component of its broader sustainable development program. While impacts on local communities are inevitable, the government has chosen to address this issue as part of its broader development policies, within the context of a modern state with a mobile population.

The issue of leakage -- whether the implementation of the project would have unintended or unforeseen impacts in other areas -- is often raised in connection with land conservation AIJ or JI projects. This concern responds to the fear that persons whose lands are purchased for conservation in one area will migrate to other forested areas and seek either to deforest these lands or sell them to the state for conservation. While at one time this would have posed a very valid concern in Costa Rica, in recent years this possibility should cause less worry for several reasons. First, there is little land available for settlement. As noted, almost all lands in Costa Rica are subject to legal claims, and such claims would have to be bought. Second, forested lands are now selling for a higher price than deforested lands, and there would be little incentive for persons primarily interested in agriculture to purchase claims to forested lands. Third, many forested lands are already dedicated to conservation or forestry management regimes, either in state protected areas or on private property. Furthermore, MINAE considers that the PFP addresses any possibility of leakage under the PAP by the fact it provides a framework for sustainable forestry practices on private lands throughout the country.

On the other hand, just as in any other country, proper management of a protected area requires not only an appropriate legal and institutional framework but also sufficient funds. Salaries, transportation, equipment, facilities, and maintenance, to name the most important, are expensive. In Costa Rica, some of the protected areas have good earnings for the services provided, and in some cases they have a strong support from environmental NGOs,

but for the most part they still depend on the government's general budget and most of the time receive a less than they need to comply with their legal mandate.

At this time, due to policies being implemented by the government to reduce its size and to control the internal deficit, SINAC seems to be facing a difficult time accomplishing its duties both as the agency in charge of Costa Rica's protected areas and as the agency in charge of controlling forestry and wildlife activities. Vacant positions are almost impossible to fill and personnel in the different conservation areas is scarce. Parks are difficult to patrol, and the area of the parks is quite large for the few personnel available. Park rangers usually work on a fixed schedule of 20 days on duty and 10 holidays, so the administration of the area has to rotate them and try to get the most out of their time. As a result, personnel are sent to those parks that are facing the greatest threats. Other parks, including some national parks, only have the resources to afford one guard for the entire territory.

Furthermore, professional personnel are greatly needed in some conservation areas, specifically in areas far from the capital city, San José. As an example, the Osa Conservation Area does not have a staff biologist on-site, despite the great importance of the biodiversity in that area of the country and the numerous scientists and investigators that visit the area.

This situation represents a very important threat to the protection of the natural resources in Costa Rica's protected areas and forested lands, and specifically to the consolidation of the conservation areas as a new concept in public protection of biodiversity. It also represents the major threat to the successful implementation of the PAP.

During the first phase of Costa Rica's AIJ program, funding obtained from investors for some of the projects would be used to implement the project but not to support SINAC's capacity sufficiently. However, some of the projects did include a breakdown of the budget that specifically considered the cost of monitoring and enforcement by SINAC. More recently, both the PAP and the PFP are proposing to use a significant portion of the funds obtained from investors to support the work that MINAE has to do, through the creation of a trust fund, and in this way increase the monitoring and enforcement capacity of this entity. Only if funds are sufficient to support the agency in charge of environmental law enforcement and monitoring will forestry projects be successfully implemented. Costa Rica's program has identified this issue and it has addressed it in its current AIJ program. However, it is too early to make any judgement about how this support will be implemented. In addition, the PAP would provide funding for the creation of the Earth Center, a part of the Earth Council, which will implement different programs for the sustainable development of Costa Rica.

## Endnotes

<sup>1</sup> During the present pilot phase, joint implementation projects are officially termed “Activities Implemented Jointly”.

<sup>2</sup> Interview with Franz Tattenbach, National Coordinator, OCIC, September 20, 1996.

<sup>3</sup> Ibid.

<sup>4</sup> Interview with Dr. Daniel Janzen, Santa Rosa National Park, June, 1997.

<sup>5</sup> Ibid.

<sup>6</sup> Land Use capacity studies have shown that 64% of the national territory should remain under forest cover, with 34.9% of the national territory suitable for sustainable forestry practices while 29% should be protected. Carlos Quesada Mateo, *Estrategia de Conservación para el Desarrollo Sostenible de Costa Rica* (ECODES) Ministerio de Recursos Naturales, Energía y Minas, San José: Servicios Litográficos, 1990. p. 44. At the same time, 46% of the national territory is presently used for cattle pasture while only 20% of the territory has this potential. Centro Internacional en Política Económica para el Desarrollo Sostenible (CINTERPEDS), Universidad Nacional, *Políticas del Sector Forestal en Costa Rica*, Heredia, May, 1996, p. 14.

<sup>7</sup> Law N° 7414, published on June 4, 1994.

<sup>8</sup> “Letter of Intention for Sustainable Development, Cooperation, and Joint Implementation of Measures to Avoid Greenhouse Gas Emissions,” Washington, D.C., September 30, 1994.

<sup>9</sup> “Memorandum of Understanding Between the Costa Rican Ministry of Environment and Energy, the Royal Norwegian Ministry of Foreign Affairs, the National Power and Light Company of Costa Rica, and *Consortio Noruego*,” San José, July 2, 1996.

<sup>10</sup> “National Proposal for the Territorial Consolidation of Costa Rican National Parks and Biological Reserves as Carbon Deposits within the Framework of Activities Implemented Jointly,” San José, Costa Rica and, SGS. Certification of “The Protected Area Project” (PAP) in Costa Rica for OCIC (the Costa Rican Office for Joint Implementation) Executive Summary. Carbon Offset Verification Report, 01.12.1997.

<sup>11</sup> Centro Científico Tropical. Valoración de los Servicios Ambientales de los Bosques de Costa Rica. San José. CCT. p. 7 y, Centro Científico Tropical y World Resources Institute. La depreciación de los recursos naturales en Costa Rica y su relación con el sistema de cuentas nacionales. Washington D.C. WRI.

<sup>12</sup> Until very recently, forest was considered an obstacle to farming and as a matter of fact, cutting down trees was the most common way of proving possession of a property to claim land title.

<sup>13</sup> Between 1975 and 1995, 388,046 hectares were occupied and 165,749 hectares were given by the government under these programs which mostly resulted in loss of natural forest. Centro Internacional en Política Económica para el Desarrollo Sostenible (CINTERPEDS) Universidad Nacional POLITICAS DEL SECTOR FORESTAL EN COSTA RICA, Heredia, May, 1996, p. 17.

<sup>14</sup> It is estimated that during the 1960s and 1970s, 55,000 hectares of forest were incorporated into agricultural or cattle grazing activities every year.

<sup>15</sup> Wallace, David Rains. *The Quetzal and the Macaw. The story of Costa Rica’s national parks.* Sierra Club Books. San Francisco. 1992. p. 11

<sup>16</sup> MINAE, “Propuesta Técnica de Extensión Territorial del Sistema Nacional de Areas de Conservación” 1995, p. 3.

<sup>17</sup> This incentive became convenient only for wealthy land holders because they were the only ones that had to pay this tax.

<sup>18</sup> National Assembly of the Republic of Costa Rica, *Ley Forestal*, Law No. 7032 published on May 7, 1986, reformed by Law No. 7174 published on June 28, 1990.

<sup>19</sup> ECODES, Op Cit., p. 46

<sup>20</sup> Ley Forestal No.7575, February 5, 1996.

<sup>21</sup> Article 3 of the new Forestry Law defines these environmental services as those that are given by forest and tree plantations and that have a direct effect in the protection and improvement of environmental conditions. They include offset of greenhouse gases emissions, protection of water, protection of biodiversity (to preserve it and for scientific or pharmaceutical purposes), protection of ecosystems, life forms and scenic places (for scientific or recreational purposes).

<sup>22</sup> *Ley Forestal*, Op cit., Articles 22, 23, 24.

<sup>23</sup> Ibid., Articles 28 and 31.

<sup>24</sup> To date, over 200 landowners throughout the country have established what they have described as private nature reserves, while some of these have taken the further step of inscribing their properties as Private

National Wildlife Refuges, for which they receive recognition from MINAE as well as tax breaks. This possibility is provided for by the Wildlife Law N° 7317, from October 21, 1992.

<sup>25</sup> National Assembly of the Republic of Costa Rica, *Ley de Creación del Servicio de Parques Nacionales*, Law No. 6084 published on August 17, 1977.

<sup>26</sup> An interpretation of more recent legislation such as the General Law of the Environment provides a legal basis for the economic sustainable use of all protected areas in Costa Rica.

<sup>27</sup> National Assembly of the Republic of Costa Rica, *Ley Forestal*, Law No. 7032 published on May 7, 1986.

<sup>28</sup> National Assembly of the Republic of Costa Rica, *Ley Forestal*, Law No. 7174 published on June 28, 1990.

<sup>29</sup> Lands in national parks and biological reserves have to be purchased by the State to provide absolute protection but in other protected areas economic activities can take place while protecting the area's natural resources.

<sup>30</sup> At the outset, these agencies were a part of the Ministry of Agriculture and Ranching, later of the Ministry of Natural Resources, Energy and Mines, and, at present, of MINAE.

<sup>31</sup> Bill #11.315, published on August 8, 1991.

<sup>32</sup> National Assembly of Costa Rica, *Ley Organica del Ambiente*, Law No. 7554 published on November 13, 1995.

<sup>33</sup> *Ley Forestal*, Op cit, note 13.

<sup>34</sup> National Assembly of the Republic of Costa Rica, *Titulación de Tierras Ubicadas en Reservas Nacionales*, Law No. 7579, published on August 9, 1996.

<sup>35</sup> MINAE, National System of Conservation Areas, *Situación de Tenencia de la Tierra en las Areas Sivistres Protegidas del País*, Proyectos Gruas, January, 1996

<sup>36</sup> Decree No. 25066-MINAE, March 21, 1996, published in *La Gaceta* No. 76, April 22, 1996.

<sup>37</sup> *Ibid.* Article 16.

<sup>38</sup> *Ibid.*, Article 5.

<sup>39</sup> Decree No. 25066, Op cit., Article 2.

<sup>40</sup> Decree No.25067-MINAE, March 21, 1996, published in *La Gaceta* No. 76, April 22, 1996.

<sup>41</sup> "Esquinas Carbon Offset Land Conservation Initiative (ECOLAND)," A USIJI Project Proposal, Trexler and Associates, on Behalf of Tenaska Wahington Partners II, L.P., November 4, 1994, p. 14.

<sup>42</sup> *Ibid.*, p. 31.

<sup>43</sup> It is important to point out that the klinki is a tropical pine and for this reason it is compatible with other species from the tropics.

<sup>44</sup> Cantonal Agricultural Center of Turriabla. KLINKIFIX. Project proposal.

<sup>45</sup> Guanacaste Conservation Area. Project DRYFIX-Project WETFIX. Project proposal. March, 1995.

<sup>46</sup> FUNDECOR. Project CARFIX. Foundation for the Development of the Central Volcanic Mountain Range. USIJI project proposal. October, 1994. p. 3.

<sup>47</sup> Interview with Franz Tattenbach, Op cit.

<sup>48</sup> *Ibid.*

<sup>49</sup> OCIC, "A Costa Rican Certifiable, Transferrable Greenhouse Gas Offset" Version 3.0, no date, p. 2.

<sup>50</sup> *Ibid.*

<sup>51</sup> *Ibid.* It is important to point out a key difference between CTOs from the PAP and the PFP. CTOs from the PFP are issued when all activities related to them have been completed. And CTOs from the PAP, because they are certified by SGS, are issued before activities related to them have been completed.

<sup>52</sup> Interview with Franz Tattenbach, Op cit.

<sup>53</sup> Ministerio del Ambiente y Energía, Sistema Nacional de Areas de Conservacion, Contrato Forestal -- Manejo de Bosque. No date.

<sup>54</sup> "Certifiable, Tradeable Offsets in Costa Rica" *Joint Implementation Quarterly*, Volume 2 Number 2, June 1996, Groningen, The Netherlands, p. 2.

<sup>55</sup> OCIC, "A Costa Rican Certifiable, Transferrable Greenhouse Gas Offset," Op cit., p. 5.

<sup>56</sup> Interview with Franz Tattenbach, Op cit.

<sup>57</sup> Costa Rican Ministry of Environment and Energy. National proposal for the territorial and financial consolidation of Costa Rican national parks and biological reserves. USIJI Project Proposal. 1997.

<sup>58</sup> *Ley Orgánica del Ambiente*, No. 7554, September 28, 1995, Article 37.

<sup>59</sup> *Ibid.*

<sup>60</sup> As noted above, this requirement, contained in earlier versions of the Forestry Laws, was somewhat ambiguously altered by the Organic Law of the Environment in 1995. *Ley Organica del Ambiente*, Op cit., Article 37.

<sup>61</sup> Constitutional Court of the Costa Rican Supreme Court. No. 796-91 from the 9 hours, 15 minutes of April 26th., 1991.

<sup>62</sup> Ministerio de Planificación Nacional y Política Económica, Ministerio del Ambiente y Energía y Gobierno de Costa Rica PLAN NACIONAL DE POLITICA AMBIENTAL ECO 2005, diciembre 1996.