CARBON SINK PLANTATIONS IN THE ECUADORIAN ANDES

Impacts of the Dutch FACE-PROFAFOR monoculture tree plantations' project on indigenous and peasant communities

Patricia Granda

Acción Ecológica

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Cover design: Flavio Pazos

Alejandro de Valdez Nº 2433 y la Gasca
Casilla 17 15 246C
Quito - Ecuador
Telefax: 593 - 22 527583 / 593 22 547516
e-mail: verde@accionecologica.org
internet: http://www.accionecologica.org

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Table of Contents

"...The carbon credit approach
(to Climate Change) may trigger a new wave of
debt mechanism and inequity on the South.
The more carbon a person / company
in a northern country emit the more land
it will be entitled to grab in the South for its carbon emissions."

Declaration on Carbon sinks and trade, dams, rivers linking and extractive industries:
New Terms & Mechanisms for further Expropriation & Livelihoods Threats
to Peoples in India's North Eastern Region.
Guwahati, 18 November 2003.

INTRODUCTION

While evidence is accumulating on the seriousness and the impacts of Climate Change due to Global Warming, the "efforts" aimed at seeking to mitigate them foreseen in the United Nations Framework Convention on Climate Change seem increasingly distant from resolving the fundamental causes of the problem. This is the case of the so-called "Clean Development" projects and other similar initiatives contemplated within the process of climate negotiations and in the Kyoto Protocol.

The Kyoto Protocol, seen as a hopeful measure by part of various sectors of the population, emerged in the context of the United Nations climate negotiations as *a legally binding instrument* seeking to establish commitments to reduce emissions by the industrialized countries.

Unfortunately, this instrument suffers from serious problems. In the first place the targets set for the reduction of emissions are totally inadequate – the 1990 levels of emissions are arbitrarily taken as a reference and a 5.2 per cent reduction of emissions is proposed with respect to those levels, in spite of the fact that an infinite number of studies maintain that for this reduction to have a real impact on the climate problem, the figure should be set at no less than 70 per cent of the levels released 15 years ago.

In addition to demanding insignificant reductions vis-à-vis the magnitude of the climate problem, the Kyoto Protocol allows industrialized countries to evade their commitments for the reduction of emissions through the Clean Development Mechanism (CDM). The initiative gestated in the United Nations under the pretext of struggling against or 'mitigating' climate change has originated a Carbon Trade, of incalculable proportions, some of which can be characterized as the sale of "hot air."

The Clean Development Mechanism arose when the United Nations Framework Convention on Climate Change pointed out that the Greenhouse Effect could be fought against in a *cost-effective way* by the industrialized countries, by means of investment in the so-called "*reduction" and sequestering* of greenhouse gases (GHGs) in other countries: the industrialized countries managed to displace their responsibilities beyond their own frontiers through projects – of doubtful real use – implemented in poor countries. For the industrialized countries, the cost of getting other countries to "*absorb"* is far less than the cost of *reducing*.

Thanks to the levels in reduction foreseen by the Kyoto Protocol, the industrialized North can continue its emissions of Greenhouse Effect Gases, and thanks to the framework foreseen by the CDM, it can continue to implement projects in Third World countries and avoid *real* reduction of GHGs *at the source.*

The idea of the Clean Development Mechanism is to increase sinks and to maintain or expand carbon reservoirs with the aim of compensating for the emission of GHGs. As CDM projects, initiatives are to be found that are intended to "absorb" CO2 from the atmosphere: projects that

increase carbon *sinks* (e.g. tree plantations), or the existing *reservoirs* of this element (i.e. forest conservation). The pretext is that in maintaining reservoirs or increasing sinks, carbon emissions are being "compensated for" – something that has not been fully demonstrated.

In addition to the biosphere's carbon absorption capacity being appropriated as private property, the fundamental causes of the climate change phenomenon are forgotten and *knowledge is confused with speculation* regarding the carbon exchanges that take place between the atmosphere and the Earth's vegetation, that soils and vegetation can be managed in such a way as to increase their sequestering and fixation of carbon and thus make them into terrestrial carbon sinks.

The capacity to recycle and absorb carbon from the biosphere thus becomes a new environmental "service" that can be traded. Industrialized countries finance projects for *absorbing or trapping* CO2 instead of reducing their domestic emissions of GHGs. Such projects in turn generate Carbon Certificates or Credits tradable on a permit market by governments and companies.

The idea does not attack the basic problem of excessive consumption of fossil fuels and thus provides wrong or even "perverse" incentives: focusing on carbon sequestration enables more credit to be obtained while demonstrating a faster growth of trees. This becomes an incentive for large-scale tree plantations.

Locally this is translated into the establishment of tree plantations, such as those sponsored by the FACE PROFAFOR company in Ecuador. This project has the Forest Stewardship Council's certification, which is presented to international public opinion as a guarantee of *good management*.

The Dutch foundation FACE attempts to "sequester" carbon with pine plantations grown in Ecuadorian primary ecosystems. This so-called "sequestering" of carbon is cheap for the Netherlands as it does not consider various *costs that are being absorbed by peasant communities and primary ecosystems* in the host country. Factors such as the low or inexistent cost of land use, free peasant labour and displacement of the communities' productive activities, added to externalities generated by the project – such as the environmental impacts on soil, the loss of water retention and a greater release of carbon because of the establishment of plantations in the Paramo[1] – make the FACE PROFAFOR project an absurd idea, seeking to increase terrestrial carbon sinks and only achieving the diversion of financial and political resources from a restructuring of energy use and generation.

[1] Translator's note: Paramo – The highest belt of Andean vegetation, extending up to the snow line from above the tree line, almost devoid of woody vegetation, the natural vegetation is mainly gramineous, resting on stratified layers of volcanic soil

1. What is FACE – PROFAFOR?

1.1 How did it come into being in the Netherlands?

The Dutch FACE Foundation or "*Forest Absorbing Carbon dioxide Emissions*", was established in 1990 by the Board of Management of the Dutch Electricity Generating Companies, N.V. Sep, with the initial objective of establishing 150,000 hectares of tree plantations and thus compensate for the emissions from a new coal fired electricity generation plant to be set up in the Netherlands. The new project was to represent millions of tons of carbon dioxide released into the atmosphere. Due to the costs involved, they turned to the establishment of tree plantations in developing countries.

> "*...having studied that reforestation would make it possible to diminish costs regarding a reduction in CO_2 emissions in the same country... The biomass of these 150,000 has should compensate for a minimum of 75 million tons of CO_2 [2], equivalent to the production of a new 600 MW coal fired electricity generation plant during its 25 years of life[3] ... for reasons of land availability and cost-effectiveness, greater emphasis has been placed on collaboration with developing countries and countries in transition."* [4]

Since 2000 the FACE Foundation has been working independently without SEP funding. Its main offer is absorption and sale of Carbon Credits, through third parties including logging companies, small farmers and national parks. According to a statement by the FACE Foundation in its public access information, FACE works with partners who are genuinely interested in "*forests"* and that have the capacity to manage them "*sustainably."*

It should be mentioned that within the rationale of the carbon trade – of timber and paper – the meanings of "forest" and "plantation" are often confused with each other. The word "forests" is used by international organizations and corporations to refer to "tree plantations." Very often, in this context mention is made of "planted forests," something which in practice is impossible.

Again a mixture of concepts and interpretations when FACE talks about "sustainable" management, it does not necessarily refer to decentralized and balanced management of a natural resource and rather confuses the possible economic profitability of industrial management of a

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[2] Generally speaking, it is calculated that half of the biomass of a tree (that is to say the dry weight of its material) is carbon, accumulated through photosynthesis, according to the generic formula:

$$CO2 + H2O = C6\ H12\ O6 + O2$$

carbon dioxide + water = glucose + oxygen

Taking into account that one unit of elemental carbon is the equivalent of 3.6 units of CO2. After Vidal, 1999.

[3] Initiative of Joint Implementation of the US, press release, EPA and US Department of Energy, Washington D.C., 20 April 1995.

[4] VIDAL, Verónica, "LA APLICACIÓN DE POLÍTICAS SOBRE CAMBIO CLIMÁTICO EN EL SECTOR FORESTAL DEL ECUADOR", Memoria de Investigación Doctorado en Gestión Ambiental y Economía Ecológica, UAB. October 1999.

monoculture tree plantation, with the *sustainability* of traditional forest management and the traditional communities that inhabit them[5] .

FACE maintains that its "*sustainable forests"* are ***certified*** by an *independent* organization. This certification seeks to grant credibility and add commercial value to forest management and to the project's absorption of carbon. According to FACE, this is an *independent organization* that grants forest certification and that looks after monitoring the established amounts of carbon. The *independent organization* referred to is the SGS certification company. In spite of its so-called independence, in the world of "voluntary certification" the certifying firm is *selected and hired* by the company seeking certification. FACE hired SGS to *verify the sustainability* of its forest management.

While partially sponsoring the establishment of tree plantations, FACE reserves all the "*rights*" over the carbon that in theory these trees are "*sequestering.*" FACE trades the carbon credits through two Dutch companies: *Business for Climate* and *Triodos Climate Clearing House*. "Business for Climate" was founded by FACE in 2002 jointly with the Triodos Bank and Kegado BV.

1.2 How does FACE work in Ecuador?

The FACE Programme for Forestation in Ecuador S.A., or PROFAFOR, is presently the largest among the various projects of the Dutch FACE Foundation. PROFAFOR del Ecuador S.A. is a company incorporated in Ecuador with the funding of FACE, to establish forestry plantations and "*fix"* CO_2 from the atmosphere. FACE PROFAFOR is promoted under the slogan of: "LET US SAVE THE CLIMATE! It maintains that it bases its reforestation activities on carbon absorption and fixation and also that it "*takes advantage of land that is not being used and that could generate* income to the local economy." [6]

> *"…at one extreme of the spectrum is PROFAFOR, an example of a partner from an Annex 1 country acting as a Carbon Credit financier, executor, implementer, investor and vendor. The Annex 1 Partner has also established its own office in the host country, solely leaving co-implementation and production of carbon credits to the receiving country..."* [7]

In order to process the requests and contracts, FACE established PROFAFOR in Ecuador in June 1993. In its establishment, PROFAFOR received the support of INEFAN (presently the Ministry of the Environment). Initially the Ministry was the "local actor" to be consulted and

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[5] The World Rainforest Movement maintains that "…Community forest management has shown to be much more sustainable than approaches on an industrial scale… it gives priority to the needs and interests of local communities having scant resources and provides them with basic elements such as water, firewood, edible plants, meat from wild animals and medicinal plants in addition to cultural and spiritual assets…a pillar in strategies to eradicate poverty and avoid the impoverishment of communities that depend on forests…successful from the environmental standpoint…" WRM, "Certificando lo incertificable", page 14, December 2003.

[6] www.profafor.com

[7] MILNE, Mary; TRANSACTION COSTS OF FOREST CARBON PROJECTS; Center for International Forestry Research (CIFOR); www.une.edu.au/febl/Economics/carbon/CC05.PDF

entrusted PROFAFOR with the execution of part of the PlanFor (National Forestation Plan). This was a Ministerial initiative that was aimed at foresting and/or reforesting 250,000 hectares in the Andean zone in the term of 15 years. When PROFAFOR proposed its initial goal of planting 75,000 hectares of trees in five years, it was seen as an interesting counterpart by the Ecuadorian Government to complete its forestation plan. It was thus that in 1993 the Ministry of the Environment – ex INEFAN –, prepared the agreement and the parties signed a Memorandum of Understanding, whereby PROFAFOR obtained a seal of institutional support.[8]

The electronic portal of the FACE Foundation maintains that the PROFAFOR programme, with the help of farmers and farming communities, forested areas in the Upper Andes where "*agriculture is not profitable and the land is not suitable for subsistence activities."* Forestation activities with exotic species are also carried out, maintaining that they seek to "strengthen agricultural economy and stuggle agains soil degradation."

Since the beginning of its activities and up to 1999, PROFAFOR promoted massive planting of pine and eucalyptus because according to them in Ecuador "*knowledge of the use of native species had been lost."*[9] Since 1999 native species have been included in their forestry projects.

In December 2001, PROFAFOR received forestry certification granted by SGS[10] for forest management of 20,000 hectares of plantations in the Ecuadorian Andes, where most of the forestation projects carried out by PROFAFOR are located. Forestry management was assessed under the SGS Qualifor Programme (Forest Quality Management) and this body has decided that it complies with FSC[11] "*Principles and Criteria*" and therefore has been granted the Forest Certification Seal. This certificate is valid for five years, during which time PROFAFOR will be subject to annual visits from the certification firm.

The same certification company hired by FACE PROFAFOR (SGS - Société Générale de Surveillance), issued a certificate in 2000 on *Project Design* in the name of the Programa FACE de Forestación del Ecuador S.A., PROFAFOR. The projected number of GEG [12] credits is specified in a second certificate under the title of **Projected Scheme of Emission Reduction Units,** issued in January 2001 valid for one year. This sets out that the units of emission reduction from the project's activities totalled 2.49 million tons of CO2, not exempt from risks[13] . This involves millions of tons of carbon "fixed" in trees that at any time may catch fire, in which case all the "fixed" carbon would irremediably return to the atmosphere (see ANNEX 2).

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8 Albán, Montserrat. Com. Pers.

9 www.stichtingface.nl

10 *SGS Societé Generale de Surveillance*, a Swiss Certification Company.

11 *FSC Forest Stewardship Council.*

12 GEG Greenhouse Effect Gases.

13 The Projected Scheme for Emission Reduction Units totals 2,49 million tons of CO2, of which 1,8 million are *virtually* free from risk and 613,472 tons of de CO2 have been placed in the buffer band. JARA, Luis Fernando, EXPERIENCIAS EN LA VERIFICACIÓN Y CERTIFICACIÓN DE CARBONO DE PROFAFOR S.A. http://cd4cdm.org/countries%20and%20regions/Latin%20America/Ecuador/Training%20Workshop%20-%20Reforestation%20and%20Bioenergy/docs/viernes/vi_1_verify_certif.pdf.

This is the second certificate obtained by FACE for carbon absorbtion by its plantations; the first was obtained in FACE plantations located in the Netherlands. This is the first case in which carbon fixation and absorption in tree plantations, not real forests, has been certified.

Regarding the quantification of PROFAFOR plantations' "absorption" of carbon units, previous studies have already identified a NEGATIVE balance regarding carbon absorption (See Annex 2). Veronica Vidal, in her doctoral thesis on Environmental Management at the Autonomous University of Barcelona, has established - on the basis of studies entrusted by PROFAFOR itself – that absorption calculated for pine plantations is considerably less than the stipulated minimum absorption.

In fact, in the areas where PROFAFOR plantations have been introduced there is more carbon loss than carbon fixation. Given that the plantations in Paramo ecosystems may be drying up and at the same time, oxidizing soil organic matter, a release of large quantities of the carbon stored in Paramo soils is achieved. Vidal concludes that the net carbon balance in PROFAFOR plantations may be negative and that the application of the CDM in the case of Ecuador might be showing results in which all lose. "We are facing a lose-lose situation, in which those who most lose are the future generations that will have to face the problems of climate change."

1.3 Who does PROFAFOR work with?

In 1993, the initial objective of FACE – PROFAFOR was to establish 75,000 hectares of tree plantations in a period of 15 years. Subsequently this objective was reformulated to 25,000 ha. So far contracts have been signed for the plantation of 24,000 ha and effectively, 22,000 ha have been planted. Of these, 20,000 ha have the *Forest Stewardship Council* FSC certification.

Initially, FACE PROFAFOR activities were focused on the Andean region, in the Ecuadorian Sierra. However, since the year 2000, contracts have also been signed in the Coastal region, particularly in the provinces of Manabi and Esmeraldas.[14]

The plantations are established through contracts signed between the company and private owners, either individual land holders or indigenous communities in the Sierra. Some contracts are signed in the form of a mortgage with terms running for up to 99 years.

The contractual figure of a mortgage is limited to those contracts signed with private estate and land holders, individuals or corporate bodies. However, for Indigenous Communities another type of contract is established, as "Communal Property" is not subject – according to the "Commune Law" – to land tax or mortgages. In these cases, the contracts include penalty clauses and fines in the event of a breach of contract.

A significant part of the planted area (8,000 hectares) has been done under contract with 39 Sierra indigenous communities. According to PROFAFOR this "...has served to incorporate degraded lands or unused lands into the national economy."

[14] Since 1994 PROFAFOR has established forestation contracts in the Provinces of the Ecuadorian Sierra: Imbabura, Pichincha, Chimborazo, Cañar, Azuay, Loja. In the Coast: in the buffer zone of the Mache-Chindul Ecological Reserve within the polygon: El Carmen, Pedernales, Cojimíes, Muisne, Atacames, Bilsa and Quinindé, that is to say, to the north of the Province of Manabi and to the south of the Province of Esmeraldas.

Of the species planted in the Sierra, *Pinus radiata* represents the greatest percentage planted, particularly in the Provinces of Carchi and Chimborazo. The second largest percentage corresponds to *Pinus patula,* mainly planted in the Provinces of Cañar and Loja.[15]

Out of the totality of the plantations partially sponsored by the PROFAFOR Programme, 90 per cent of the plantations are pine, 4 per cent eucalyptus and cypress and only 5 to 6 per cent correspond to native species.

According to the terms of the contracts, the totality of the activities required for forestation, maintenance of the plantations and timber exploitation are the responsibility of the owners of the lands under plantation. PROFAFOR maintains exclusive rights over carbon. Thus FACE PROFAFOR acquires *"rights"* for absorption and fixation of atmospheric carbon dioxide, through forestation carried out by owners and local communities.

The Dutch FACE Foundation has 5 projects worldwide: Malaysia, the Netherlands, Czech Republic**,** Ecuador and Indonesia. Due to the rise in costs of plantation per hectare in Ecuador[16] , FACE decided to decrease financing for Ecuador and increase its funding of projects in Malaysia. Presently PROFAFOR is not establishing new contracts in Ecuador and it is seeking a way to obtain new funds and promote itself as a company "*providing technical forestry services*."

[15] PROFAFOR, Luis F. Jara, Com. Pers.

[16] Since dollarization of the Ecuadorian economy in 1999.

The International Context:
The Emissions Market and Carbon Dumps

2 The Carbon Market and the Kyoto Protocol

2.1 The Greenhouse Effect and Climate Change

The Greenhouse Effect is a natural phenomenon that provides planet Earth with one of its most important conditions for inhabitability: it allows the Earth to maintain a stable temperature on retaining heat from solar radiation.

Part of the energy input received from the sun is directly reflected by the earth's surface and another percentage is returned in the form of infrared radiation, less energetic, on cooling. Radiation reemitted by the Earth is absorbed by different atmospheric components[17]. These components release heat, producing a natural warming that makes the Earth inhabitable for living beings: this is the Greenhouse Effect.

The temperature of planet Earth has increased since the industrial revolution, and particularly since the use of fossil fuels, the change in agricultural practices (deforestation) and industrial processes (the use of Chlorofluorocarbons, CFCs) that increase the amounts of carbon dioxide and other gases in the atmosphere, further retaining heat around the globe. This warming produces readjustments to the climate and is what has been called Climate Change.

> *"...There is much uncertainty both regarding the scale and the impacts of climate change, particularly on a regional scale. Because of the retarding effect of the oceans, surface temperatures do not immediately respond to greenhouse gas emissions, and therefore climate change will continue for many decades after the atmospheric concentrations of such gases become stable (UNFCCC, 1998). Meanwhile, the cumulus of available evidence suggests that the climate may already be responding to prior emissions: strong tornados, the intensification of the Niño phenomenon in 1998, or the serious flooding that continuously take place all over the planet, may be some of the samples."* [18]

The deep oceans are warming. Island nations are going under. Glaciers are melting. Infectious diseases are spreading. Violent weather is intensifying and the timing of the seasons has changed. And all this has resulted from a mere 1° Fahrenheit increase in temperature. The IPCC (International Panel on Climate Change) has predicted an increase of 3°-10 ° Fahrenheit during this century.[19]

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[17] Carbon Dioxide (CO2), methane (CH4), nitric oxide (N2O), water vapour, CFCs and derivates (HCFC and HFC) and tropospheric ozone (O3). In VIDAL, 1999.

[18] VIDAL, Verónica, "LA APLICACIÓN DE POLÍTICAS SOBRE CAMBIO CLIMÁTICO EN EL SECTOR FORESTAL DEL ECUADOR", Memoria de Investigación Doctorado en Gestión Ambiental y Economía Ecológica, UAB, October, 1999.

[19] GELBSPAN, Ross; "Carbon Emmissions Trading, A permit to pollute or a step in the right direction?"; The Ecologist, 22/05/2002.

2.2 United Nations Framework Convention on Climate Change - UNFCCC

In June 1992, 165 countries signed the Framework Convention on Climate Change (FCCC[20]), at the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro (Earth Summit) in 1992. The objective of the FCCC is:

> *"...to achieve, [...] stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system [...].within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner." (FCCC, art.2).*

At the third Conference of the Parties in Kyoto in 1997, delegates drafted the world climate treaty under which the industrialized countries (known as Annex 1 countries) took on certain commitments. One of these was to reduce their emissions of Greenhouse Gases so that by the year 2000 they would have returned to the levels of emissions recorded in 1990. Any level below these would represent immediate changes in energy uses, with a negative impact on their economies.

> *"...The determination of this level of emissions in which human interference is prevented, maintaining "sustainable development" is a task that cannot be decided by the scientific teams of the Convention. Even so, the IPCC (International Panel on Climate Change), scientists recommend a stabilization at the 1990 levels (although there is no evidence that these objectives of the FCCC are being complied with), and conclude that for this purpose the emissions of CO_2, N_2O, and CFC must be reduced by 60%, and the emissions of CH_4 by 15-20%..."* [21]

The Convention also points out that the Greenhouse Effect can be dealt with in a *cost-effective way* by Annex I countries by means of investments in the reduction and sequestering of Greenhouse Gases in other countries.[22] With this, the industrialized countries have obtained a *cost-effective* mechanism to transfer their responsibilities beyond their frontiers.

Thanks to the Convention on Climate Change and the Kyoto Protocol, the industrialized countries have acquired the capacity to implement projects – of uncertain real usefulness – in poor countries, logically at a much lower cost than if they were to take real action in their own countries, such as reducing GHGs *at source*.

> *"...CO2 is the most abundant greenhouse effect gas, annually 5,500 million tons of carbon are released due to the consumption of fossil fuels. In an attempt to solve the climate problem, one of the questions under debate is the capacity for carbon absorption, which is what some international environmental policy instruments*

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[20] From here after, FCCC.

[21] "…Such levels have also been decided in an exogenous way to the costs derived from climate effects, although models have been made precisely to account for the economic effects of Climate Change in the event of measures not being taken. VIDAL, 1999.

[22] "…These Parties may implement such policies and measures jointly with other Parties and may assist other Parties in contributing to the achievement of the objective of the Convention…" (FCCC: art.4.2a).

are trying to increase. This is the idea of the Clean Development Mechanism: to enhance sinks and to maintain or expand carbon reservoirs in order to compensate for the emissions of GEGs…the capacity for absorption has started to be appropriated as a private property resource…the principle of common heritage ceases to exist (that is to say, freely accessible and without restrictions on its use) …" [23]

2.3 The Kyoto Protocol, the Clean Development Mechanism and Activities Implemented Jointly

The Clean Development Mechanism (CDM) is one of the Kyoto Protocol's *Flexible Mechanisms.* These Mechanisms have been designed seeking to lower costs and facilitate the industrialized countries fulfilment of the commitments to reduce GEG emissions agreed on in the Protocol. The CDM must also support developing countries in seeking sustainable development.

THE KYOTO PROTOCOL

The Kyoto Protocol, signed at the Third Conference of the Parties in 1997, emerges as a legally binding instrument establishing commitments for the reduction of emissions by the Annex 1 countries – industrialized countries and countries in the process of transition to a market economy – after the year 2000.

One of the main agreements is that the *Annex 1 countries engage themselves to reduce their Greenhouse Effect Gases (GEG)* differently from the developing countries, reaffirming the principle of *common but differentiated responsibility* – for the climate change phenomenon – established by the FCCC.

The Kyoto Protocol reaffirms the establishment of various mechanisms to reach emission reduction objectives in the most *cost-effective way,* which are:

Emission Trading

Joint Implementation

Both of those only among Annex 1 countries, and the

Clean Development Mechanism (CDM)

The latter is the only one in which developing countries may participate…

The CDM was initially proposed by the G77 and China and approved by COP3. However, this approval is not definitive due to difficulties in establishing adequate criteria. The CDM (*should have*) started operating as from the year 2000.

[23] VIDAL, 1999.

> *"These three mechanisms have the same foundation:* the theory of tradable permits. This theory, - like other instruments of environmental policy, alternative to complete governmental intervention – *is based on the possibility of achieving "optimum contamination" through the market.* The regulating authority only allows a certain level of emissions and grants permits (also called licences, rights or certificates) for this amount*, which is tradable on the permit market…"*
>
> Taken from: VIDAL, 1999.

In the light of the Kyoto Protocol, the main requisite for the approval of *Clean Development* projects is that they must show their contribution to the Sustainable Development of the country hosting them. If this were the case, the priority objective of developing one or various mechanisms aimed at improving the living conditions of the local population would exist in CDM projects, if such projects were to have an emphasis on ensuring that the communities receive real benefits.

For the implementation of Clean Development Mechanism projects and their contribution to seeking *sustainable development,* each government must develop a set of criteria in harmony with the precept of *sustainability* that they must demonstrate for the host country; however, *"…although this is a key point, unfortunately the Government of Ecuador, four years after signing the Protocol, has still not defined these criteria…"* [24]

A special issue are the projects of Activities Implemented Jointly (AIJ) – which are voluntary, multilateral agreements, not *officially* contemplated in the Kyoto Protocol – that have served as part of a *pilot phase* for future Carbon *sequestration*. The AIJ projects have been established as bilateral agreements between industrialized countries that invest in projects in developing countries and thus seek emission reductions at a lower cost than that of achieving domestic reductions. Although with this mechanism certified carbon reductions cannot be achieved, the projects have fulfilled the purpose of obtaining experience in the development of carbon mitigation projects while carbon markets are being developed and their processes and procedures are standardized and simplified.

Although in its web page the FACE PROFAFOR project promotes itself as a CDM project, this is not the case and according to the IUCN, it does not fit into the framework foreseen for Activities Implemented Jointly (AIJ)[25] projects. According to the latter, we are talking about a non-regulated private initiative to sequester GHGs, which in Ecuador would become, according to some, "*the national referent in forestation.*" [26]

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[24] ALBÁN, Montserrat, Page 8.

[25] WORLDWIDE FUND FOR NATURE – REGIONAL OFFICE FOR SOUTH AMERICA (UICN SUR) PROGRAMA REGIONAL DE BOSQUES y CORPORACIÓN DE GESTION CIENTÍFICA Y TECNOLÓGICA SOBRE EL AMBIENTE (OIKOS). "EL MECANISMO DE DESARROLLO LIMPIO Y LOS PROYECTOS FORESTALES: Impacto de los proyectos forestales dentro de la AIC en América Latina. Análisis comparativo de 4 proyectos. Quito – Ecuador, March 2001.

[26] ALBÁN Montserrat, Com. Pers.

According to PROFAFOR's web page, its activities in Ecuador are related with the specifications of the Clean Development Mechanism, as a "pilot" project for CDM projects, and maintains that it is governed by the following criteria:

ADDITIONALITY

Projects are supported that would not have had the possibility of being carried out without the assistance of PROFAFOR. The plantation should increase the amount of carbon in the system at the time of being established and in the medium and long term should maintain the amount of carbon *in the plantation (*in the original document the word *forest* is incorrectly used to refer to pine and eucalyptus plantations).

SUSTAINABILITY

The projects should maintain and increase the social, economic and environmental benefits in the course of time, and under suitable management should guarantee the durability of the *plantations*, contributing to conserve system biodiversity.

COST-BENEFIT

The projects should be economically and financially viable.

EFFICIENCY

Programme beneficiaries as well as their project sites should show sufficient conditions to obtain maximum yields from the point of view of the growth of the plantation and of $CO_{2.}$ absorption and fixation.

Mary Milne, in her study on the transaction costs of forest carbon projects[27], classes PROFAFOR as an AIJ project or Activity Implemented Jointly. This study finds that carbon projects that are implemented by the community are likely to carry higher costs of information and search, particularly in the establishment phase, especially in the cases in which the executing agency must meet with the population to identify their needs and priorities and land management strategies must by formulated. It is possible that while the more participative and transparent the process, the higher the number of meetings required with the community, thus increasing transaction costs.

However, the participation of land holders is not a requirement for AIJ or CDM projects. Therefore, some project executors may decide not to invest their resources in this effort, in spite of the fact that various lessons learnt from attempts to link *conservation and development* show that

[27] When speaking of transactional costs or Costs of Transactor we refer to the time, effort and resources required for research, initiate, negotiate and accomplish a business. En: MILNE, Mary; TRANSACTION COSTS OF FOREST CARBON PROJECTS; Center for International Forestry Research (CIFOR) www.une.edu.au/febl/Economics/carbon/CC05.PDF

local community participation from the launching of the project cycle, increases the chances that this will be a sustainable project, on seeking to reach the goals set by the project and the population.[28]

In spite of promoting itself as such in its web-page, the FACE PROFAFOR Project is not a CDM, nor does it fit into the framework provided by the AIJ or Activities Implemented Jointly projects, as it is not an initiative promoted jointly by Annex I countries.

According to the latter, we would be talking about a private, non-regulated initiative to sequester Greenhouse Effect Gases that, according to some, would however become "the national referent for forestation" and also a referent for Carbon Sequestering activities in Ecuador.

PROFAFOR has been carrying out forestation activities in Ecuador for ten years now. Even before Carbon Trading becomes fully operational PROFAFOR is already negotiating Carbon Credits on the international market through the FACE Foundation.

Following the last Conference of the Parties, COP 10 in Buenos Aires and ratification of the protocol by the former USSR, the Kyoto Protocol entered into force on 16, February, 2005.

Entry into force of the Kyoto Protocol means that:

1. Thirty industrialized countries will be legally bound to achieve their quantified Greenhouse Gas emission limitation and reduction commitments.

2. The International Carbon Trade will become a legal and practical reality. The "Emissions Trade" regime of the Protocol enables industrialized countries to buy and sell Emission Credits among themselves.

3. The Clean Development Mechanism (CDM) will move from an early phase of implementation towards Total Execution. The CDM will encourage investment in projects to Compensate for Emissions from industrialized countries, to be implemented in developing countries.

4. The Protocol's Adaptation Fund, established in 2001, shall start preparing itself to provide assistance to developing countries in order to address the negative effects of climate change.

2.4 The Role of Land Carbon Sinks in the Mitigation of Climate Change

Regarding the decisions and tools proposed by United Nations to seek a solution or to mitigate Climate Change, already in 2001 a team from the Royal Society published research work on The Role of Land Carbon Sinks in Mitigating Global Climate Change[29]. This study undoubtedly maintains that, in spite of certain international efforts having focused on ways in which emissions of GEG, particularly carbon dioxide, can be reduced, "…*Knowledge* is confused with an *idea.* Knowledge that carbon is stored within and exchanged between the atmosphere and vegetation and soils has led to the suggestion that soils and vegetation could be managed to increase their uptake and storage of carbon and thus become land carbon sinks…"

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[28] Nawir and Calderon, 2001: Wells and Brandon 1992, and Brandon *et.al.* 1998.

[29] THE ROYAL SOCIETY, The Role of Land Carbon Sinks in Mitigating Global Climate Change, Policy Document 10/01, July, 2001.

The above mentioned document is focused on scientific issues underpinning Carbon Sinks, particularly in the context of their inclusion in the Kyoto Protocol, due to the concern generated by the real "*permanence*" of carbon in these "*sinks*" and the "*accuracy*" with which they can be quantified and verified. This study sought to determine the land's real capacity to increase carbon sinks, and also the way they are monitored, quantified and verified.

The earth's vegetation presently absorbs 40 percent of the global emissions of carbon dioxide. If deforestation were to be *completely* halted and changes were to take place in agricultural and forest practices[30], this capacity for absorption could potentially cover, at most, 25 per cent of the reductions of CO2 required by the year 2050. To be able to comply with a quarter of what is required "*…however it requires considerable political will, [and] additionally there is almost no possibility of increasing carbon sinks beyond this point..."*

It was also found that there is "considerable uncertainty associated with the estimates derived using the techniques that will be required to monitor, quantify and verify land carbon sinks," and that there is an "urgent need" to increase the accuracy of these techniques before land carbon sinks are utilised to any significant extent. It also points out that the *permanence of land carbon sinks* is uncertain, with global warming the capacity of the sinks could be limited in growth, *saturate or even be converted to a source of CO2.*

Therefore, the conclusion is that:

> "…There is still considerable uncertainty in the scientific understanding of the causes, magnitude and permanence of Land Carbon Sink. However, our current knowledge indicates that the potential to enhance the land carbon sink …is finite in size and duration. The amount of CO2 that can be sequestered in these sinks is small in comparison to the ever-increasing global emissions of GHG. Projects designed to enhance land carbon sinks must therefore not be allowed to divert financial and political resources away from the restructuring of energy generation and use..." [31]

Industry in the countries of the North prefers to use these mechanisms for carbon sequestration – implemented in countries of the South – as it is the cheapest short-term solution to comply with their commitments to Reduce Carbon Emissions.

International carbon trading would help industrialized countries attain the final 10-15 per cent of their obligations[32] agreed on under the Protocol. The obligations or targets for reduction proposed by the Kyoto Protocol engage the industrialized North to reduce its emissions by 5.2 per cent as compared to their 1990 Greenouse Gas Emissions, a rather poor target if we take into account that science is unambiguous on one point: climate stabilization requires global emissions reductions of about 70 – 80 per cent, that will only be achieved through a worldwide energy transition.

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[30] i.e. Such as the massive implementation of Carbon Sink projects.

[31] THE ROYAL SOCIETY, The Role of Land Carbon Sinks in Mitigating Global Climate Change, Policy Document 10/01, July, 2001; www.royalsoc.ac.uk

[32] GELBSPAN, Ross; "Carbon Emmissions Trading, A permit to pollute or a step in the right direction?"; The Ecologist, 22/05/2002.

The idea of using credits from carbon sinks to halt climate change is based on the incorrect assumption that *Carbon is Carbon*, which ignores the different interactions of carbon in the atmosphere. This reasoning equates Carbon from the various biological processes – such as the vital processes of living organisms, such as breathing and decomposition of organic compounds – with carbon coming from the burning of fossil fuels, thus overloading biospheric carbon's capacity for recycling.

The idea does not attack the fundamental problem of excessive consumption of fossil fuels and therefore incorrect and even "perverse" incentives are provided: focusing on Carbon Sequestering makes it possible to obtain more credits when showing a faster growth of trees, which becomes an incentive for large-scale tree plantations. This turns it into a "perverse" incentive for two reasons. In the first place, on having the possibility to sequester carbon, developed economies do not reduce their emissions and in the case of local communities inhabiting primary or scantly disturbed ecosystems considerable pressure is put on them to introduce *fast growing* species in primary ecosystems, degrading them and releasing more carbon into the atmosphere, in exchange for an economic "incentive."

2.5 The "Business" of Climate Change and Emissions Trading

Various authors have commented on the danger involved in this new initiative of the industrialized countries. Trade in emissions has even been qualified as the sale of "hot air."[33] In essence the Clean Development Mechanism involves another form of inequitable international trade, that uses climate policies to "*…to bring about a variation on the traditional means by which the global South is dominated…*" [34]

Given the framework of *cost-effectiveness* foreseen in the Kyoto Protocol, industrialized countries may in fact stop reducing their emissions of GHG and finance projects in developing countries that allegedly absorb Carbon, as the price of *absorbing* is much lower than the price of *reducing* "…and thus, companies that have high costs of emissions reduction prefer to buy absorption permits..."

On comparing the difference between the costs of absorbtion and reduction, according to a study used by FACE, the cost of a ton of absorbed carbon through tree plantations in the tropics "may be between 50 and 200 times cheaper than the ton reduced in the same industries…" [35]

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[33] Alier, J.M., Com. pers.

[34] BACHRAM, Heidi. "Climate Fraud and Carbon Colonialism: The New Trade in Greenhouse Gases"; *Capitalism Nature Socialism*, Vol 15, Number 4, December 2004.

[35] Study carried out in 1989 by the University of Utrecht, entrusted by SEP to assess the possibility of compensating for residual or unavoidable CO_2 emissions. The study reveals that the only viable option is reforestation. In comparison with other options investigated, such as storing in depleted gas fields, the prices are much lower. in VIDAL, 1999.

Calculation of the costs of the various projects assessed

TYPE OF PROJECT	COST	
Tree plantations (tropics)	**1-10**	**US$/ton carbon**
Tree plantations (temperate zones)	8-23	US$/ton carbon
Reduction of emissions "at the chimney" of industries and electricity generating plants	**50-200**	**US$/ton carbon**
Proposals for a "carbon tax"	22-28	US$/ton carbon

Source: OLANDER,1996.

As will be seen, the price of the ton in plantations in Ecuador is below the margin calculated for temperate zones and "*…adjusts to the principle that the poor sell cheap…*" [36] – if we relate low land use costs, the price of labour and lax national regulations, factors that lessen the costs for projects funded by industrialized countries in the countries of the South.

Under the Kyoto Protocol, the United Nations would distribute thousands of millions of dollars worth of *rights* to use "*sinks*" among the 38 nations that most contaminate the global environment. The governments are already distributing these funds "*gratis*" to private companies (in industrialized sectors) and these in turn can sell them to other polluting industries in what may become "*…the largest market ever created.*"[37] Regarding the volumes of capital moved by operations derived from the Kyoto Protocol, it is estimated that these will amount to $ 2,345 thousands of millions of dollars and thus become "the greatest invention in history of monetary assets derived from a voluntary international agreement." [38]

CLIMATE AND PROPERTY RIGHTS

The creation of rights to emit carbon and to use parts of the biosphere to dump it in represents a radical extension of world property systems and world capitalism.

Previously, the atmosphere was an "open access" regime – anyone could contaminate it to any degree, provided that no nuisance or pollution laws were violated or local powerholders offended. There was, in short, no property in the atmosphere.

Under the Kyoto Protocol, however, the United Nations has distributed tens of billions of dollars' worth of rights to (over)use the existing global carbon dump to 38

[36] Stated for the first time by Lawrence Summers, in *The Economist*, 8 February 1992.

[37] LOHMANN, Larry, Background Paper To "COMMODIFYING CARBON: CONSEQUENCES AND STRATEGIES", Septiembre, 2004.

[38] David Victor, *The Collapse of the Kyoto Protocol and the Struggle to Slow Global Warming*, Princeton University Press, 2001, pp.14-17.

industrialized nations who, in per capita terms, already use it the most, permitting them to sell portions of what they don't use.

Most nations receiving these rights are in turn passing large quantities of them on *gratis* to private companies in heavy industrial sectors. The European Union Emissions Trading Scheme (EUETS), for example, is allocating rights to emit 2.2 billion tonnes of carbon dioxide yearly to around 9,200 industrial installations across the EU. The UK, to take one instance, plans to hand out, as of 2005, free, transferable global carbon dump assets currently worth around •3.8 billion yearly to approximately a thousand installations responsible for around 46 per cent of UK emissions (see Table). The companies granted these rights can then sell any unused rights on to other polluters.

These property rights are a source of profit and are transferable, as with ordinary private property. They are assets that constitute major inputs to production. UK power generators, for example, are expected to receive an annual £500 million windfall from the EUETS, easily convertible into valuable income on their balance sheets. At the same time, however, EUETS emissions rights are only partially exclusionary, differentiating them somewhat from ordinary private property. While no rights are to be granted to Southern countries, neither are any restrictions being placed on Southern dump use. (The US, which refuses to ratify the Protocol, also continues to have free access to the dump although receiving no tradable rights to it.) Hence it is only other Northern ratifiers of the Kyoto Protocol and their corporations that are excluded from using the carbon dump assets which have been granted to (for example) UK firms through the EUETS. As is routinely observed, this lack of global exclusion, if maintained, would ultimately make Kyoto climatically ineffective.

In addition, the EUETS, together with the rest of the Kyoto market, is unlike other tradable permit systems, such as those sometimes used in fisheries, in which what is believed to be the "core" of a non-renewable resource is deliberately preserved and property rights are given away only to a small part of the resource. Under Kyoto, none of the "sustainable" core (the world's carbon-cycling capacity) is set aside; instead, legal rights to several hundred per cent of it are immediately given away and become eligible for trade. UK industrial sectors, with the exception of power generators, are to be granted formal rights to emit yearly between 2005-2007 at least as much as they annually emitted between 1998-2003 – a level acknowledged to be unsustainable. While nations and corporations are expected to surrender these assets bit by bit over time – this is how emissions are to be cut – "there has been no serious political analysis" of how this is to be negotiated. Currently, CO_2 emissions of all but a few of Kyoto's parties are increasing, not decreasing.

TABLE

Quasi-Privatization of the Existing Global Carbon Dump by the UK

Proposed National Allocation under the EU Emissions Trading Scheme, 2005

INDUSTRIAL SECTOR (UK only)	ANNUAL GIFT OF EMISSIONS RIGHTS ($mtCO_2$) - 2005-7	INCREASE/ DECREASE FROM ACTUAL AVERAGE EMISSIONS 1998-2003	FRACTION OF "AVAILABLE" WORLD ABOVE-GROUND CARBON DUMP*	APPROX. CURRENT ANNUAL VALUE AT •15/tCO_2†
Power generators	145.3	-6%	1.5-3.0%	•2.180b
Iron and steel	23.3	+16%	0.2-0.5%	350m
Refineries	19.8	+11%	0.2-0.4%	297m
Offshore oil and gas	19.1	+14%	0.2-0.4%	287m
Cement	10.7	+18%	0.1-0.2%	161m
Chemicals	10.1	+12%	0.1-0.2%	152m
Pulp and paper	4.7	+18%	0.0-0.1%	71m
Food and drink	3.9	+26%	0.0-0.1%	59m
Other industries	15.1	+16%	0.2-0.3%	227m
TOTAL‡	**252.0**	**+2%**	**2.6-5.1%**	**•3.780b**

* Figures in this column are not based on any attempt to estimate the earth's capacity to recycle transfers of fossil carbon with no remainder, which, even if initial assumptions could be agreed on, would probably be impossible in technical terms. Rather, it takes as point of reference the Intergovernmental Panel on Climate Change finding that anthropogenic CO_2 emissions from fossil fuel combustion and flaring must be reduced by 60-80 per cent from current levels of 24,533 million metric tonnes/year to achieve eventual stabilization of CO_2 levels at twice Industrial Revolution levels.

† Approximate price in early April, 2005. Many experts believe the price would have to double for there to be any meaningful incentive for change, although without structural innovation, higher prices will not necessarily result in impeding below-ground to above-ground carbon flows. By comparison, annual subsidies to fossil fuels are estimated at up to US$235 billion (CDM Watch, 2004). For every tonne of uncompensated-for CO_2 emitted above the limit, companies face a fine of • 40, rising to • 100 from 2008 onwards.

‡ Columns may not add up due to rounding.

Sources: UK Government, Point Carbon

In addition to being granted rights in the world's existing carbon dump, Northern countries are also being encouraged to create, and claim property rights in, new carbon-cycling capacity in the biosphere. Thus The Netherlands is claiming property rights in the new carbon-cycling capacity supposedly associated with the FACE PROFAFOR project. But industrialized countries are also creating new property rights within their own borders. In New Zealand, plantation owners joined battle with the government in 2003 over who owns the carbon in 200,000 hectares of trees planted after 1989, which are eligible to earn emissions credits under the Kyoto Protocol. The owners claimed the government was trying to steal NZ$2.6 billion from them with a stroke of the pen, "possibly the largest private property theft in New Zealand's history" (*Business Today*, 2003). Large emitters, whether states or corporations, are, across the world, trying to build new carbon dumps on someone else's land or in someone else's future. Resistance to the idea that they own them is inevitable.

The justification for this huge scheme for creating new property rights – one of the largest, if not the largest, in history – is that it will tackle climate change "more efficiently" than the alternatives.

The idea is that only through the creation of these private property rights can pollution be "optimised" so that it maximizes overall social welfare in the form of gross domestic product. If rights to pollute are created and made into tradable "factors of production", the theory goes, then, in a market without transaction costs and with perfect information, and inhabited by economic agents trying to maximize their income, these rights will automatically be bargained into the hands of those who can produce the most wealth from them, resulting in the greatest good for the greatest number. This theory, originating in the mid-20th century, was developed further by the US "market environmentalist" theorists who thrived in the increasingly strident neoliberal atmosphere of the 1980s and 1990s, and further enriched by US experience with markets in rights to emit sulphur dioxide and other pollutants.

Like many other orthodox economic theories, the theory underlying the new carbon market depends on a colonialist idea of property – the Lockean claim that rights to property should go to those who can add the most exchange value to it, "improve" it, or produce the most from it in commerce. This claim was used beginning in the early 17th century to justify seizing land both from conquered peoples in the English colonies and from commoners in England itself. It was then reinforced by the mistaken "tragedy of the commons" idea which has proved so destructive in policies applied to rural and forested areas of the South where institutions like the *minga* and common property in the *paramo* (see below) are so fundamental. This is the idea that when environmental goods are not privately owned and marketed, or have no price or a zero price, they will always become degraded in the absence of draconian centralized

government control. On this view, it is only holders of full private title to an environmental good who will manage it efficiently at the lowest possible cost to society, since they directly reap the monetary reward.

There are two problems with the idea that creating an enormous system of private property in carbon-cycling capacity is "lower-cost" or "more efficient" than the alternatives.

First, the underlying theory is wrong. It assumes, incorrectly, that all value is unitary, that all pollution can be uncontroversially quantified along with all other goods using the same measuring stick, and that to improve social welfare is to maximize gross domestic product. In addition, as even the theory's originator, Ronald Coase, was careful to stress, the costless, transparent market it required was only a figment of the imagination.

Second, the theory is inapplicable to climate. It assumes that governments will be able to ration rights to emit according to how damaging emissions are to climate. But there is no way even to begin to calculate the costs of GHG emissions or the value of carbon dumps, both because the probabilities of the various possible outcomes of continued emissions are unknown and because not all the possible outcomes themselves are known. Even those possible outcomes which are known are, in some cases, so catastrophic that they defy any attempt to measure them or put them into a hypothetical bargaining scenario. In addition, emissions themselves cannot yet be calculated with sufficient accuracy to do the necessary accounting. What's more, governments are proving unable to ration emissions rights strictly enough for there to be the scarcity a meaningful market requires, due partly to the lobbying power of corporations (see Table). Russia and the Ukraine have been granted huge amounts of property rights merely for having undergone economic collapse after 1989.

Finally, the credits to be supplied by carbon projects such as FACE PROFAFOR cannot be calculated even in principle, for three reasons: the probabilities of various carbon outcomes of such projects are unknown (that is, conditions of uncertainty apply); not all the relevant factors governing those outcomes are known (that is, there are likely to be many as yet undiscovered factors relating to flows of carbon into and out of the biosphere); and no uncontroversial estimate can be made of how much carbon such projects save over and above "what would have been the case otherwise". There are no possible ways of solving these problems.

Current attempts to create property rights in carbon dumps, in short, could never verify that they are making a contribution to solving the climate crisis. In reality, the carbon market promoted by the Kyoto Protocol seems to be less and less related to climate at all.

Source: LOHMANN, Larry, "Marketing and Making Carbon Dumps", forthcoming in 2005 in *Science as Culture*; LOHMANN, Larry, "Democracy or Carbocracy? Intellectual Corruption and the Future of the Climate Debate", 2001, http://www.thecornerhouse.org.uk.

According to Ross Gelbspan of the *The Ecologist*, emissions trading resulting from the Clean Development Mechanism can work within nations and individual corporations, if in such contexts it can be accurately quantified and effectively enforced. However, "…at the international level it breaks down, it cannot be monitored effectively" and there is no way to verify compliance with it, in addition to the fact that "it is not enforceable. Moreover it is plagued by irreconcilable equity disputes between the developed and developing economies…" [39]

An issue of equity that this author refers to is focused on provisions granted by the Kyoto Protocol that allow industrialized nations to buy limitless amounts of "cheap" reductions in poor countries and to bank them indefinitely into the future. Thus when developing nations are eventually obligated to cut or decrease their emissions they will be left with only the most expensive options. The author qualifies this as a new form of 'environmental colonialism.' [40]

[39] GELBSPAN, Ross; "Carbon Emmissions Trading, A permit to pollute or a step in the right direction?"; The Ecologist, 22/05/2002.

[40] ibid.

The Forest Stewardship Council
3. Plantation Certification

> *"...In spite of the fact that these mechanisms (for carbon trading) vary in complexity and design, they are all animatedly promoted by the flourishing industry... developing to serve these new markets..."* [41]

The world timber market has a tendency to link ecological concerns with trade strategies, leading to the appearance of various forms of certification or Green Labelling systems. [42]

Due to the increasing environmental "*awareness"* that occasionally determines options to be taken by certain consumers, the market has now found a way of reconciling environmental concerns with industry interests, and of achieving a "plus" in the price of its products.

> *"...as a result of this demand, certification and self-certification programmes have proliferated for timber products…The Forest Stewardship Council (FSC) has been set up as an international entity to accredit certifying organizations, with the aim of guaranteeing the authenticity of their certifications. In all cases, the certification process is initiated voluntarily by the owners of the forests (or plantations) and those responsible for forest management, who request the services of a certifying organization..."*

3.1 Is Certification a Guarantee?

The Forest Stewardship Council or FSC, grants a "Green Label" to timber or forest exploitation activities and is based on the application of a set of Principles and Criteria that allegedly relate and give equal importance to the economic, social and environmental aspects of forestry and timber exploitation activities. Thus, this Council comprises three chambers that represent these aspects, each having apparently the same weight within FSC policies and decisions.

Forestry certification is presented as a guarantee of *Good Management* of forestry resources in the eyes of the final consumer. However, it is recognized that the assessment is not necessarily strictly in line with its own Principles and Criteria.

> *"...FSC and FSC-accredited certification organizations will not insist on perfection in satisfying the principles and criteria. However, major failures in an individual Principle will normally disqualify a candidate from certification. These decisions will be taken by individual certifiers ...Some flexibility will be allowed to cope with local circumstances..."* [43]

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41 BACHRAM, Heidi, "Climate Fraud and Carbon Colonialism: The New Trade in Greenhouse Gases"; *Capitalism Nature Socialism*, Vol 15, Number 4. December 2004.

42 Acción Ecológica, Boletín *Alerta Verde No 137: "LA INSUSTENTABLE CERTIFICACIÓN FORESTAL",* November, 2004.

43 FSC Principles and criteria for Forest Stewardship, http://www.fscoax.org/pag_esp.htm

The voluntary certification systems for forestry management are able to provide some benefits to companies. Among them, the company that obtains certification and presents a green label is able to improve its public image and credibility – particularly in the international context – regarding its operations and forestry management.

The FSC has promoted 'Buyer Groups' for certified products, creating specific markets for these products. However, Chris Van Dam, an FSC consultant expert affirms that this process has still many outstanding issues: the extra charge for certified products that in some way would compensate the greater costs associated with certification, announced or suggested during the first years, has not been verified (Robinson, 1999). Moreover, the certification process has managed to exclude small groups that cannot comply with the requisites:

> *"…Certification is an increasing requirement, but only on the international timber market. It is of no value on national or regional markets, or for non-timber forest products. This means that in general it has scant attraction for poor communities… so far the main clients of FSC have been the large private and public companies that have found a way to differentiate themselves even more from other producers…[other authors] argue that this growth conspires against the credibility of the instrument and against the declared social objectives, as it leaves the weakest along the way and ends up by excluding them… it is unlikely that certification, as a market mechanism will have any effect on small producers and indigenous communities. On the contrary, it seems to be a factor of greater inequality:* ***a****. Because it excludes the poorest and the weakest as they cannot fulfil the requisites;* ***b.*** *Because it improves the conditions of market insertion in the markets of the bigger companies…"* [44]

The FSC certificate is granted by "*independent*" certifying companies that are accredited by FSC and hired by the companies interested in acquiring certification. Here, the real independence and transparency of the certification process are in doubt.

FACE PROFAFOR announces that it has been visited by, and that its activities have been verified by, SGS Qualifor, a body *independent* from FACE, a private company and third party with no link of any kind with FACE, whose independence and quality of judgement are guaranteed due to its experience.

However, we doubt the impartiality of the certifier SGS that in this process becomes both "*judge and plaintiff*" in a game of power, on having to decide if a forestry company can be certified at the same time it is hired by the same company. "*Any certifying company knows that a too rigid position…means that other potential clients, in the long run, will choose other more lax or more flexible certifiers …"* [45] As pointed out by Johansson et al (2000), "*it is as if the students could hire the teachers to mark them at their exams."* [46]

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[44] VAN DAM, Chris, "Certificación Forestal, Equidad y Participación" Document prepared for the Electronic Conferenced of the Red Participación CODERSA-EC LNV, 5 August to 1 September 2002. cvandam@elsitio.net

[45] It is not surprising that an important forestry company in Latin America decided, before choosing the company to certify it, to visit Brazilian companies that had been certified by the four most important certifiers at the time, to find out which one would be the most simple. VAN DAM Chris, ibid.

[46] ibid.

Certifying and Verification Companies are Private Entities

Verification companies have to make a profit. Among other things, this implies that:

In the first place, there is great interest in promoting rapid growth of the area of plantations and native forests to be certified, even though this is in detriment to issues such as quality, equity, sustainability of the process (and the capacity of FSC to monitor the quality of the certifiers' work). Furthermore, any new client implies an annual income from monitoring for the next five years and if a friendly certifier-client relationship is maintained, a relationship that goes much beyond this.

Secondly, there is an interest in having the most important companies as clients, those having the largest areas of plantations. And even more so if they have plantations and manage them well. All these are conditions facilitating certification and providing an opportunity for better invoicing.

In the third place, in a relatively reduced market (in relation to the number of accredited certifiers, eleven), certifiers compete strongly among each other (De Camino y Alfaro, 1998) –in addition to the competition between FSC and other certification schemes- …leading to the existence of all types of 'commercial strategies' to take the largest portion of what is – for now – a limited market. Among other factors, it is a "race towards non-excellence – dropping standards" – to attract clients (Bass, 1999).

…certifiers do not have any commitment towards the companies they certify and with the fact that they benefit or not from this: some certifiers encourage and tempt producers with a view to certifying them. (Scrase, 2000, De Camino & Alfaro, 1998).

Taken from: VAN DAM, 2002 [47]

3.2 Certification of FACE PROFAFOR Plantations

In December 2001, PROFAFOR received the certification granted by SGS[48] for the management of 20,000 hectares of plantations in the Ecuadorian Sierra, where most of the forestation projects carried out by PROFAFOR are located.

Plantation management was evaluated in 1999 by SGS Qualifor, and the entity decided that PROFAFOR complies with FSC "*Principles and Criteria*" and therefore granted it the Forest Certification Label. To keep this certification, the company is subject to annual visits from the verification organization.

Regarding Carbon Absorbing Certification, this same verification company (SGS - Société Générale de Surveillance), hired by FACE PROFAFOR, issued a certificate in the year 2000 on the

[47] Chris VAN DAM, "Certificación Forestal, Equidad y Participación" Professor of Environmental Policy and Sustainable Development, National University of Salta, ARGENTINA, Member of FSC. Document prepared for the Electronic Conference of the Red Participación CODERSA-EC LNV, 5 August 1 September 2002.

[48] *SGS Societé Generale de Surveillance*, A Swiss Certifying Company.

Project Design in the name of the Programme FACE de Forestación del Ecuador S.A., PROFAFOR. The projected number of GEG credits[49] or units of emission reduction from the project's activities totalize 2.49 million tons of CO2, not exempt from risk.

According to the company, **132** contracts have been signed within a "voluntary certification group," administrated by PROFAFOR. Certification obtained is group certification, an "umbrella certification," whereby the company is responsible for relations with the verification company and organizes compliance with the aspects that are revised at each yearly visit.

In order to fulfil the requirements of the SGS verification company, PROFAFOR prepared a management plan for each contract and installed monitoring plots. It also maintains that it organized training courses for the technical personnel and partners in the project.

According to PROFAFOR, in its "Voluntary Certification" group:

> "…all the owners decided to participate, which implied certain benefits for them and certain commitments…" [50]

As we were able to confirm during visits to communities, FSC Certification does not guarantee that the communities within a certified project will receive economic, social and environmental benefits[51]. In the case of indigenous communities in the Ecuadorian Andes, it is precisely the contrary, and rather they are obliged to absorb the investment costs of the certified activities of FACE PROFAFOR.

On obtaining certification, the company achieves, in the international context, a public image showing environmental respect, under the assumption that certification guarantees that an industrial practice is environmentally friendly and that the natural resources are being *correctly* exploited.

Certification makes the negative impacts generated by the project invisible and leaves no place for possible claims by the communities affected by certified projects. It makes their claims invisible and if they do manage to get out and come to public knowledge, their words have to face the strength and the weight of the "Green Label," that weakens the credibility of local communities' reclamations and struggles.

An important requirement for FSC, Principle 1.6, is that:

> *"…forest managers shall demonstrate a long-term commitment to adhere to the FSC Principles and Criteria…"*

In the communities visited, none of those interviewed knew of the existence of the FSC, or of its Principles and Criteria, and even less that a *long-term commitment* to these Principles and Criteria could be expected.

When a community leader from the indigenous community of Cañar, who has had an agreement with PROFAFOR for over six years, was asked if he knew what "*certification*" of his community's

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[49] GEG Greenhouse Effect Gases.

[50] PROFAFOR, Luis F. Jara, Com. Pers.

[51] "… The goal of the FSC is to promote environmentally responsible, socially beneficial and economically viable management of the world's forests, by establishing a worldwide standard of recognized and respected Principles of Forest Stewardship." FSC Web page.

plantation meant, he replied that to obtain certification, the community's plantation had to be registered with the Ministry of the Environment.

> *"...they have to register the plantation with the Ministry of the Environment... to certify... With certification we get them to write in the Ministry's archives that we have the plantation there... if we do not register we could have problems. In the event they want to sue us or claim the land for cattle-raising activities, for them not to damage the plantation or want to work the land..."* [52]

[52] Caguanapamba Commune.

On a Local Level

Monoculture Tree Plantations that generate Social and Environmental Impacts

"…On a local level, the CDM creates "perverse incentives" that provoke or prolong carbon emissions, while producing carbon credits for projects originally aimed at reducing emissions…"

CDM Watch

4. FACE PROFAFOR's Tree Plantations

4.1 What PROFAFOR Offers the Community

In order to establish forestation contracts, the FACE PROFAFOR company has reached the communities to promote the plantation "business." The forestation project is presented as a net source of income and employment.

> *"…Foreigners arrive… saying that they know that the commune has vast* paramos *and they want to establish a plantation… they moved us by saying I don't know how many thousands of dollars would come… you know, sometimes we country people, we don't know, we fall for it naively…*
>
> *At an assembly this engineer came, he told us that thousands of dollars would enter the commune, and that we are going to have (money) to go and plant trees…Afterwards we are going to have sources of work till after the harvest, that we are going to collect who knows how much money, and we accepted. The Assembly signed…"* [53]

To establish the contract, the communities are offered "*incentive*" money per planted hectare; the company also offers to provide the plants, technical assistance and training to carry out the plan. PROFAFOR keeps the carbon fixation rights and property and the timber would be for the community.

According to the manager of FACE PROFAFOR,

> *"…We have contracts with the land holders and the contract establishes in general terms that PROFAFOR keeps the rights and property of the carbon fixed by the plantations and the beneficiary or la°nd holder keeps all the timber and its by-products, by-products are mushrooms, resins, fire-wood, ornaments, all the wood from thinning and the final harvest…"* [54]

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[53] Commune of San Sebastián de SigSig.

[54] JARA, Luis Fernando, Com.Pers.

The *paramo* communities are presented with the *possibility* of accessing the total income from the sale of the timber. Within the by-products, fire-wood is a resource that is valued by the indigenous Andean communities that use it as fuel.

The economic incentive offered for the establishment of the plantation – added to the possibility of accessing a new "high performance" productive activity generating employment in the community – becomes the main factor in the communities consenting to sign the agreement and give up their land for the establishment of FACE PROFAFOR plantations.

The possibility of peasant communities receiving economic income from forestry activities is over-dimensioned and they consent to sign the contract without a precise knowledge of the *benefits* that they will receive from harvesting the timber. As has been documented, PROFAFOR possesses this information from feasibility studies for each contract, but:

> "*…this information has not been transferred to the communities "to avoid creating expectations on future income that may not be fulfilled…*" [55]

4.2 What the Community Receives:

4.2.1 Economic income?

On promoting the benefits of establishing a contract with PROFAFOR and presenting the amount of money that would enter the community, an amount to be paid per hectare and the number of hectares of communal land that would be devoted to the project, are negotiated. These values are multiplied and figures appear that convince the communities at first sight.

The range of the amounts that FACE PROFAFOR pays the land holders per planted hectare is quite wide and depends on the species and on the zones. In this range, the highest amounts paid by the company go to contracts signed with private coastal region owners for planting native species and the lowest go to pay the planting of pine and eucalyptus by Sierra communities.

Payment per planted hectare up to the year 2002, when new contracts were no longer established

> "*…varied between $220 and $467 dollars per hectare… Payment of $467 dollars per hectare was for the plantation of native species along the coast, and $220 dollars per hectare was paid for planting pine and eucalyptus in the Sierra…*" [56]

For the communities contacted that signed contracts with the company between the years 1997 and 2000; payment fluctuated between *$100 and $189 dollars per planted hectare.*

After having negotiated the price to be paid per planted hectare and having obtained – and offered – the total figure of the contribution to the community, the *cost* is deducted of the plants and of technical assistance during the three first years of the establishment of the plantation[57] – both provided by PROFAFOR to the "*beneficiaries*".

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[55] ALBÁN, M. y María Arguello, 2004. *Un análisis de los impactos sociales y económicos de los proyectos de fijación de Carbono en el Ecuador*: *El caso de PROFAFOR-FACE*. IIED, London, United Kingdom.

[56] JARA, Luis Fernando, Com.Pers.

[57] PROFAFOR hires the production of seedlings from private nurseries.

This is a skilful discourse that first offers an amount and then deducts values amounting to almost half of the first offer. The communities are paid almost half of what they were initially offered.

Offered Income vs. actual income perceived by the community
($ = US$)

Community	Area hired	Payment agreed per hectare	Total amount offered	Cost of Plants and Technical Assistance deducted	Amounts disbursed to the community	Percentage deducted
San Sebastián de SigSig	400 ha	$ 189	$ 75,600	$ 36,800	$ 38,800	49 %
Pisambilla	300 ha	$ 165	$ 49,500	$ 22,500	$ 27,000	46 %
Mojandita Avelino Dávila	130 ha	$ 165	$ 21,450	$ 9,750	$ 11,700	46 %

Source: PROFAFOR Forestation contracts / Prepared by Acción Ecológica.

When the Community of SigSig asked to check the accounting of the agreement, it did not get any answer from the company.

> *"…I also asked Engineer Jara for a report – if for the Commune's agreement…an amount of 75,000 dollars came out, and they give us an amount of 30,000 and some odd dollars, and what is done with the rest?...let them explain how much a technician earns… He told me that we do not have the order or the capacity to ask for these reports…it is an administrative matter of their own…"*
>
> *"…Analyzing we looked for what they had to give according to the agreement, the plants had to come at a low cost… the plants had risen triple the price… they put the price, they had doubled, tripled the price… and even in the contract with the nursery they had to deliver the plants on site…however it was the commune that had to transport the plants…"* [58]

After having deducted the "price" of the plants and of technical assistance[59], 80 per cent of the resulting amount is delivered in three instalments during the first year following signature of the contract. To receive this percentage, the community must show that it has fulfilled the contracted forestation. One of the clauses of the contract establishes the following:

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[58] Commune of San Sebastián de SigSig.

[59] "Services" provided by PROFAFOR.

> *"…it is considered that the BENEFICIARY has not fulfilled the activities foreseen if it is necessary to replant over 25 per cent of the plants planted…*"

The remaining 20 per cent of the money offered is handed over to the community "*following complete fulfilment of the activities foreseen"* by the company for the second and third year following signature of the contract.

According to the contracts, the communities are engaged to use the resources provided by FACE exclusively for the Forestation Contract's objective, in compliance with the PLANS. What happens is that the economic input has not been enough to sufficiently cover the expenses that the communities must incur to complete the establishment of the plantations.

In the case of the Caguanapamba community, the leaders that signed the contract with the company did not manage the funds received appropriately. The community members who worked in the first planting did not receive payment and many seedlings were lost. It should be noted that when plants are lost because they "do not adapt" the community has to take on the cost of new seedlings for re-plantation. This happens quite frequently, either because of the quality of the plants or because of critical climatic conditions, as we are talking of plantation areas located on the slopes of the Andes at altitudes of over 3,000 m.a.s.l., where it is very windy and there are frosts and very low temperatures. Mary Milne, of the Centre for International Forestry Research (CIFOR) has documented the *re-plantation rate* of the PROFAFOR project: "the re-plantation rate for these communities is calculated at between 15 and 30 per cent and costs range between US$865 and $5820, which have to be absorbed by the communities." [60]

The present leaders have to take on various commitments. The first and urgent one: to fulfil commitments with the people who work and who are not receiving payment. They also have to fulfil the agreement signed with the company.

In order to service their obligations with the community members, paying "a debt that is not theirs", they hope to receive the last instalment from PROFAFOR by completing the plantation for the total extension of the contract, including those that were lost in the first planting.

The leader has to pay the wages of his people and complete planting the number of plants agreed on in the contract in addition to fulfilling other tasks established in the Management Plan, among which the construction of a "fire break" for the prevention of fires. For the construction of the fire break – in which the "pajonal"[61] protecting the soil of the Paramo is lifted and strips without vegetation are established surrounding the perimeter of the plantation, leaving the soil totally exposed[62] – he had to rent a machine with community funds[63] and organize a Minga to finish off the job (See box on MINGA).

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[60] In ALBÁN M. et al. 2004.

[61] Translator's note: *pajonal*is the main component of the *paramo*. It consists of grasses of the *Festuca, Stipa, Calamagrostis* and *Deyeuxia* groups and some plants in cushions.

[62] It has been estimated that Paramo soils store 1700 tons of carbon per hectare. The Paramo ecosystem, if the soil is considered, can store more carbon than a tropical forest. With bad management of the Paramo, and especially if the soil is exposed to the air, the surface soil dries out and decomposition increases. This results in oxidization of the organic matter and carbon emission to the atmosphere. Hofstede, Serie PARAMO 1.

[63] The community paid US$600 for fuel and rental of a machine for three days at a cost of US$12 per hour.

He is now waiting to receive the last instalment pending and with this pay the people who worked in the first planting. As he said:

> *"…PROFAFOR gave us an amount, according to the contract that has been made…there is a part that still has to be collected,US$2,600… the previous leadership made the companions work offering them payment, the companions worked, they were not paid…So now what do I have to do, I have to collect the last instalment now… the plants have to be planted, re-planted, to be able to collect what is left…with that pay off someone else's debt… With re-planting I pay the first plantation: re-planting is an additional planting, but the money is not additional. …"* [64]

PROFAFOR's "*beneficiary partners*" do not receive any real benefit, in one case due to the internal administrative problems of the community; but in general because the form of delivering the *incentive* leads to it being rapidly consumed and not invested in activities other than the running expenses of plantation establishment, for which it is also insufficient, as will be seen further on in the case of another community.

> *"…this incentive is the only one that the beneficiaries will receive in the 25 years of life of the plantation and it is delivered in instalments according to reforestation carried out. This form of delivery does not enable the families to save, as most of it is allocated to the payment of running expenses…"* [65]

In the event that the trees manage to survive, harvest will take place after 20 or 30 years. This is a very long time for peasants and local communities, but the project requires their contribution in the form of "work" or labour for the maintenance of the trees. What is more serious is that the partners – which PROFAFOR calls *beneficiaries* – have little or no information on the economic benefits they will receive for harvesting the timber.

4.2.2 Training?

An important document throughout the tree plantation activity is the Management Plan. This document, prepared by PROFAFOR establishes activities planned for the next 10 years, and sets out explicitly the actions the community must take for the establishment and maintenance of the plantation over this period. The preparation of this Plan obeys **Principle 7** required by the certifying body, **the FSC,** that requires it be written, implemented and up-dated. It clearly establishes management objectives and the means to reach these objectives[66].

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[64] Commune of Caguanapamba.

[65] ALBÁN, M. y María Arguello, 2004. *Un análisis de los impactos sociales y económicos de los proyectos de fijación de Carbono en el Ecuador*: *El caso de PROFAFOR-FACE*. IIED, London, United Kingdom. Page. 32.

[66] According to FSC requirements, the Management Plan shall provide:
a) Management objectives.
b) Description of the forest resources to be managed, environmental limitations, land use and ownership status, socio-economic conditions, and a profile of adjacent lands.
c) Description of silvicultural and/or other management system, based on the ecology of the forest in question and information gathered through resource inventories.
d) Rationale for rate of annual harvest and species selection.
e) Provisions for monitoring of forest growth and dynamics.
f) Environmental safeguards based on environmental assessments.
g) Plans for the identification and protection of rare, threatened and endangered species.

Item 7.3 of FSC regulations provides that:

> *"...Forest workers shall receive adequate training and supervision to ensure proper implementation of the management plan..."*

PROFAFOR organizes and sponsors regional training workshops inviting two members of the leadership of each community. These workshops are held in hotels or on other premises in nearby cities. Due to the annual rotation of community leaders, in most cases the training process cannot be effectively maintained. Furthermore, training is seen as insufficient by the population because it involves theoretical aspects of plantation management. This is the reason why the communities find they have no other option than to hire people from outside their locality to carry out the tasks required by the Contract and Management Plan. One of the people interviewed stated:

> *"...Those who are hired also need technical assistance...it would be good to hire people from here, but trained...not only technical training, but field training on the trees themselves, this is the training we want, going to the plantation...technical and practical, both things are fundamental ...."* [67]

4.2.3 Employment?

The offer of "*job generation"* in this plantation project is not only fictitious but in fact has become a negative impact that has to be absorbed by the community economy in order to fulfil the contract with FACE PROFAFOR.

The communities have had to hire people from outside to carry out some of the activities, either because they do not possess the necessary skills to perform the work in conformity with the technical specifications required by the company in the management plans[68], or because the plantations are located in land that is hard to access and under extreme climatic conditions. Thus, according to an inhabitant of the commune of Chuchuqui:

> *"... they paid for dibbling – only for Pine did they pay, not for Eucalyptu – they did not pay me, I worked for Minga... Here we could not work, they hired people from Quito and Chimborazo and the community paid the workers, another part was done for Minga... at that time it was raining, you couldn't work in the Paramo..."* [69]

Therefore what happened was that the funds received were allocated to hire and pay people from outside the community[70]. If in spite of this, the forestation activities the community had engaged itself to carry out were not completed, the community appeals to "*Minga*" to fulfil its

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h) Maps describing the forest resource base including protected areas, planned management activities and land ownership.
i) Description and justification of harvesting techniques and equipment to be used.

67 Chuchuquí Community, Province of Imbabura.

68 Forestation activities are totally foreign to the Andean communities that practice grazing and subsistence farming.

69 Chuchuquí Community, Province of Imbabura.

70 In a clear breach of FSC PRINCIPLE No. 4, on COMMUNITY RELATIONS AND WORKERS' RIGHTS and particularly item 4.1 which states that the communities within, or adjacent to, the forest management area should be given opportunities for employment, training, and other services.

contractual obligations. A study by IEED on the economic impacts of forestation *sponsored* by PROFAFOR coincides with this finding:

> *"...employment in the plantations is temporary and in most cases done through Mingas..."* [71]

MINGA

Minga is an old resource, typical of the indigenous communities of the Andes. Among the Quichuas of the Andes, the Mingas join efforts and work, seeking to obtain a specific collective material objective. It is a complex and complete mechanism for social interaction in which the whole community is mobilized: adults, women and children, and one day of labour is dedicated exclusively to this activity

Generally the Sierra communities establish one day a week for Minga, and it is thus that various tasks required by the community are carried out (i.e. such as the construction of access routes, irrigation channels, a school or a health centre, in addition to community agricultural activities such as planting and harvesting).

By definition Minga does not receive a monetary remuneration and it is rather a kind of "reciprocity" within the system. When Minga is granted to achieve individual purposes, it has to be "returned." The nexus or relation between the *Mingado* – or beneficiary – and the *Mingueros* – or workers – implicitly maintains the reversal of these roles in the future.

4.2.4 Coercive and Unequal Contractual Conditions

On signing the contract the community engages itself to take on the care and maintenance of a tree plantation for periods of between 20 and 30 years. The more recent contracts established by PROFAFOR establish longer terms, of up to 99 years. This is of concrete utility to the company that has to find a way of guaranteeing the *permanence* of the carbon it intends sequestering from the atmosphere and later trade as *Credits* on the international market.

Within the negotiation process irregularities may be found. According to the company, the procedure for the establishment of a contract between PROFAFOR and a community requires the approval of the majority of the Assembly. However a community clearly maintained that the agreement signed with the company was not valid. It had been signed by 50 people at a time when the community had over 200 families.

> *"...when the agreement was signed in 1998, it was only signed by the Assembly and 50 people...the explanation by the Engineer was that at that time there were*

[71] ALBÁN, M. y María Argüello, 2004. *Un análisis de los impactos sociales y económicos de los proyectos de fijación de Carbono en el Ecuador*: *El caso de PROFAFOR-FACE*. IIED, London, United Kingdom.

> *only 50 people...I was secretary in 1997, at that time we had registered over 200 community members, and after that they signed the agreement with 50. The majority were not there...”* [72]

In the revised contracts, the company has taken certain precautions to discourage a breach of contract. According to Clause Five:

> “*The RESIDENT ENGINEER may terminate a ...Forestation Contract ahead of time and unilaterally in the case of a breach of obligations by the BENEFICIARY... and claim payment of the COMPENSATION by way of the penalty clause established under Clause Six …*” [73]

Clause Six or the Penalty Clause engages the communities to pay disproportionate economic values in the event of a breach in the obligations derived from the contracts.

Through this clause PROFAFOR acquires the right to unilaterally terminate a contract and demand as COMPENSATION the payment of amounts that are greater than those initially offered and that treble the amounts disbursed to the communities, as will be seen from the following table:

Penalty Clause Amount ($ = US$)

Communities	Amounts initially offered	Amounts disbursed to the Community	Amount of the Penalty Clause	
Caguanapamba		$ 15,716	$ 42,660	271%
San Sebastián de SigSig	$ 75,600	$ 38,800	$ 108,000	278%
Pisambilla	$ 49,500	$ 27,000	$ 81,000	300%
Mojandita Avelino Dávila	$ 21,450	$ 11,700	$ 35,100	300%

Source: PROFAFOR Forestation Contracts / Prepared by Acción Ecológica

This clause converts the contract into a tool for coercive contracting that obliges the communities to serve company interests.

> *“...when I told the Engineer Franco Condoy that we wanted to undo the agreement, he told us: ‘You cannot rid yourselves of the agreement, the Commune is mortgaged ...’”* [74]

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[72] Commune of San Sebastián de SigSig.

[73] “In particular, but not exclusively, breaches of obligations by the BENEFICIARY are considered to be the following:

- the lack of execution of any of the activities foreseen in the plans.
- anticipated use or sale…of forestry resources.
- any act or omission that places in jeopardy the subsistence of forestry resources.
- delays in depositing in the BANK ACCOUNT the percentage of the product of use or sale of forestry resources from the AREA …” Taken from: PROFAFOR, Forestation Contract.

[74] Commune of San Sebastián de SigSig.

It is mistake by the engineer representing PROFAFOR to maintain that the commune "*is mortgaged*", as communal property in Ecuador is not subject to mortgages. However, this overpowering affirmation should be understood in a context of relations of power, where the interests of a company and the situation of peasants are in conflict.[75]

In the year 2001 SGS Public Summary, when PROFAFOR obtained FSC certification, the verification company had already identified deficient capacity (or insufficient training) of FACE PROFAFOR Technical Assistants in providing adequate support to the communities in relation with social implications of the contracts[76] . This same document sets out as one of the PROFAFOR project's strong points "*The participation of local communities in decision-making…*" [77]

4.3 What PROFAFOR obtains from the Communities

When a community signs a Forestation Contract with FACE PROFAFOR it is accepting various unequal conditions, concealed under the promise of receiving future income for an unknown activity such as timber exploitation.

Conditions are unequal because FACE PROFAFOR reserves 100 per cent of the Rights for Carbon absorbed, while the Communities take on the totality of the Responsibilities for Maintenance of the Sink for 30 or more years.

4.3.1 The Land

"…We cannot touch or do anything on the area signed over…" [78]

In its public discourse, PROFAFOR maintains that forestation activities are carried out on lands suitable for forestation, *degraded from excessive use and where subsistence activities such as agriculture or cattle raising are not profitable.* [79]

The plantations of the communities we visited are located in the communal property *paramos*[80] where agriculture is difficult mainly due to the extreme climatic conditions and because of the distance from populated centres[81] , but in no case are they *degraded* soils.

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[75] Relations of power that reproduce long-standing defects inherited from domination systems – *such as the Hacienda System in Ecuador* – that determined and still determine the matrix of certain inter-ethnic relations in the American continent.

[76] Which obtained a qualification of MINOR CAR 7.3, (CAR: Minor Corrective Action), which did not prevent certification and is similar to an *admonition.* The company must amend or at least offer to try to amend.

[77] QUALIFOR Programme. FM Main Assessment Report: AD65. April 2000 Page 25.

[78] Commune of San Sebastián de SigSig.

[79] FACE ANNUAL REPORT 1995.

[80] "The word Paramo refers to "high altitude plains or barren plateaus, without woodlands." This word was brought to South America by the Spaniards and is applied to the unprotected zones of the Andean Cordillera, above the tree-line, in areas covered by grasses, which also give it the name of "Andean Pajonales". In fact, the Paramo is a high Andean belt where, because of its orographical and climatological factors, a type of vegetation called "Paramal" has originated. It is also the denomination of a specific ecological formation (natural upper Andean grasses) of the Northern Andes (North of Peru, Ecuador, Colombia and Venezuela). It is an altitudinal band to be found at between 3,200 metres above sea-level and the nival belt, some 4,700 – 4,800 m.a.s.l. in Ecuador, although generally speaking it is said to be between 3,000 and 4,800 metres. It is distinguishable from the "Puna" (which is a South American indigenous voice also referring to the high Andean plateaus), basically because of the xerophytic (dry) nature of the Puna vegetation, geographically corresponding to the Southern Andes (Peru, Bolivia, North of Chile and Argentina). The climate in the Puna

These are areas where productive activities do take place, such as grazing, but the communities assigned the land for the establishment of plantations because in other zones of communal property the land has been divided up and the families grow their crops there. In the signed contracts, it is required that the land devoted to forestry activities should not be used for any other activity except maintenance of the plantation for the 25 to 30 year term of the contract.

> *"...Even putting a low rent, let us say 50 cents per hectare per year, for 20 years, we will see how much it is, to see if we are going to earn money or lose it..."* [82]

These are lands for which FACE PROFAFOR pays no type of rent but it is precisely where the "Carbon Fixation and Absorption" that they are trading on the international market, takes place. Tracts of land owned by the community are being assigned for forestation with exotic species for the production of Carbon Credits for terms of between 25 and 30 years.

According to what has been signed in the contracts and for the purposes of carbon certification, the land assigned to forestation may only be used for this purpose. No other productive activity is permitted on these lands.

4.3.2 The Community's Work and Money

According to the International Labour Organization, decent work:

> *Decent work sums up the aspirations of people in their working lives. It involves opportunities for work that is productive and delivers a fair income, security in the workplace and social protection for families, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men.* [83]

According to the above definition the "*work"* offered and promoted by FACE PROFAFOR[84] is very far from being decent or dignified.

Over six years after having signed the contracts with the communities, the funds offered by PROFAFOR have already been consumed, in the attempt to establish the plantations, with tasks still to be completed.

The "*incentive*" amounts offered to the *beneficiary* communities should have covered, *at least* the totality of the daily wages or salaries of all the people participating in activities for the establishment of the plantations – plotting, dibbling, planting, re-planting and construction of the fire-break barrier – and at least the expenditure on food and transport arising from these activities.

This has not happened and the communities, in addition to having displaced their own productive activities such as grazing and social resources such as the Minga, to the service of PROFAFOR;

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is dry and cold, with great temperature variations throughout the year, while the climate of the Ecuadorian Paramos does not have such extreme variations in temperature and humidity is very high. VIDAL p.29.

81 In the case of the two communities visited a two to three-hour walk was calculated to reach the location of the plantation.

82 Commune of San Sebastián de SigSig.

83 http://www.ilo.org/public/english/decent.htm

84 In its web page, PROFAFOR maintains that it "…Employs close on 700,000 days of work in the Ecuadorian communities…"

have allocated community money to cover the cost of establishment and maintenance of the plantation, attempting to fulfil their contractual obligations.

The San Sebastian commune of SigSig – in the Province of Azuay – signed a forestation contract with FACE PROFAFOR in 1998 for 400 hectares. According to initial calculations supplied by the company, the commune was to receive about $75,000 dollars for the plantation of 400 hectares of pine trees.

According to people interviewed, the agreement is not legitimate as it is signed by a quarter of the number of community members – fifty signed when there were over two hundred registered – and not by the majority of the Assembly, a body governing communal society. [85]

The plantation area is located in a place called Amorgeo[86], at approximately 3,700 m. above sea-level. The location is a three to four-hour walk from the populated centre.

Work for the establishment of the plantation (plotting, dibbling, planting and construction of the fire-break) was carried out between June 1998 and December 1999 for the totality of the hectares included in the contract. The species of trees planted was *Pinus patula*. A percentage of the plants did not take and re-planting was hired out by the community with the funds supplied by PROFAFOR. The community built a house in the area of the plantation mid-1999 and a guard service was hired for the first two years.

In 2000 a fire took place that affected a little over 86 hectares of the plantation, and in 2004 some 80 hectares more caught fire according to PROFAFOR technical reports. According to the community, the fires have burnt down close on 300 hectares so far, and what is still standing amounts to 100 hectares.

When the first fire took place, the community took on the costs of re-planting. As this was not foreseen in the agreement, PROFAFOR supplied the plants and the community provided labour, including transportation and food for the people working in this activity.

With the first payment provided by PROFAFOR (80 per cent of the contract) the community paid for three plantings: one for the establishment of the plantation – of 400 hectares in 1998 and 1999 – and two re-plantations, one due to non-adaptation and the other to the fires.

According to the original agreement, 20 per cent of the funds agreed on still have to be disbursed. This should have been paid to the community three years after the signature of the contract. Six years later, these funds have still not been received. Furthermore, to disburse the remaining percentage, the company is suggesting that the contract be modified and the extension hired reduced to 300 hectares. According to the community the company argues that it has "over paid" and is even requesting a refund.

When the second fire broke out in 2004, the community was requested to work in another *re-plantation:*

> *"...Engineer Franco Condoy demanded that we proceed to re-plant, I said no, we are not going to do it... one season we already accepted, this was when he said*

[85] The agreement was signed using as a reference a document from the Property Registry and some false Title Deeds. This information has now been recovered in new Deeds.

[86] This is the location of the Amorgeo Project for catchment and distribution of water to fourteen communities in the zone (Gutun, Pucundel, Tuyupamba, Nari, Chobshe, Pamarcay, La Unión, Puente Toral, San Antonio, Matacar, Habaspamba, Tudahuaico, Ualliro, Cerro Negro).

that the commune was mortgaged, we almost accepted, from the fright of the mortgage..."

The community of SigSig proposed analyzing the forestation contract. They saw that the company financed the plants and the technical assistance with the money initially offered to sign the contract. After having incurred in much expense and effort only to complete the establishment of the plantation, work is still needed and the plantation has to be maintained for nearly 15 more years until the time foreseen for the harvest. At that time, if they do not want to continue carrying out forestation activities for the company in their Paramos they must hand over almost one third of the income generated from the sale of the timber to PROFAFOR.

They found that CLAUSE FOUR of the contract establishes that once the harvest is made, one of the OBLIGATIONS OF THE BENEFICIARY is to deposit the equivalent of 30 per cent of the total income from use or sale of the forestry resources in PROFAFOR's bank account if they do not want to renew the contract.

In the event that the *Beneficiary* with its own means carries out a further plantation of the area on the basis of a new Forestation and Management Plan approved by the company, the above mentioned amount would be refunded to the community. That is to say, if the community does not wish to continue planting its Paramos after the harvest, it will lose 30 per cent of the income.

They also investigated the impacts on soil and hydrology of pine plantations. Then they decided not to continue with forestation activities.

"...The money came, people were paid to plant... our money ended. We made an assessment and we were surprised... it was like a bucket of cold water. According to us we had earned money, but on doing accounts we realized how much money we have put in from our organization, and the plants are still small...it has been six years. If now we have no money left, we still have to care for the plants for another twenty years, we have to look for a warden to look after the plants and pay him, we have to prune, we have to put down manure, all the care and then the harvest. They also said they would not be responsible for finding a company to buy the timber, we ourselves had to look for the market, so it was an absurd situation. If we do not want to continue with them or to continue planting pine there, we have to give 30 per cent of the harvest to PROFAFOR, and we will keep 70 per cent. How is that! We are depleting our land, we are providing labour, harvesting and also giving 30 per cent..."

During the workshops that took place with the communities, a participative exercise took place, seeking to give a dimension to the *exchange* between PROFAFOR and the communities.

A matrix was prepared considering the activities required for each stage of the plantation: Establishment, Maintenance and Harvesting.

Work was done with the community of the Commune of San Sebastián de SigSig and activities that the community had carried out in accordance with the Management Plan were revised one by one. An attempt was made to set down the approximate cost of each activity and the following information was obtained:

FISCAL YEAR EXECUTED ACTIVITIES - PLANTATION OF SAN SEBASTIÁN DE SIG SIG COMMUNE

ACTIVITIES CARRIED OUT	Amounts US$	Year	
ESTABLISHMENT OF THE PLANTATION			
Access	833	1998	Access to the plantation area was along an already built access route. However legal action against the community had been filed regarding this route. With the money provided by PROFAFOR, the "Right of Way" was paid.
Plotting Dibbling Construction of a Fire-Break	15 000	1999	Execution of these tasks for establishment were outsourced. PROFAFOR coordinated with the contractor who was also responsible for transporting and feeding the workers who were not from the community.
Replanting (due to non adaptation) Labour Transport Food Tools (individual)	7.500 360 2.250 800	2000	**Re-planting** due to non adaptation of the seedlings was done under Minga. Three or four hundred people went up every Saturday for 5 weeks, that is to say 1500 days of work. During this time the wage for a day of work was 5 dollars. Three trucks were hired to transport the people, at 24 dollars each. Regarding food, we calculate one dollar fifty per person per day. Each community member took his own tool, if we calculate "usage," perhaps some 100 hand hoes were damaged – or what it would cost to purchase them at a cost of 6 to 8 dollars. If someone did not have one "…to go to work, it had to be bought..."
Purchase of plants for re-establishment due to non adaptation	2 727	1999	The community had to take on this expense, not PROFAFOR
Construction of a Communal Dwelling	3 000		A dwelling was built in the plantation area – that has still not been finished – that will serve to house the warden guarding the plantation. The total approximate cost is 3,000 dollars, including materials, transport and food for the people who took part in the Minga for the construction.
Fiesta	600		
MAINTENANCE			
Warden	1 800	2000	Two years of wardianship were hired (two people)
Clearing of the Fire Break	810		Three people worked for six weeks, with a weekly salary of forty-five dollars.
Subsequent clearing of the Fire Break	1 350		On six occasions. They were ten weeks of work for three people per time.
Traineeships	540	2003	College students who have to carry out forestation activities for their graduation. It is the equivalent of four weeks work by 3 people at a weekly salary of $45.

Replanting (because of fire)	1 100		After the first fire (100 ha) a Contractor was hired again, who cleared the land and re-planted the one hundred hectares lost, for an amount of 1,100 dollars.
Reception for commission	500		Expenses to receive the PROFAFOR Commission that was visiting the area.
Expenditure fires	500		Payment to firemen, transport
Organization and Management work	3 000		Unforeseen management and coordination expenses and other expenses caused by the fires. An estimation of the work over all that time could amount to 3,000 dollars. "We have not collected for commission or for the management work."
SUBTOTAL	**42 670**		This is an estimate that tries to "put a price" on some activities that cannot be valued, such as the Minga and the work of the community leadership. It should not be forgotten that here, factors such as land use and some externalities or environmental liabilities related with forestry activities have not been taken into account. The utility of the figure supplied emerges by comparing it with the total amount of money received from PROFAFOR so far, which is $32,000 dollars. This is the context in which this exercise and results should be understood.
ACTIVITIES STILL TO BE CARRIED OUT			
Replanting because of fires			These are activities that the contract foresees over a term of 15 years. At this time we do not know if its execution will be outsourced once again or if it will be done under other Mingas involving transportation costs, food and wages not received by the community members. It is possible that inputs (manure, pesticides) and tools for future forest management will have to be purchased. In the event of harvesting, operational costs will have to be covered by the commune. It will also have to seek markets to trade the timber. The only certain thing at this point is that PROFAFOR provides the "technical indications" for these tasks, but expects the community to carry them out at their own cost.
Payment of fire insurance			
Maintenance Firebreaks			
Wardenship			
Pest control			
Fertilizing			
Pruning			
Thinning			
Harvest			

According to the above estimate, six years after signature of the plantation contract, the community has absorbed a negative balance – in terms of work and money – of approximately $10,000 US dollars. The maintenance tasks, lasting for a 15-year term, have not yet been completed.

In addition to having absorbed the above mentioned balance, the community has also got to finance a "*new re-planting*" of the burnt hectares, deposit periodical payments in PROFAFOR's bank account for *fire insurance* – thought up by the company and financed by payments by the *beneficiaries* – do maintenance work on the firebreak for the prevention of fires and due to the distant location of the plantation, continue to pay a warden service.

In maintenance eventually the time will come for pest control – this is not unusual as it is a monoculture pine plantation – the spreading of manure and pruning and thinning the plants – with the consequent purchase of inputs and tools. After 15 years, if all this works out well, harvest the timber, transport it and try to trade it.

The only certain thing at this stage is that PROFAFOR provides the "technical indications" for these tasks but expects the community to carry them out on their own account as, according to the contract, "harvesting and re-establishment of the plantation are the *beneficiary's* responsibility."

All this takes place under the umbrella of FSC certification, which in its Principle No. 5 clearly demands that forest management *"should strive to strengthen and diversify the local economy,"* and in Principle No. 4 that forest management *"shall maintain or enhance the long-term social and economic well being of forest workers and local communities."*

Although the Public Summary of December 2001, the date on which Certification was issued, the SGS verification company maintained that:

> *"...all the potential benefits of the forest are still a future concept. PROFAFOR still does not have long term planning for harvesting and marketing activities... The partners in the project are not aware of the potential economic implications when they start producing timber. The relationship between expected income and future costs has not been clearly defined or presented to the partners in the contracts..."*

PROFAFOR obtained FSC Certification.

The result is that FACE PROFAFOR's project to sequester carbon "*fixes and absorbs*" carbon by absorbing the work and funds of peasant communities in the Ecuadorian Sierra.

This is an unequal exchange of goods and services between PROFAFOR and the communities. PROFAFOR reserves 100 per cent of the rights over carbon absorbed, and the communities take on all the responsibilities deriving from forest management – an activity they are not familiar with and therefore cannot correctly assess – that has not presented any real or concrete benefits but rather has managed to displace productive activities in direct prejudice to the peasant economy.

4.4 Paramo Communities absorb externalities

4.4.1 Loss of a form of savings

Given that because of the plantation, activities such as grazing are forbidden, families owning cattle may have to rent lands for their animals, an expense that previously did not exist. It is also

possible that due to lack of pasture land, they may have to reduce the number of heads of cattle.

According to Montserrat Albán, cattle ownership is a traditional form of savings for peasant families and indigenous communities in the Sierra, within what she considers to be an important characteristic of community economy: *flexibility.* In this respect, she maintains that:

> "...small scale producers use flexible survival strategies to face the difficult and changing environmental, social and economic situations...short-cycle crops, cattle and sheep, and temporary work is part of a rationale for production that generates income from various sources and decreases the vulnerability of peasant economies... " [87]

On analyzing the concrete case of PROFAFOR's economic impacts, she writes:

> "...in all the cases analyzed... the economic activity that suffers a direct impact from the plantation is cattle and sheep-raising. There are two related problems: displacement of the activity with the related costs of renting land and purchasing fodder for the animals and the decrease in the number of heads of cattle obliges the families to do without a traditional form of savings ..." [88]

4.4.2 Environmental Impacts

4.4.2.1 Prior consultation and publicly accessible information

The communities affected by the establishment of PROFAFOR's tree plantations were not adequately consulted before the implementation of the project. The company's advertising did not present the "risks" and "benefits" derived from a large-scale tree plantation of exotic species in a clear way.

"Prior consultation" is not the same as "promoting" the future concept of *non-quantified* income or benefits from lumbering activities. It is related above all to the need for the population that will receive the impacts to be fully and adequately informed and *aware* of the risks that it is exposing itself to.

This is not only a problem for FACE PROFAFOR but it *has strong implications for the transparency and credibility* of the certification process in general.

Chris Van Dam, FSC consultant, writes the following:

> *"...A dimension of the certification process is the question of public consultation prior to the main evaluation, and the public dissemination of the reports following the granting of certification.*
>
> *The principle is clear: given that the assessment process is a short process and necessarily partial and incomplete, there is nothing better than enabling all those actors ... before or after the assessment, to make themselves heard.*
>
> *However... both clients and certifiers – who owe themselves to the former – have distorted this principle, for example by not consulting all those involved..., or*

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[87] ALBÁN, M. y María Arguello, 2004. *Un análisis de los impactos sociales y económicos de los proyectos de fijación de Carbono en el Ecuador*: *El caso de PROFAFOR-FACE*. IIED, London, United Kingdom, page 39.

[88] ALBÁN, M. y María Arguello, 2004. *Un análisis de los impactos sociales y económicos de los proyectos de fijación de Carbono en el Ecuador*: *El caso de PROFAFOR-FACE*. IIED, London, United Kingdom, page 42.

> *doing so with very little warning, disseminating only a summary of the assessment report, or only by the Internet and in English, knowing that the affected parties do not have access to the web or do not speak this language...*
>
> *The certifiers allege that this is due to the need to ensure confidentiality of the information – the commercial secrecy of their clients – and of their own assessment methods and techniques vis-à-vis other certifying companies.*
>
> *All this has been accepted by the FSC, and conspires against one of the principles of certification: the possibility that all the actors involved or affected participate in the process."* [89]

FACE PROFAFOR technicians arrive in the communities and promote the establishment of plantations, saying that they "pay to plant" and present a future of income and employment. The possible partners are not fully informed about the obligations they will take on, on signing the contract. None of the people interviewed from the communities visited had knowledge of various important issues, such as for example, no knowledge of the existence of the penalty clause hanging over each community in the event of a breach of contract, nor of the amounts that the community had been engaged to honour.

The public summaries of the visits by the verification company are available on the internet only up to the visit of the year 2000, and in English. When FACE PROFAFOR is asked for information "*at its office*", the company comes up with a series of bureaucratic obstacles and requirements, such as that the person requesting information should do so by memorandum, listing the required information; then an answer is received requiring that this memorandum should be signed by the representative of the organization. Once these requirements had been fulfilled, PROFAFOR gives evasive answers, which do not provide the information requested.[90]

4.4.2.2 Environmental Impact Assessment

FACE maintains in its public discourse that on establishing tree plantations it achieves "*the improvement of soil structure and the restoration of soils degraded by extensive use."* Unfortunately, there are no indications that this is fulfilled in practice and FACE obtained certification in spite of not having submitted an Environmental Impact Assessment of its activities.

According to FSC any forestry activity must have an environmental and social impact assessment. Regarding environmental impacts, according to FSC, forest management *shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes..."*

FSC hopes that by fulfilling these objectives, ecological functions may be maintained. The certifying entity requires that an environmental impact assessment be completed for the management system. Although it does not prohibit the use of exotic species, it does in fact demand that they be carefully controlled and rigorously monitored.

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[89] VAN DAM, Chris, "Certificación Forestal, Equidad y Participación" Member of FSC. Professor of Environmental Policy and Sustainable Development, National University of Salta, ARGENTINA.

[90] According to the note sent by PROFAFOR FACE 617/04 to Acción Ecológica, dated 21 September 2004.

The "Public Summary" document for the year certification was granted recognizes that the management and forestation plans do not identify rare, threatened or endangered species, nor do they identify protection zones. No specific measures aimed at the protection of such species are presented nor are stipulations made for nurseries or in the plantation contracts in relation to the use of chemicals.[91]

These aspects received the qualification of Major Corrective Action, which did not prevent the FSC "Green Label" being granted in the year 2000.

4.4.2.3 Assessment of Social Impacts

FACE-PROFAFOR technicians designed a forestation contract and determined the obligations to be taken on by the community. In spite of the fact that they are qualified by the company as *beneficiaries*, the communities must take on the work required for plantation management with the promise of obtaining non-specified income in the future.

The company offers "*initial funding*" that has proved insufficient for the plantation activities required in the management plans, but it is an incentive for the communities to sign the contract.

The incentives become a useful tool for the project rather than for the community: it is easier to gain acceptance in the community by offering an incentive with an immediate financial value than to carry out sound work based on explaining the benefits of forestation. Giving incentives places the donor organization staff in an "agreeable position of power" through the control of resources: resorting to incentives is a means to gain supporters and influence people.[92]

In this way, forestry technicians can enjoy an "agreeable position" within the game of power of social interactions with the indigenous and peasant communities, which sometimes leads to excesses in their comments (such as in the case of the commune of SigSig, with the threat by the company representative that the commune was "mortgaged").

Social impact for the total duration of the execution of the contracts (following the first three years of establishment) has not been assessed and the company's energy has mainly been aimed at fulfilling technical specifications and follow-up of the plantation in accordance with its guidelines[93] . The social evaluation of the FACE PROFAFOR project submitted to obtain FSC certification is a simple description of current conditions in the field, not an evaluation of expected or possible social impacts.

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[91] This was documented in the April 2000 Public Summary and was the object of various qualifications for corrective action. At the time of obtaining certification, the verifying body saw no evidence that PROFAFOR had carried out any in situ environmental impact assessment. Therefore no evidence was seen of the implementation of Technical Regulations concerning environmental impact assessment. There is no evidence that the management plans and forestation plans have identified rare, threatened and endangered species, nor were –site-specific measurements directed to the protection of such species found. The contracts which PROFAFOR uses with nurseries do not make any stipulations in relation to chemical usage, nor do the contracts with the communities. QUALIFOR Programme, Public Summary Information Face Foundation / Profafor, FM Main Assessment Report, April 2000.

[92] Smith's hypothesis, in VIDAL.

[93] QUALIFOR Programme, Public Summary Information Face Foundation / Profafor, FM Main Assessment Report, April 2000.

4.4.2.4 Species used and difficulties in adapting to the Andean environment

In the plantations partially sponsored by the PROFAFOR programme, the species planted are:

90%	Pine
4%	Eucalyptus and Cypress
5 - 6%	Native species[94]

PROFAFOR promotes large-scale plantation of exotic species of trees in the Andes. It tries to justify this on maintaining that it carries out its activities on degraded lands and at altitudes where agriculture is not possible and grazing is not profitable. It has been said that FACE operates with "arrogant ignorance" in maintaining that in Ecuador, at altitudes of between 2400 and 3500 m.a.s.l, *agriculture is no longer possible and livestock farming is less profitable.* Joan Martínez Alier, of the Autonomous University of Barcelona writes: "...Quito lies at 2800 m, Cuzco, much farther south from the Equator, at 3,400 m, the Sacred Valley below Cuzco, a shrine of Andean agriculture, at about 3000 m. FACE started out with a strong prejudice against Andean agro-pastoral practices, and against the indigenous inhabitants of such regions – perhaps a form of 'environmental racism'". (Martínez Alier, 2002).

On referring to the species planted, FACE justifies the use of exotic species arguing that it recommends the use of native species but that forestation is done with Pine and Eucalyptus – in order to restore soils and prevent erosion – because in Ecuador, according to FACE "*the majority of native species have almost disappeared, and local knowledge of indigenous tree species has been lost with the trees."* [95]

In spite of the serious problem of deforestation in Ecuador, it is hard to believe that native species and the traditional knowledge related to them have disappeared. This is an affirmation that is far from reality. The study "*Plantas Nativas Para Reforestación en Ecuador*" (Native Plants for Reforestation in Ecuador) published in 1990, found 335 species and 54 non-timber uses for species of native trees in the Ecuadorian Andes.[96]

In the Paramo communities visited, towards the end of the workshops, participants were informally asked to name native species and to briefly describe their uses. In San Sebastián de SigSig, in less than ten minutes, the participants were able to name and describe uses for at least thirteen species of native trees of the area.

When PROFAFOR obtained FSC certification, the SGS verifier mentioned in its public summary that exotic species are not necessarily suitable for environmental protection, particularly of degraded soils. They also recognize that Eucalyptus and Pine may contribute to the degradation of soils rather than to protect them. Attempts to restore forests with native species are therefore of importance[97].

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[94] Luis Fernando Jara, Com. Pers.

[95] www.stichtingface.nl

[96] BORJA, C. & LASSO, S. 1990. "Plantas Nativas para Reforestación en el Ecuador". Fundación Natura. Quito. 208p. http://www.fao.org/documents/show_cdr.asp?url_file=/docrep/t2354s/t2354s0w.htm

[97] QUALIFOR Programme, Public Summary Information Face Foundation / Profafor, FM Main Assessment Report, April 2000.

Since 1999 native species are included in FACE PROFAFOR forestry projects, in a scantly significant proportion, under the concrete utility of enabling FACE to have access to certification. In order to maintain this certification, during the Surveillance Visits by the verifier, it defends as one of the strengths of the organization, its continued "commitment" to use native species.[98]

FACE PROFAFOR insists on planting Eucalyptus and Pine. So far it has maintained that research has been carried out on the impacts of pine on the soil and the hydrology but due to the "*high variability of the results obtained, it cannot be categorically stated that pine is noxious for Paramo soils*". [99] In its international public discourse, FACE "accepts" the plantation of exotic species in its projects, under the *condition* that the areas are replanted with native species after the timber has been harvested.[100]

The introduction of exotic species in high altitude environments such as the Paramo, damages the soil structure, affects the fauna and the flora and also determines that the plantation has a deficient production, resulting in prejudice to the carbon fixation that was sought to be achieved. This was seen in visits to the Paramo in the Commune of San Sebastian.

Observations during the visit to FACE plantations in the Paramo Commune of San Sebastian de SigSig

Burnt plantations

The plantation has been affected by fires, resulting in the death of most of the affected trees and scant possibility of subsequent growth of the plants that did not die. Given the following conditions, it is not surprising that the plantations were burnt and fires may be repeated:

1. Lack of permanent wardens and fire-fighting equipment
2. Totally inadequate firebreaks, both regarding quantity and dimension (*too narrow*)
3. A strong and permanent wind, making it easy for the fire to cross over the firebreaks
4. Easily combustible natural vegetation (*pajonal* vegetation characteristic of Paramos)
5. Traditional grass burning practices for better cattle use
6. This is a Pine plantation, trees that are inclined to catch fire

[98] Qualifor SGS, Informe de Visita de Vigilacia de Manejo Forestal para PROFAFOR FACE, Visita de Vigilancia No 1, octubre 2002.

[99] Luis Fernando Jara, Com. Pers.

[100] FACE Public Summary 1995.

Chlorotic trees

Among the remaining trees, numerous stands of *Pinus patula* with yellowish leaves were observed, indicating the plant's poor adaptation to this environment.

Although detailed research is required on the matter, this condition may be due to three causes:

1. That the plants coming from the nursery were not inoculated with mycorrhizal fungi (that fulfils a symbiotic function at root level and that facilitates the plant's nutrient absorption)
2. That this fungus does not naturally exist in Paramo soils
3. That the soils lack some nutrient vital to the normal development of pines (boron or some other element)

Broken off tree tops

Many trees have the terminal shoot broken off at varying heights (almost at the foot of the plant in some cases, up to a height of one metre). Given the characteristics of the cut, it is assumed that it is probably due to some animal present in the area (rabbits, hares, cattle, horses). This has given rise to a bushy growth with many lateral shoots, competing to become the new terminal shoot. These trees run the risk of not developing trunks suitable for the saw mill.

Slow and uneven growth

In a six-year plantation such as this one, growth may be considered deficient, with few trees exceeding 2 metres, while most are an average of 1 metre high. To this is added low density, hindering the formation of sufficient thickness for the plantation to close its canopy and the trees to start growing faster competing for light.

Taken from: OBSERVACIONES DE LA VISITA A PLANTACIONES FACE EN EL PÁRAMO, (OBSERVATIONS DURING THE VISIT TO FACE PLANTATIONS IN THE PARAMO) Ricardo Carrere, August 2004 (Annex 1).

4.4.2.5 Impacts on the Paramo environment: the soil

Following the Spanish conquest, the indigenous population retreated to high altitudes due to the expansion of the Hispanic and mestizo population in the inter-Andean valleys and the expansion of lands accumulated in the Spaniards' large estates or private ranches[101].

[101] This has been called "*handing over of indigenous property to the Spaniards."* These were determining factors in displacing the native populations to the high slopes, to the outskirts of those large estates and haciendas. Ramón 1987:150, quoted in HESS, 1992, and HESS, 1992. In VIDAL 1999.

The 1964 and 1973 Land Reform Laws contributed to intensify the exploitation of the Paramo,

> "*...transfer of land from the large haciendas to the indigenous peoples was largely restricted to the high, less productive parts and sometimes reserved for extensive cattle-raising: in other words, the reform mainly delivered the Paramos of the haciendas to the peasants. Presently, the sub-Paramos are almost completely cultivated (up to 3,600 – 3,900 m.a.s.l.), while the high Paramos still serve as natural pasture land for extensive cattle raising up to 4,500 m.a.s.l.*" [102]

Paramo soils have complex inter mineral and organic particulates that retain water and protect the humus from decomposition, implying that they have a high content of organic matter and retain a lot of water.

Because *Pinus* plantations use more water, the soil under the plantations tends to dry out. *Thus the soils lose the connection between mineral and organic particulates, the content of organic matter decreases and the soils are transformed from water retainers to water repellents.*

In Andean soils at 3000 m in Cundinamarca, Colombia, following the implantation of conifers (*Pinus patula* and *Cupressus* sp) and *Eucalyptus viminalis*, it was found that the established plantations caused a transformation in the structure of the soils, accompanied by severe cracking, a change in the soil's humidity regime and a variation and considerable decrease in the soil's biological activity.

According to Robert Hofstede, of EcoPar[103] , there is a general trend that *Pinus* plantations are related to sites with less organic matter, less humidity and a coarse texture. A general phenomenon is that the soil's pH decreases under the plantation, acidifying the soil. Repellence to water has been documented in pine plantations in Colombia[104] . This is attributed to the exudation of resinous substances by the pine roots; this resin also makes the pines prone to catching fire.

In spite of the fact that so far the impact of these plantations on natural ecosystems is not absolutely clear, there are more indications of deterioration than restoration. Hofstede concludes:

> *"...The negative impact of commercial plantations on the hydrology, proven in innumerable studies, is really what is of most concern, but also the effect on soil fertility and on the diversity of a region.*
>
> *Many studies have not been carried out in the Paramo but they have in other countries or continents. However, there is no reason to expect that a negative*

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[102] Verónica Vidal, Impactos de la aplicación de políticas sobre cambio climático en la forestación del páramo de Ecuador, *Ecología Política*, 18:49-54, 1999, quotes the original source of this finding: G. Medina and P. Mena, El páramo como espacio de mitigación de carbono atmosférico, Serie Páramo, 1. GTP/Abya Yala, Quito, 1999. Also in: *El Comercio* (Quito), 3 Nov. 1999.

[103] ECOPAR previously "Ecología Páramo"(Paramo Ecology), now "Proyecto de Investigaciones de Ecosistemas Tropicales"(Research Project on Tropical Ecosystems). An organization initially established as a project of the University of Amsterdam, with initial funding from FACE. PROFAFORO initially entrusted studies on the performance of native species and monitoring of ecological impacts of exotic species plantations, and for a while was the "Research Division of PROFAFOR", but according to Hofstede, following the certification process, research was focused on issues necessary for the maintenance of the licence. In: ALBÁN 2004.

[104] Jaramillo & Herrón, (1991). This phenomenon is also reported by Cortés *et al.* (1990). Both in HOFSTEDE.

effect found in the majority of the cases, will be positive in the Paramo. A plantation with exotic species cannot be justified as an ecological measure.

In countries with more forestry technology than Ecuador, it is recognized by forestry technicians that pine has an environmental impact, and instead of putting effort into denying it, they rather put more effort into mitigating it.

In view of the high ecological, hydrological and landscape value of the Paramo, it is not recommendable to plant exotic species...A strong recommendation is to change the type of forestation in the Ecuadorian Sierra. If the native flora above 3,000 metres contains 330 species of trees, why does forestation only use three species that are foreign to the continent?... " [105]

4.4.2.5.1 Hydrology

The same author quoted above, Hofstede, explains that the importance of the Paramo ecosystem may be divided into three components, an ecological function, an agricultural function and a hydrological function.

Paramos are fundamental for the regulation of regional hydrology and are a source of water for most of the population of the Andes ("the hydrological function"). Paramos are considered to be water "factories", the "sponges" to store water or the "cradle" of the water system.[106]

In the Paramos, the climate is cold and generally damp. The great humidity is not shown so much by high rainfall. In addition to vertical precipitation (rain), quite a lot of water reaches the ecosystem from horizontal precipitation: the interception of fog. Due to the cold and the heavy cloudiness at that altitude, evaporation is very low and thus there is a high water output.

Decomposition of organic matter in the Paramo is very low, due to the low temperatures and high humidity. For this reason, in situations with very little human disturbance, moist soils will be found: the large quantities of organic matter make these soils have considerable water retention.

Part of the water in the soil remains immobile, contained in very thin capillaries, while another part is mobile and is retained for a limited time. The mobile part is established during damp seasons: it is retained in the soil and released during dry seasons. Although the soil's capacity to retain water is much higher than that of the vegetation, the presence of a layer of constantly humid plants is important to maintain good water retention during the dry season.

The natural balance in vegetation zones above 3200 m.a.sl. in the Andes is very fragile. This balance is frequently altered by agriculture. All agricultural practices (crops, cattle-raising and tree plantations) result in the vegetation cover disappearing during a certain time. The disappearance of protective vegetation causes exposure of the soil to air and increases the evaporation in the surface soil. The mutual effect between water and organic matter tends to be interrupted: with less

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[105] Hofstede R., "*Impactos ecológicos de plantaciones forestales*", EcoPar. Adapted verion of the article with the same title in the book: R. Hofstede, J. Lips, W. Jongsma & J. Sevink. 1998. *Geografía, Ecología y Forestación de la Sierra Alta del Ecuador. Revisión de Literatura.* Editorial Abya Yala, Ecuador. 242 p.

[106] Hofstede R., "La Importancia Hídrica Del Páramo Y Aspectos De Su Manejo", EcoPar, August, 1997.

humidity there is an increase in decomposition, resulting in less organic matter in the soil, and in turn, a lower capacity to retain water. This effect is significant, because scantly developed volcanic soils (such as those found in most Paramos), dry up irreversibly and do not recover their original morphology when they get wet again. With repetitive agricultural practices, without long periods of fallow, this cycle of dryness and decreased organic matter may develop in such a way as to result in a dry, sandy soil lacking organic parts.

The implantation of trees, exotic to the Paramo, does NOT favour the ecosystem's stability.[107] During implantation, (part of) the existing vegetation is removed and the soil is altered. More of concern are the effects during growth of the plantation.

Species such as pine consume a lot of water, lessen water output and dry the soil, generating more decomposition. This is not compensated by an entry of new organic matter, because pine litter fall is very uniform and resistant to micro-organisms. Under many conditions, the soil under a pine plantation is less organic and drier than the Paramo soil.[108]

According to other authors, tree plantations have a maximum effect on the hydrology of those zones of high precipitation, particularly if they are sources of water for users in lower lying land. The introduction of non-native species in a determined area may reduce the flow in dry seasons to less than the historical levels. This can be seen if the plantation covers a significant proportion of catchment areas.[109]

The Paramos are water reservoirs for the population in the Andean Sierra. In the case of the SigSig commune, the Paramo zone where the plantation has been established is a catchment area for water that directly serves fourteen communities. Trees from the plantation may be observed near water courses and reservoirs. When PROFAFOR obtained certification, the verifier observed that no technical regulations exist with regards to minimum planting distance from watercourses and natural vegetation (Major Corrective Action 5.5/6.5/10.2).

4.4.2.5.2 Carbon sequestration or more emissions?

The Paramo ecosystem is a great carbon reservoir and conserving it avoids more emissions to the atmosphere. In the Paramo the soils are typically very dark and humid. Due to the cold climate, high humidity and the fact that the soils are formed from recent volcanic ash, decomposition of organic matter is very slow.

There is a great quantity of carbon stored in a thick layer. In the case of the Paramos of El Angle, it is up to 2 metres deep. If this extreme case of Carchi is considered, it may be calculated that 1700 tons of carbon is stored per hectare. If the soil of the Paramo ecosystem is considered, it can store more carbon than the tropical forest. With poor Paramo management, particularly if the soil is exposed to the air, the surface soil dries up and decomposition increases. This results in an oxidization of organic matter and carbon emission to the atmosphere. With a change in land use in

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[107] Although it is said that more biomass is created and with this the plant cover would increase with more organic matter entering the soil.

[108] Cortés et al., 1990; Hofstede & Jongsma, 1997.

[109] E.K.S. "*Plantations, Farm Forests And Water*". CSIRO Forestry Products & RIRDC Rural Industries Research and Development Corporation. Union Offset Printing. Canberra. November 2001.

the Paramo, such as plantations, the loss of organic matter is not compensated by an input of new litter. It is an illusion to think that organic matter in the soil is very stable and that inappropriate management does not release a lot of carbon into the atmosphere.

> *"...There is also concern over PROFAFOR activities in Ecuador, because so far, the majority of the plantations have been done with fast-growing exotic species. Species such as pine and eucalyptus are not naturally elements of the Andes and for this reason the plantation is not in a natural ecological balance. There is concern that because of its rapid growth it will need much water and therefore dry out the soil. With a drier soil some of the organic matter will disappear, not to be compensated by litter fall, because it is cuticulous, homogenous and foreign to the soil fauna. Thus there is a fixation of carbon by the trees above the soil, but a loss of carbon in the soil..."* [110]

The construction of firebreaks is an important cause of erosion and it would not be surprising if it were to result in serious erosion processes (gully erosion). The firebreaks have not been constructed following the contour lines, but rise and fall following the uneven geography of the zone. As they are kept free of vegetation by hoeing, this facilitates soil particulates being swept away by runoff, as observed during the visits.[111]

The area of Paramo covered by "pajonal" were never covered by forests, and therefore the plantation of hundreds of hectares of trees (and exotic ones at that) will necessarily result in serious impacts on the flora, fauna, soils and hydrological regime of the zone.

In the plantation of one of the communities visited, the area at the source of springs had been planted with a native species, *Polylepis incana*, to avoid the drying up that the pines might cause there. The commune is interested in the species because it is a tree that gives "*the best fire-wood*". Clearly this use is contrary to the objectives of carbon fixation and trapping.

In spite of the fact that *Polylepis incana* is an Andean tree species, it is being used for the forestation of complete areas, becoming a monoculture tree plantation on the fragile Paramo soil, where the natural vegetation is the pajonal. In this same plantation it was seen that the leaves of most of the small plants were eaten by a parasite or an insect, which could eventually wipe out the plantation as it is a monoculture plantation. In this zone, *Polylepis incana* should be considered as an exotic species because it does not seem to occur naturally in the Paramo, but grows in the sub-Paramo, associated with other tree species that grow in patches of Andean forest.

> *Thus, the cost of obtaining an economic benefit, by cultivating above the soil, is the loss of two of the Paramo soil's important environmental benefits: water and carbon.*[112]

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[110] Hofstede, Robert. "*El páramo como espacio para la fijación de carbono atmosférico*". Proyecto EcoPar. Non-modified version taken from: Medina, G. & P. Mena (Eds.). 1999. "*El páramo como espacio de mitigación de carbono atmosférico*" Serie Páramo 1. GTP/Abya Yala. Quito.

[111] CARRERE, R. "Observaciones de la visita a las plantaciones de FACE en el páramo" August 2004.

[112] Hofstede & Aguirre, 1999.

CONCLUSIONS

It is estimated that 345 million hectares in the world may be forested or re-forested, and it is considered that this would be an important contribution to reduce greenhouse effect gases present in the atmosphere. International confidence in emissions trading and the Kyoto Protocol would seem to represent an "institutionalized negation" of the magnitude of the challenge of fighting climate change, and it would rather seem that emissions trading is no more than an instrument favouring the economies of the North: a) because it enables them to evade their real responsibilities vis-à-vis climate change; and b) because in this way they have access to a new market of incalculable proportions.

The problem is that the Clean Development Mechanism is a market, not a development fund or a mechanism to promote renewable energies. Therefore the criteria governing projects to be implemented under the "Clean Development Mechanism" do not really represent a change in the structures that generated poverty and inequality nor do they guarantee any kind of sustainability.

In the case of the FACE carbon sequestration project in Ecuador, there are many and very serious environmental and social consequences generated by the establishment of tree plantations.

Although the project has been granted the Green Label of certification by the Forest Stewardship Council, its implementation does not guarantee that local populations shall have access to economic, social and environmental benefits from forestry activities, and it is rather the company's excesses and abuses that are protected and legitimized.

5.1 Social impacts: the problems for the local population

FACE PROFAFOR acquires rights over carbon dioxide fixation and absorption from the atmosphere through forestation executed by land holders and local communities. In fact, the FACE PROFAFOR carbon sequestration project "fixes and absorbs" carbon, if at all, only by absorbing labour and funds of the peasant communities in the Ecuadorian Sierra.

FACE PROFAFOR promotes the establishment of tree plantations in the Ecuadorian Paramo communities in exchange for the offer of an economic incentive. The possibility of receiving income from forestry activities convinces the peasant communities who sign forestation contracts with FACE. These contracts engage the communities to provide maintenance of the plantations for terms of between 15 and 30 years, to be responsible for harvesting and trading the timber following PROFAFOR's technical indications. All this takes place in lands that are community property, under the promise of receiving unspecified income at some future date from the sale of the timber.

The incentives provided by the company are insufficient to cover expenses that the communities have to incur to complete the establishment of the plantations. This means that less than six years after signing the contract the Paramo communities have already had to devote their own productive activities and instititutions – such as grazing and social resources such as the Minga – to the service of PROFAFOR.

This is an unequal exchange of goods and services between PROFAFOR and the communities. PROFAFOR reserves 100 per cent of the Carbon Absorption Rights and the communities take on

all the responsibilities derived from plantation management, an activity that has not shown real benefits but that has managed to displace productive activities in direct prejudice to peasant economy.

5.2 Environmental issues: Impacts on the Paramo

In spite of what FACE has stated publicly, regarding its commitment to plant native species as a guarantee of its *environmental responsibility*, 94 per cent of what has been planted has been done so with exotic species.

FACE continues to plant Mexican Pine in the Ecuadorian Andes, because *allegedly* the plantations seek to restore soils that have been "degraded by extensive use" and because "knowledge of the use of native species has been lost" in Ecuador. The truth is very different. FACE introduces Pine plantations in primary ecosystems, *not* in degraded soils. The plantations are established in a very fragile ecosystem of great hydrological importance: the Paramo.

Paramos are fundamental for regional hydrological regulation and are a source of water for most of the population of the Andes. Paramos are said to be the "cradle" of the water system. Their great quantity of organic matter enables these soils to retain a lot of water. Plantation of exotic trees in the Paramo does *NOT* favour ecosystem stability. The soil structure is very fragile and is seriously altered with the introduction of exotic trees, more so if this is a plantation. In addition to the destruction of the system of cushions – characteristic of the Paramo – soil structure is transformed and severe cracking occurs due to the changes in the water regime and an appreciable decrease in biological activity.

The Paramo is a great carbon reservoir and conserving it avoids more carbon emissions to the atmosphere. During the establishment of plantations the vegetation is removed and the soil altered. On exposing the soil, large quantities of carbon are released. In spite of wanting to fix carbon with the trees, in fact the carbon stored in the soil is being released. The Paramo soil is also exposed by the construction of firebreaks, which will result in serious erosion processes.

The introduction of a monoculture pine plantation in a fragile high altitude environment such as the Paramo destroys the water regime and soil structure. It also acidifies the soil, detaining the growth of other plant species, converting these plantations into a food desert for the local fauna.

5.3 Forestry issues: the disaster of plantations

Tree plantations are prone to catch fire. This risk is considerably increased in the case of the FACE plantations. In the first place, this is because they are pine plantations, and pines because of their resin are prone to catching fire. Secondly, it is because these plantations are surrounded by easily combustible natural vegetation (the pajonal that is characteristic of the Paramo) and are constantly exposed to strong winds, and it is therefore easy for fires to reach the trees. It should not be forgotten that fires are present in the Paramos due to the traditional Andean practice of slashing and burning the clumps of grasses, to use the place for cattle-grazing.

Furthermore, the trees show deficient growth. The pines, introduced into a high altitude environment with extreme climatic conditions, are showing clear indications of poor adaptation to the environment, and are becoming *chlorotic*. This poor growth implies a low carbon uptake.

The introduction of species such as *Pinus patula* in the Paramo appears to be senseless. An explanation may be that the Andean communities are being used in an experiment with the performance of exotic species at high altitudes.

The only Andean tree species that is being used by the PROFAFOR project is *Polylepis incana* for the forestation of complete areas, making it a monoculture tree plantation on the fragile soil of the Paramo. Equally, difficulties have been found in performance and growth of this species.

The result to be obtained by PROFAFOR's *beneficiary partner* communities at the end of the contract in 30 years or more will be a harvest with very few good quality trees.

5.4 Certification: How can these plantations have been certified?

In order to reconcile environmental concerns with industry interests, the market has designed certification systems. Due to the increasing "*awareness*" that occasionally determines options to be taken by certain consumers, timber exploitation industries have opted to achieve certification, obtaining a Green Label that upholds their public discourse of *environmental respect,* and with it, they obtain a "plus" in the price of their products.

FSC certification does not guarantee that the *beneficiary* communities in the FACE project will receive economic, social and environmental benefits. Rather a considerable – and questionable – *flexibility* in the application of the Principles and Criteria is to be observed. Eight years after starting its activities, FACE obtained certification; it was of scant relevance that for the establishment of its plantations primary ecosystems were destroyed, nor did it matter that mitigation measures for the impacts generated were not demonstrated.

In the year 2000 when certification was granted the verification body SGS observed FACE PROFAFOR's deficient capacity to provide adequate support to the communities regarding the social implications of the contracts. SGS did not require an Environmental Impact Assessment to be made as a condition to grant certification. FACE had not identified rare, threatened or endangered species or environmental protection zones in eight years of work. The verification team admitted that exotic species were not necessarily best indicated for environmental protection – not even for degraded soils. It also recognized that Eucalyptus and Pine can contribute to the degradation of soils rather than to their protection.

We need to ask ourselves how FACE obtained certification. Perhaps we will find the answer in the fact that certifiers and verifiers are private bodies whose rationale is profit and competition among themselves, leading to a "race towards non-excellence, lowering standards to attract clients."

The certification of FACE PROFAFOR does not guarantee appropriate social and environmental practices. Rather, certification merely improves FACE's image in the carbon market.

5.5 The dangerous challenge of attempting to fix carbon in trees prone to catch fire

In spite of considerable scientific uncertainty and ignorance regardingthe real effectiveness of terrestrial carbon sinks in the mitigation of climate change, in the countries of the North industries prefer to use carbon sequestering mechanisms as they are the cheapest short term "solution" to

fulfil their commitments to reduce carbon emissions within the Kyoto Protocol. The cost of a ton of carbon absorbed through tree plantations in the tropics may be up to 200 times lower than the same ton reduced in those industries or *at the source.*

Having within their reach the *cost-effective* possibility of sequestering carbon, developed economies will not reduce their emissions. Thus local communities will have pressure put on them to introduce tree plantations of *fast growing* species in primary ecosystems, degrading them and releasing more carbon into the atmosphere, in exchange for *perverse economic incentives.*

It is dangerous to think that carbon fixation will take place through the destruction of the Paramo ecosystem. PROFAFOR is attempting to fix carbon in plantations showing deficient growth and of exotic species prone to catching fire. The only native species planted in plantations sponsored by PROFAFOR is *Polylepis incana*, which the communities choose because later its timber becomes "one of the best fire-woods."

5.6 A Dutch absurdity on Ecuadorian lands

FACE PROFAFOR maintains that it provides thousands of jobs or daily wages to the indigenous communities in Ecuador. In no way are these jobs real or decent. They are rather tasks that the communities find themselves *obliged* to take on, through contracts signed between FACE and the indigenous communities, these take on a debt that converts the contract into a tool of coercive hiring, obliging the communities to serve the interests of the company, because their only option to comply with their contractual commitments is to provide work in a non-remunerated way.

The Dutch foundation FACE is attempting to "sequester" carbon in pine plantations established in primary ecosystems in Ecuador. FACE retains 100 per cent of the carbon sink credits while the local communities take on all the responsibilities arising from their maintenance and environmental impacts.

Thus, the sequestration of carbon is cheap because it absorbs labour and environmental costs in Ecuador, while unverifiable carbon credits are sold to companies and governments with industrialized economies.

The FACE PROFAFOR project is an absurd idea, seeking to increase land carbon sinks and that only manages to divert financial and political resources from a restructuring of the use and generation of energy.

We do not know what criteria regulate PROFAFOR's activities in Ecuador. They cannot be classed as a CDM project as it was established before the year 2000, nor are they a AIJ because they are not an initiative established between governments. We are seriously concerned over PROFAFOR's "status" as private investment trading carbon credits, saying it is governed by the criteria for CDM projects, and that it recognizes only FSC as a regulating body. The latter in fact reveals its laxness in certifying FACE PROFAFOR activities.

Once again the North is bringing "coloured beads" which hide a new mechanism to profit from and ransack the South's resources.

The CDM is now the centre of attention of climate negotiations. The countries responsible for most of the emissions that generate climate change have managed to divert attention from the fundamental point – their responsibility to reduce greenhouse gas emissions at the source.

CDM initiatives funded by industrialized countries attract the attention of the governments of the South under the promise of receiving income for their fragile economies. These projects are cheaper in the South due to the low cost of land use and of their peoples' work, and because they do not consider the important environmental costs absorbed by the developing countries, the alleged *beneficiaries* of such projects: loss of water and destruction of primary ecosystems.

The North exacerbates its ecological footprint in the South.

ANNEX 1

Some observations made during a visit to FACE plantations in the Paramo
Ricardo Carrere, August 2004

General observation

The Paramo area we visited was never covered by forests, and therefore the plantation of hundreds of hectares of trees (exotic ones at that) will necessarily result in serious impacts on the zone's flora, fauna, soils and hydrological regime. From an environmental standpoint, the plantation of Mexican pine in the Ecuadorian Paramo is the equivalent of deforesting the Amazon forest to substitute it with monoculture crop plantations. The Paramo contains a unique and diverse type of vegetation that in turn protects the soil, feeds the fauna and regulates the water cycle. For their part, monoculture pine plantations are devoid of food for the local fauna, eliminating (once their crowns have covered the soil) all the underlying vegetation and thus facilitating erosive processes and substantially modifying the hydrological system (greater consumption by the trees, less infiltration to the water table and sedimentation processes). The following are some observations made regarding two areas planted by the FACE-PROFAFOR project.

Commune of San Sebastián de SigSig – Azuay

Burnt plantations. Between a quarter and half of the *Pinus patula* plantation has been affected by fires, resulting in the death of most of the affected trees and in a scant possibility of subsequent growth of the plants that did not die. Given the following conditions, it is not surprising that the plantations were burnt and fires may be repeated:

1. Lack of permanent wardens
2. Lack of fire-fighting equipment
3. Totally inadequate firebreaks, both regarding quantity and dimension (too narrow)
4. A strong and permanent wind, making it easy for the fire to cross over the firebreaks
5. Easily combustible natural vegetation
6. Traditional grass burning practices for better cattle use
7. Trees that are prone to catching fire such as pine

Chlorotic trees. It was possible to observe numerous stands of *Pinus patula* with yellowish leaves, indicating the plants' poor adaptation to this environment. Although detailed research is required on the matter, this condition may be due to three causes:

1. That the plants coming from the nursery were not inoculated with mycorrhizal fungi (that fulfil a symbiotic function at root level and that facilitate the plants' nutrient absorption)

2. That this fungus does not naturally exist in Paramo soils

3. That the soils lack some nutrient vital to the normal development of pines (boron or some other element)

Broken off tree tops. Many trees have the terminal shoot broken off at varying heights (ranging from almost at the foot of the plant in some cases, to up to a height of one metre). Given the characteristics of the cut, it is assumed that it is probably the work of some animal present in the area (rabbits, hares, cattle, horses). This has given rise to a bushy growth with many lateral shoots competing to become the new terminal shoot. Unless formative pruning is done shortly, these trees run the risk of not developing trunks suitable for the saw mill.

Slow and uneven growth. In a six-year plantation such as this one, growth may be classed as deficient, with few trees exceeding 2 metres, while most are an average of 1 metre high. To this is added low density, hindering the formation of sufficient thickness to enable the plantation to close its canopy and the trees to start growing faster, competing for light.

Erosion. The firebreak is an important cause of erosion and it would not be surprising if it led to serious erosion processes (gully erosion). The firebreaks should have been constructed following the contour lines. However this was not the case and they rise and fall following the uneven geography of the zone. As they are kept free of vegetation by hoeing, this facilitates soil particulates being swept away by runoff, as observed during the visit.

Kawanapamba – El Tambo, Cañar. In this case, the plantation of *Pinus patula* looked much better, with no chlorotic trees and better growth. However, here too many individuals had the top broken off and the same observations may be repeated concerning the danger of fires and the problem of erosion resulting from the poor design of the firebreaks. At the same time, a low density of trees was observed, with the exception of an area of the slope protected from the wind, where the plantation was denser and the trees showed better growth. Nevertheless, this area seemed to be a relatively small percentage of the total area under plantation.

Quinua (*Polylepis incana)*. We were informed that the area at the source of the springs had been planted with "native species" to avoid the drying up that the pines might cause there. The final objective would be the production of firewood and charcoal. However, we were able to see that in fact it was a monoculture tree plantation of a single species: *Polylepis incana*. At the same time, it was also observed that the leaves of the majority of the small plants were being eaten by some type of insect (we found and photographed an insect that may be the plant-eater responsible for this), that could eventually wipe out the *Polylepis incana* plantation, particularly because it is a monoculture plantation. It is important to note that in this zone *Polylepis incana* should be considered as an exotic species because it does not seem to occur naturally in this Paramo.

ANNEX 2

Net carbon balance in PROFAFOR plantations*

The CO2FIX model, already commented on in section 4, calculates the production of biomass in plantations on the basis of "possible" data. In the case of Ecuador, as the necessary data on eucalyptus and pine productivity do not exist, data from New Zealand and Australia were used. A subsequent study by Ecopar in the belt where PROFAFOR works (3,000 – 3,800 m), showed some primary results on the quantity of carbon fixation in pine tree plantations (*see Table 1, Annex V*) (Aguirre & HOFSTEDE, in MEDINA *et al.*, 1999: 30-34):

- In 25 years a *P. radiata* plantation[1] can absorb up to 130 Tm C/ha[2]. On an average it is estimated that it absorbs between **50 and 80 Tm C/ha**. The annual average, in a well managed plantation absorbs 2.5 Tm of C/ha/year.
- A *P. patula* plantation absorbs an average of **39.7 Tm C/ha** at the end of rotation, with an annual average of 1.59 Tm C/ha/year.
- For these calculations data from a large variety of plantations were used, showing a very wide range of productivity[3], possibly due to the difference in soils of such plantations. It would seem that the best productivity of *P. radiata* is to be found in the north, where humid andisols[4] prevail with a high content of organic matter, while *P. patula* shows higher productivity in the central provinces of Chimborazo and Cotopaxi, which have young and drier volcanic soils (Aguirre & HOFSTEDE, in MEDINA *et al.*, 1999: 32). In the southern provinces, the two species show much lower productivity. The lack of management in the majority of the plantations may have an influence on the volume of wood, but no evidence has been found. On the contrary, in the industrial plantation of *P. patula* at 3,250 m in La Paz (province of Azuay), which has often been shown as an example of a plantation with certified seeds and good management, productivity was found to be the same or lower than in other cases (Aguirre & HOFSTEDE, in MEDINA *et al.*, 1999:33).

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1 It is considered that following the first rotation (25 years in the case of pine) annual rate of growth is not so high.

2 1 Tm = 103 Kg = 106 g = 1Mg

3 For the calculation of carbon fixation through productivity data, the following formulas were used:
Volume = DBH[i] x height x constant (factor of the form of the tree) ii
Mass of wood = estimated volume x density of the species (0,40 Mg/m3)8, tabulated values + mass of the crown of the tree (branches and needles)[iii]
Organic carbon = total mass x 0.50, a value that is extrapolated to 25 years.
Where: [i] DBH: diameter at breast height.
[ii] Values tabulated in Condoy & Imaycela, 1997, quoted in HOFSTEDE et. al 1999.
[ii] Value tabulated in Nabouurs & Mohren, 1993, quoted in HOFSTEDE et. al 1999.

4 Andisols (Soil Taxonomy, "andosoles" according to FAO-UNESCO). Dark coloured soils, generally developed from volcanic matter(PORTA, J. *et al*, 1994).

At all events, absorption calculated in pine plantations is much lower than the minimum absorption stipulated by PROFAFOR (5.5 TmC/ha/year), as the data on pine productivity (*P. radiata)*, in Ecuador almost never reaches 3 Tm C/ha/year (Aguirre & HOFSTEDE, in MEDINA *et al.*, 1999:32). And, in fact, in New Zealand they showed an annual fixation of 3.68 Tm C/ha.

The ECOPAR study also compared various plots of native forests in a secondary stage of natural regeneration (as presently there are no mass plantations of native species). The results showed that a mono-specific forest of alder trees had the highest productivity, with an average amount of 3 Tm/ha/year. *Polylepis incana* forests showed figures of approximately 2 Tm/ha/year, and mixed forests showed a lower productivity of close on 1 Tm/ha/year (Aguirre & HOFSTEDE, in MEDINA *et al.*, 1999:34-39).

According to ECOPAR research, the plantations with high tree density show greater initial growth and absorb more CO_2 per tree than plantations with lower density. However those with a higher density increase the amount of soil organic matter and with the same amount of trees (if greater areas are covered) possibly capture more CO_2 (ECOPAR, 1997:10).

More recent research shows the quantity of carbon retained by the Paramo ecosystem. The Paramo pajonal has a maximum of 40 tons per hectare of dry matter in the vegetation or, what is the same, **20 tons of elemental carbon per ha** (MEDINA et al, 1999: 4-5).

Figure 0.1: Carbon fixation in the change from grasslands to plantation

Country	Projected scenario		Base scenario		Additional		
		ton. C		ton. C	ton.C	ton. CO_2	ton. CO_2 annual
Ecuador	*Pinus radiata*	267	grass	128	138	507	16

Source: VERWEIJ, 1997:10

We can compare this fixation with the **250 tons** of elemental carbon that a rainforest contains in the vegetation or with the 267 Tm estimated by FACE as a projection of fixation in Ecuador and we will see that ECOPAR calculations are very far from obtaining these targets.

We can also include the calculation of the soil carbon content (not only in the humus as in the CO2FIX model), that in a well conserved Paramo soil, such as in the Angel Paramos, may reach a figure of **1,700 Tm/ha** (MEDINA et al, 1999: 4-5). In an average calculation[5] we may consider that the Paramo soil absorbs 1,000 Tm/ha. Compared to forest soil (some **50 Tm/ha**), this implies that the Paramo may be retaining 4 times more carbon than a rainforest (MEDINA et al, 1999: 4).

[5] *The Comercio*, 22 June 1999. Information from Onno Heerma, coordinator of the Paramo Project.

This great storage of carbon in Paramo soils is due to the slow decomposition of organic matter resulting from the low temperatures, high humidity and volcanic soil composition. The radicular system of the Paramo has already been commented on.

Given that the plantation in a Paramo ecosystem may be drying and at the same time, oxidizing the soil organic matter, it can be seen that the net carbon balance in PROFAFOR plantations may become negative. This means that the application of the CDM in the case of Ecuador might be giving results in which all lose. We are facing a lose-lose case, in which those who will most lose are the future generations that will have to face climate change problems.

* Taken from:

VIDAL, Verónica, "LA APLICACIÓN DE POLÍTICAS SOBRE CAMBIO CLIMÁTICO EN EL SECTOR FORESTAL DEL ECUADOR", Memoria de Investigación Doctorado en Gestión Ambiental y Economía Ecológica, UAB.

ANNEX 3

The World Carbon Cycle*

Emissions from fossil fuels:	5.5 Gt C/year
Emissions from deforestation	1.6 Gt C/year
Fixation by photosynthesis + oceans:	3,7 Gt C/año

On this basis the following are defined:

Sinks:

A sink is considered to be a carbon deposit that is presently accumulating carbon in a net way

Reservoirs (or reserves):

The natural stock of carbon existing in vegetation that would suddenly be released if this vegetation were to disappear or to be eliminated is considered to be a reservoir.

* Taken from:

VIDAL, Verónica, "LA APLICACIÓN DE POLÍTICAS SOBRE CAMBIO CLIMÁTICO EN EL SECTOR FORESTAL DEL ECUADOR", Memoria de Investigación Doctorado en Gestión Ambiental y Economía Ecológica, UAB.

ANNEX 4

Some forest species used in Ecuador to obtain non-timber forest products

Source: Borja, C. & Lasso, S. 1990. Plantas Nativas para Reforestación en el Ecuador. Fundación Natura. Quito. 208p.

http://www.fao.org/documents/show_cdr.asp?url_file=/docrep/t2354s/t2354s0w.htm

GREEN MANURE
Caryodendron orinocense
Lupinas pubescens
Solanum crinitipes

OILS
Attalea colenda
Bursera graveolens
Calophyllum brasiliense
Carapa guianensis
Caryodendron orinocense
Jessenia bataua
Persea americana
Pithecelleobium sp

FOODSTUFFS
Buddleja incana
Carludovica palmata
Ceiba pentandra
Conostegia centronioides
Erythrina poeppigiana
Evodianthus funifer
Hesperomeles heterophylla
Lupinas mutabilis
Oreocallis grandiflorum
Pachira aquatica
Phytelephas microcarpa
Theobroma cacao

PILLOWS, MATRESSES
Cochlospermum vitifolium
Ochroma pyramidale
Poulsenia armata
Ceiba pentandra

HANDICRAFTS
Brosimum guianense
Cedrela montana
Crescentia cujete
Escallonia myrtilloides
Hesperomeles heterophylla
Phythelephas microcarpa
Zizyphus thyrsiflora

WALKING STICKS
Brosimum guianense

BUTTONS
Juglans neotropica
Phytelephas microcarpa

BRUSHES
Pithecellobium arboreum

CORDS, ROPES,
Bixa orellana
Furcraea andina
Guazuma ulmifolia
Mauritia flexuosa
Muntingia calabura
Ochroma pyramidale
Trema micrantha

SHIP CAULKING
Castilla tunu
Chlorophora tinctoria
Symphonia globulifera

DANDRUFF
Genipa spruceana

RUBBER
Castilla elastica
Hevea guianensis

BAIT FOR FISH
Astrocaryum jauari
Ceiba pentandra
Hevea guianensis

BASKETWORK
Astrocaruym jauari
Evodianthus funifer
Ischnosiphon cerotus
Jessenia bataua
Oreocallis grandiflorum

RIBBONS, BELTS
Gossypium barbadense

COLOURINGS
Alnus acuminata
Arrabidaea chica
Bixa orellana
Buddleja incana
Cassia canescens
Chlorophora tinctoria
Cyphomandra hartwegii
Escallonia myrtilloides
Genipa spruceana
Geonoma heinrichsiae
Hypericum laricifolium
Juglans neotropica
Persea americana
Picramnia sellowii

Picramnia spruceana
Pithecellobium sp
Polylepis lanuginosa
Rheedia madruno
Vismia baccifera
Vismia obtusa

NECKLACES
Astrocaryum jauari
Astrocaryum murumuru

CONDIMENTS
Bixa Orellana
Ocimum micranthum

COSMETICS
Caryodendron orinocense
Persea americana
Theobroma cacao

TYRES
Ficus maxima
Furcraea andina

SPOONS
Alnus acuminata
Polylepis lanuginosa

TANNING
Caesalpinia spinosa
Carapa guianensis
Psidium guajava
Weinmannia glabra

CHILLIES
Lacmellea floribunda

BROOMS
Phythephas microcarpa
Spartium junceum

FIBRES FOR HANDICRAFTS
Astrocaryum chambira
Astrocaryum murumuru
Carludovica palmata
Castilla elastica

FORAGE
Acacia macracantha
Agave americana
Alnus acuminata
Brosimum lactescens
Buddleja incana
Calophyllum brasiliense
Caryodendron orinocense
Chusquea uniflora
Guazuma ulmifolia
Leucaena leucocephala
Mimosa quitensis
Pithecellobium dulce
Prosopis juliflora

EDIBLE FRUITS
Abuta grandiflora
Annona cherimolia
Annona muricata
Astrocaryum chambira
Astrocaryum murumuru
Bactris gassipaes
Brosimum lactescens
Caryodendon orinocense
Cocos mucifera
Cyphomandra betacea
Genipa americana
Genipa spruceana
Guazuma ulmifolia
Inga edulis
Inga heterophylla
Inga marginata
Inga spectabilis
Iriartea deltoidea
Jessenia bataua
Juglans netropica
Lacmellea floribunda
Matisia coloradorum
Miconia prasina
Muntingia calabura
Parkia balslevii
Parkia nítida
Passiflora mixta
Persea americana
Pithecellobium dulce
Platymiscium pinnatum
Poulsenia armata
Pourouma chocoana
Pourouma guianensis
Pouteria caimito
Pouteria lucuma
Prunus serotina
Psidium guajava
Rheedia madruno
Rollinia mucosa
Solanum quítense
Spondias mombin
Spondias purpurea
Symphonia globulifera
Tetrathylacium macrophyllum
Vitex gigantea

GUM
Bixa orellana
Cordia lutea

LEAFS FOR BATHS
Matisia coloradorum

HORTICULTURE
Cochlospermum vitifolium

ICHTHYOTOXICS
Cupania cinerea
Erythrina poeppigiana
Minquartia guianensis
Piscidia carthaginensis

INCREASED PASTURE PRODUCTIVITY
Leucaena leucocephala

INSECTICIDES
Annona muricata
Caladium bicolor
Socratea exorrhiza

MUSICAL INSTRUMENTS
Ceiba pentandra
Guazuma ulmifolia
Iriartea deltoidea
Platymiscium pinnatum

SOAPS
Agave americana
Carapa guianensis
Caryodendron orinocense
Ceiba pentandra
Furcraea andina
Schinus molle
Virola sebifera

TOYS
Ceiba pentandra
Ochroma pyramidale
Vismia baccifera
Vismia obtusa

WOOL
Ceiba pentandra
Ceiba trichistandra

LATEX
Brosimum lactescens
Caryodendron orinocense
Hevea sp

LIQUOR
Agave americana
Oenocarpus mapora

MEDICINAL
Abata grandifolia
Aegiphila alba
Alnus acuminata
Andira inermis
Annona muricata
Bactris gussipaes
Bambusa guadua
Bixa orellana
Brosimum utile
Brownea ariza
Brownea herthae
Brugmansia aurea
Brugmansia sanguinea
Buddleja incana
Caesalpinia spinosa
Calophyllum brasiliense
Carapa guianensis
Caryodendron orinocense
Casearia sylvestris
Cassia canescens
Cedrela odorata
Cestrum racemosum
Chlorophora tinctoria
Chondrodendron tomentosum
Chuquiraga jussieui
Cleome glandulosa
Cochlospermum vitifolium
Conocarpus erectus
Cordia alliodora
Crescentia cujete
Croton wagnerii
Escallonia myrtilloides
Ficus insipida
Grias tessmanii
Guanzuma ulmifolia
Hedyosmum racemosum
Hesperomeles heterophylla
Hevea guianensis
Jatropha curcas
Jessenia bataua
Juglans neotropica
Laguncularia racemosa
Minquartia guianensis
Myrcianthes hallii
Myrica pubescens
Neurolaena lobata
Ocimum micranthum
Oreocallis grandiflorum
Oreopanax sp
Parkia balslevii
Persea americana
Phythelephas microcarpa
Polylepis lanuginosa
Pouteria caimito
Protium nodulosum
Psidium guajava
Rheedia madruno
Rhizophora mangle
Rollinia mucosa
Salix humboldtiana
Schinus molle
Simarouba amara
Spartium junceum
Spondias mombin
Symphonia globulifera
Theobroma cacao
Trema mirantha
Trichanthera gigantea
Vallea stipularis

HONEY-MAKING
Andira inermis
Avicennia nitida
Bixa orellana
Calliandra angustifolia
Capparis flexuosa
Casearia sylvestris
Cedrela odorata
Ceiba pentandra
Cochlospermum vitifolium
Cordia alliodora
Genipa americana
Laguncularia racemosa
Pachira aguatica
Persea americana
Pithecellobium arboreum
Pithecellobium sp
Platymiscium pinnatum
Prosopis juliflora
Trichanthera gigantea

WALLS
Bambusa guadua

PERFUMES
Clusia dixonii
Myroxylon balsamum
Ocimum micranthum
Schinus molle

PRESERVATIVE
Rhizophora mangle

INSECT REPELLANT
Bixa orellana
Bursera graveolens
Carapa guianensis

Melia azedarach

RESINS
Caryodendron orinocense
Protium modulosum

SALT
Avicennia nítida

SILK
Pseudobombax millei

EDIBLE SEEDS
Avicennia nítida
Brosimum lactescens
Caesalpinia spinosa
Erythrina edulis
Leucaena leucocephala
Parkia balslevii

HATS
Carludovica palmata
Ochroma pyramdale

PROPS
Bambusa guadua

TANNINS
Avicennia nítida
Caesalpinia spinosa
Carapa guianensis
Caryodendron orinocense
Conocarpus erectas
Laguncularia racemosa
Rhizophora mangle
Schinus molle
Wrinmannia fagaroides

ROOFS
Agave americana
Attalea colenda
Bambusa guadua
Carludovica palmata
Cassia canescens
Iriartea deltoidea
Mauritia flexuosa
Phytelephas microcarpa
Simarouba amara

WEAVING
Attalea colenda
Brosimum utile
Castilla elastica
Castilla tunu
Ceiba pentandra
Ficus maxima
Gossypium barbadense
Mauritia flexuosa
Poulsenia armata

PLATFORMS
Oreocallis grandiflorum

POISONS FOR HUNTING
Cespedesia spathul

ANNEX 5

METHODOLOGY

FACE-PROFAFOR PROJECT IN THE ECUADORIAN SIERRA

Social and Environmental Impacts of a False Solution to Climate Change on Indigenous Communities in the Andes

Acción Ecológica, 2004

MAIN OBJECTIVE

To determine the social and environmental impacts of the FACE – PROFAFOR project on communities in the Ecuadorian Sierra.

SPECIFIC OBJECTIVES

1. To obtain up-dated information on the execution and dimensions of the FACE- PROFAFOR Project in the Ecuadorian Sierra, to enable the initiation of monitoring of the application of international policies on Climate Change in the forestry sector of Ecuador.

- To determine the perception of members of indigenous communities in the Ecuadorian Sierra who have established forestation contracts with PROFAFOR, regarding the

relationship between the communities and the company and regarding the REAL benefits derived from these contracts.

- To determine the impacts of the establishment of plantations on land tenure and access – both present and future – regarding the land of the local inhabitants.
- To determine the relationship between the establishment of plantations and the availability of water resources, biodiversity and subsistence resources for the inhabitants and local communities.

2. Analysis of certification granted by FSC to the FACE – PROFAFOR Project, comparing the information obtained during field work with FSC Principles and Criteria.

- Analysis of the political consequences of certification and its relationship with the local capacity for land use, access and tenure and with the capacity for mobilization.

JUSTIFICATION

The usefulness of this work will be reflected in:

- The production of reliable and up-dated information on the impacts and execution of the FACE- PROFAFOR project in communities of the Ecuadorian Sierra.
- Identify those affected by the FACE – PROFAFOR project.

METHODOLOGY

Due to the subject matter of interest, the idea was to carry out an exploratory study that, through 3-5 case studies, would enable us to obtain up-dated qualitative information on the diverse social and environmental impacts generated by the activities related with the implementation of the FACE-PROFAFOR Project.

In the preparation of this study the methodological orientation of the field work used the importance of *in situ verification* of fulfilment of the FSC *Principles and Criteria* as a reference, together with the guarantee they seek to offer to achieve social and environmental benefits.

On revising FSC and SGS documents available in their electronic portals, we saw that the Public Summery Report on Certification, the Checklists and the document of the first Surveillance Visit, assert different aspects of difficult – and doubtful – application in the community context of the Ecuadorian Andes.

Likewise, a compilation was made of the literature on issues relating to Emissions Trading and Climate Change negotiations, Forest Certification and the impacts of Plantations or monoculture tree plantations, together with the characteristics of the fragile Andean ecosystem where such plantations are being established: the Paramo.

With the information gathered, guidelines were established for interviews with qualified informers and community workshops were prepared. We were able to gather the most useful information for this study during the workshops. A participatory exercise was carried out at the workshops with the communities, seeking to give a dimension to the *exchange* between PROFAFOR and the

communities. A matrix was prepared taking into account the activities required for each stage of plantation: Establishment, Maintenance, and Harvesting.

Trips were also made to the plantations of the communities visited.

The sample selected for this study includes communities from the North Sierra, Province of Imbabura and Pichincha, and the Southern Sierra of Ecuador, the Provinces of Cañar and Azuay.

In spite of the fact that this study gathers the experience of the communities in the above-mentioned regions, the work with communities affected by PROFAFOR has not concluded and presently Accion Ecologica is carrying out monitoring and follow-up work with the communities of the Central Sierra of Ecuador.

INTERVIEWS AND WORKSHOPS

INTERVIEWS	
Montserrat Albán	Co-author of "Un análisis de los impactos sociales y económicos de los proyectos de fijación de Carbono en el Ecuador: el caso de PROFAFOR-FACE" ("An analysis of the social and economic impacts of projects for Carbon sequestrarion in Ecuador: the PROFAFOR-FACE case") EcoCiencia/IIED, March 2004
Luis Fernando Jara	Manager of FACE PROFAFOR
Andrés Yupa Caguana	President of the Caguanapamba Community
Father Rafael Cabrera	Parrish priest of the San Sebastián de SigSig Commune
WORKSHOPS	
Assembly San Sebastián de SigSig Commune. Province of Azuay. June and August 2004	
Pisambilla Community, Cayambe. Province of Pichincha. June 2004	
Leaders of the Caguanapamba Community. Province of Cañar. August 2004	
Leaders of the Calpaquí and Mojandita Avelino Dávila Communities. Province of Imbabura. August 2004	
Assembly Chuchuquí Community. Province of Imbabura. August 2004	

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