Indigenous Peoples and Climate Change:

Vulnerabilities, Adaptation, and Responses to Mechanisms of the Kyoto Protocol

A Collection of Case Studies

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Introduction

Since the inception of the *United Nations Framework Convention on Climate Change* (UNFCCC) in 1992, Indigenous Peoples have sought to have a voice in a process that is certain to shape much of the future of the planet and all of its inhabitants. Indigenous Peoples have tried, so far with very limited success, to be an official and recognized part of these proceedings – not only because they are often particularly vulnerable to the effects of climate change, but also because they are significantly impacted by the decisions made and actions taken under the UNFCCC.

Indigenous and Tribal Peoples face some of the gravest effects of climate change because they inhabit many of the world's most fragile ecosystems (including forests, islands, coastal regions, and wetlands). As the consequences of climate change are being felt to a greater and greater degree across the globe, those who rely on the land and sea for their livelihoods, cultural foundations, and spiritual roots are facing more and more pronounced threats to their very existence. From the Arctic to the Pacific islands, Indigenous groups are experiencing declining crop yields, deteriorating hunting conditions, shifting weather patterns, and disappearing coast lines.

The UNFCCC and the 1997-drafted *Kyoto Protocol* are the institutional outcomes of years of global efforts to combat climate change. Unfortunately, in spite of the important steps being made, Indigenous Peoples may very well suffer more than they will benefit unless they are recognized as rights holders and given the opportunity to fully participate in these international proceedings. Although they have worked together in small forums and caucuses at the Conferences of Parties to the UNFCCC, they have thus far been recognized as little more than the equivalent of a non-governmental organization. In the absence of integrated input from Indigenous, traditional, and Tribal Peoples, a system is being established that will, in many cases, run counter to the health and survival of these groups. In particular, the Clean Development Mechanism, instituted under the Kyoto Protocol, promotes actions and projects (such as the development of carbon sinks) that both threaten Indigenous Peoples' ways of life and have a debatable impact on climate change itself.

The principal cause of the lack of recognition of Indigenous Peoples is the scarcity of research and information documenting the full impact of this multifaceted issue on their communities. While articles and papers have been written on related topics (in particular by the World Rainforest Movement) there has yet to be a cohesive published report outlining the areas of concern

and action prioritized by Indigenous Peoples.[1] Such a study is necessary in order to raise awareness and demonstrate the need to include Indigenous Peoples in the proceedings of the UNFCCC and related processes.

This collection of case studies seeks to move toward those goals by illustrating three different but interconnected features of the issue at hand. Together, the four case studies contained in this volume present a detailed and comprehensive picture of the vital role Indigenous Peoples can – and must – play in the global effort to address climate change

[1] Please see www.wrm.org.uy for examples of this literature.

Executive Summary

Authored by independent consultants and coordinated by the International Alliance of Indigenous and Tribal Peoples of the Tropical Forests, the four case studies presented in this volume aim to raise awareness of the experiences of Indigenous Peoples who are facing climate change impacts and working to address this issue at the local and global levels. This report will explore not only the direct effects of climate change and communities' adaptive responses, but also the impact of the mechanisms put into place in these communities under the *Kyoto Protocol*. A draft version of this report was presented at the 12th Conference of Parties (COP-12) of the UNFCCC in Nairobi (6-17 November, 2006) with the intention of contributing to well-informed recommendations for both policy and practice.

Report Guidelines and Framework

This publication takes the form of four independent case studies from diverse regions: Latin America, Africa, Asia, and the Pacific. When taken as a whole, it provides a coherent analysis of the impact of a global phenomenon on a unique group of peoples. It also presents an account of Indigenous Peoples' reactions to both the climate change crisis itself and to an international response system that was created almost entirely without their input.

The authors of the case studies were provided with the following guidelines:

> All case studies should have a strong emphasis on sharing the personal and community level experiences based on their own accounts. Consultants should then augment and substantiate this, where possible, with a strong foundation from the available literature. Studies should be well referenced and show how existing research supports the realities described by Indigenous Peoples, to the greatest extent possible.
>
> Studies should identify one or a few communities within one country and examine the specific issue as it pertains to them - but in a national context. It should focus on the communities' experiences while exploring the details and effects of policies and actions of the national/local governments (particularly the national level since these are the Parties to the UNFCCC). For

> example, if Indigenous Peoples are not rights holders, then the first [case study] should show how this creates specific vulnerabilities or affects their ability to adapt.[1]

The five authors subsequently drafted reports addressing the following three issues in the context of Indigenous communities:

1) Impacts, Vulnerabilities, and Adaptation
2) The Impact of the Clean Development Mechanism
3) Land Use, Land-Use Change, and Forestry

Mr. Fiu Mataese Elisara-La'ulu provides an exploration of the first topic by examining the situation faced by, and coping mechanisms developed amongst, Indigenous groups on the Pacific Island of Samoa. There is still much that remains unknown concerning the current and predicted impacts of climate change on Indigenous Peoples; similarly, there are many questions emanating from within and beyond the Indigenous community about what kinds of adaptation strategies will succeed, at what cost, and how widely those strategies can be shared and implemented. Indigenous communities are already working to answer these questions, and this study documents, at least in part, their progress.

Working from the foundation provided by the first case study, the second report, by Mr. Sinafasi Makelo Adrien, investigates the history and potential impacts of projects initiated under the Clean Development Mechanism (CDM) in the Democratic Republic of the Congo. He offers insight into the role that the CDM and related projects have – and will continue to have – in the livelihoods, cultures, and daily lives of Indigenous individuals and groups. Ms. Anna Pinto follows the second report with another detailed case study of the impacts and potential consequences of CDM projects, this time in North-Eastern India. Her report takes a broad approach to understanding the atmosphere in which CDM projects are developed and implemented in the region. Both case studies examine not only the projects' impacts on Indigenous communities, but also the extent to which Indigenous Peoples had the opportunity to provide direct input into the process. They also touch on government Parties' limited recognition of Indigenous Peoples as rights holders, and the consequences that this has had on project drafting and implementation.

In the fourth and final case study, Mr. Johnson Hugo Cerda Shiguango examines the significance of land use, land-use change, and forestry, focusing on the sustainable practices of Indigenous and Tribal Peoples living

[1] Excerpt taken from the Terms of Reference provided to case study authors in April, 2006.

or originating in forested areas. The emphasis is on the efficacy of these community-centred practices, and therefore on the need to recognize them as successful strategies in need of protection and replication.

Impacts, Vulnerabilities, and Adaptation

Climate change remains a rather vague concept for many, conveyed either in terms too technical to comprehend or in rhetoric bordering on hyperbole. In this report's first case study Mr. Elisara-La'ulu avoids both extremes, clarifying the relevance of climate change to Indigenous communities by offering the reader the opportunity to discover its myriad effects on life on the Pacific Islands. While much of this account presents disheartening experiences and statistics, it also conveys a significant amount of hope. The author effectively captures the resilience of Indigenous Peoples under threat, and their ability to produce and promote alternative, sustainable solutions.

Mr. Fiu Mataese Elisara-La'ulu opens the introductory case study by providing background information on the Samoan Islands and their Indigenous inhabitants. An environmental background focuses on the elements that are most relevant to a report on climate change, including weather patterns, cyclones, sea level rise, and land ownership. Then, in order to describe specific vulnerabilities, the report draws from the *Samoa Climate Change Synthesis Report* to outline threats to agriculture and food security; water; biodiversity; health; forestry; coastal infrastructure and the environment; tourism; urban settlement; and village communities. Based on these nine indices, Mr. Elisara-La'ulu describes observed and predicted effects of climate change. He also uses these areas as a foundation for a discussion of adaptation methodologies, their successes, and their failures.

Drawing from his own experiences, the author focuses mainly on the actions and responses of the Samoan government in addressing climate change at the national and local levels. The case study offers specific examples of how government actions at the national level are viewed by Samoans, particularly Indigenous groups, and whether these actions are seen as effective and appropriate. It further explores Indigenous communities' adaptive responses to these actions, ranging from lobbying for policy change and establishing disaster planning, to developing stable, protective coastal infrastructure.

Mr. Elisara-La'ulu touches on several adaptation measures and assesses their relative levels of success. He offers a specific example in which the Matafa'a community came together to manage a strip of coastal mangroves it believes offers better protection from tropical storms than the

government's Clean Development Mechanism proposals. This case is illustrative of the general sentiments of many Indigenous groups who believe, and can sometimes prove, that their traditional or local management practices are as effective as CDM-driven projects in conserving bioresources and addressing climate change. The first case study ends with a series of lessons learned and concluding recommendations tied into the nine indices noted in the *Synthesis Report*.

The Clean Development Mechanism

After the reader gains an understanding of some of the broad concerns shared by Indigenous groups facing the impacts of climate change, as well as a variety of strategies for adaptation, the report moves into a more in-depth exploration of the UNFCCC's own approach to combating climate change. Specifically, this publication offers two case studies that consider not only the intention behind the Clean Development Mechanism of the *Kyoto Protocol*, but also the realities experienced in the planning process and during implementation. Both case studies focus on the degree to which Indigenous populations were included in – or excluded from – these activities, and the impacts such projects may have on the cultures, lifestyles, and livelihoods of Indigenous and Tribal Peoples.

The Democratic Republic of the Congo

Mr. Sinafasi Makelo Adrien opens his case study by offering insight into the situation of Pygmy groups of the Batéké Plateau in the Democratic Republic of the Congo (DRC). He describes a history of discrimination and subjugation by other tribal groups in order to contextualize the Pygmy groups' current vulnerability to the negative consequences of nationally and internationally-initiated climate change projects. The author then reveals the way in which CDM activities have been developed with limited or no input from the groups who will likely suffer most from their implementation. He also notes the highly technical nature of the *Kyoto Protocol* and CDM which, in combination with the low literacy rate of the Pygmy, presents another barrier to participation.

Mr. Adrien's report focuses on the Ibi Carbon Sinks Project, one of several UNFCCC-sanctioned initiatives in development in the DRC, and its potential impact on the Batswa, one of the most marginalized groups of the Batéké Plateau. In addition to explaining the history of this CDM project and the lack of participation of DRC's Indigenous Peoples therein, he provides

clear reasons for involving the Batswa, based on interviews and visits to the project site. The DRC case study touches on several other CDM activities and describes the general impacts of these projects on the Batswa, including the potential loss of traditional practices, values, and territories. Mr. Adrien presents some of the Batswa's responses to the planned CDM projects, all of which emphasize the retention of cultural activities. The concluding section of this case study offers recommendations centred on the need for greater involvement and consultation by and with Indigenous communities.

India

Ms. Anna Pinto's case study is also concerned with the Clean Development Mechanism and the use of carbon sinks as a way of addressing increased global greenhouse gas (GHG) emissions; however, her report of the situation in North-Eastern India provides an in-depth discussion of several other topics. The author explores both the role of international financial institutions (IFIs) in these processes, and reactions that have emerged in the form of grassroots and civil society campaigns. Ms. Pinto also examines the design and drafting of laws and policies impacting Indigenous groups in the region.

The case study from India reveals a history of dispossessing Indigenous and local communities of their lands in order to pursue energy projects and carbon market reforestation programmes. The author condemns academics, technocrats, and representatives of the IFIs for their role in moving regional policy in directions counter to the interests of Indigenous communities and other marginalized groups. The case study utilizes numerous reports and presentations from national and international organizations to support the claim that these bodies do, indeed, promote activities to address climate change without regard for potential negative consequences at the community level. In exploring civil society mobilizations, Ms. Pinto pays particular attention the campaign against the "net present value" (NPV). NPV allows the government and other bodies to use economic models (specifically, market and public finance principles) to understand and price the use of forests, leaving little room for valuation based on non-economic indicators. The author demonstrates the inability of traditional Indigenous and local perceptions of forests to penetrate this sort of "policy calculus."

The wide-ranging case study of the situation in India also explores issues ranging from the proliferation of armed conflicts over resources to the unique role of women in movements to mobilize communities against harmful projects. In her section on law and policy, Ms. Pinto reveals the

loopholes in legislation regarding the protection of Indigenous Peoples, while also suggesting ways in which the needs of Indigenous and local communities may be met. Instead of merely criticizing the new *Draft National Policy on Tribals*, the author argues for targeted modifications to strengthen the document. In her concluding remarks, Ms. Pinto calls for an abolition of the carbon market in the face of blatant injustices.

Land Use, Land-Use Change, and Forestry

In implementing the *Kyoto Protocol*, the economically developed countries (which have historically been the most significant carbon emitters) are allowed to take into account land use, land-use change, and forestry (LULUCF) when trying to reduce their overall rate of emission. Such considerations address defined practices in human land use, including afforestation, reforestation, and deforestation. While there are numerous questions regarding the science and accounting principles used in granting LULUCF credits, there are additional concerns about the threats to land rights, livelihoods, and cultural practices of those communities currently living on land slated for conversion. In understanding some of the potential social harm of LULUCF activities, it is important to focus on existing practices that may have similar positive effects without many of the dangers.

Ecuador

Mr. Johnson Hugo Cerda Shiuango's chapter offers a discussion of some of the concepts behind land use and forestry practices in Ecuadorean Indigenous communities. Rather than focusing on activities falling within the LULUCF category (sponsored by the government or international agencies), the report documents the way in which traditional forest management can (and often does) achieve the same goals as expensive, extensive, exogamous projects.

The case study elaborates on the traditional forest management activities of the Sarayacu community in the province of Pastaza. Mr. Cerda describes the use of *chacras*, or traditional swidden agriculture sites, and their role in the cultural heritage of these communities. He also explores the creation of natural resource zones as a result of a community mapping project. It is expected that these zones (for example the Hunting Zone, Farming Zone, Extraction Zone, etc.) will help the community to organize its use and management of traditional territories, reducing practices that lead to deforestation. The author argues that since deforestation is one of the major

contributors to climate change, community-driven zoning projects and traditional practices should be classed as supported forms of land use, or at least recognized as valid ways of addressing climate change.

Like the other case study authors, Mr. Cerda describes Indigenous Peoples' campaigns against, and various solutions to, threats to their lands and cultures. Specifically, his report focuses on the efforts by different groups and alliances to oppose oil exploration and extraction on Indigenous territories; the message here is that Indigenous and local groups should be wary of offers from oil companies and other representatives of extractive industries and, instead, work toward maintaining traditional land management practices. Mr. Cerda concludes by noting the importance of traditional knowledge and land management in supporting forest preservation.

Key Recommendations and Conclusions

Indigenous Peoples and Climate Change: Vulnerabilities, Adaptation, and Responses to Mechanisms of the Kyoto Protocol concludes by summarizing the main points raised in the four case studies, and synthesizing recurring suggestions and shared experiences. The emphasis on participatory decision-making and cooperative management of natural resources is evident throughout these studies. The concluding section thus reassesses and reasserts the authors' recommendations for Indigenous Peoples to take action to protect their rights within existing international process while working with others in the global community to promote alternative, sustainable solutions to the climate change crisis.

The Samoa Case Study

An Assessment of Impacts, Vulnerability, and Adaptation to Climate Change in Samoa

Fiu Mataese Elisara-La'ulu

List of Acronyms

CIMP: Coastal Infrastructure Management Plans

CIMS: Coastal Infrastructure Management Strategy

COEP: Codes of Environmental Practice

EIA: Environmental Impact Assessment

FAO: Food and Agriculture Organization

LDC: Least developed country

MNREM: Ministry of Natural Resources, Environment and Meteorology

MPA: Marine Protected Areas

NAPA: National Adaptation Programme of Action

NBSAP: National Biodiversity Strategy and Action Plan

NGO: Non-governmental organization

OLSSI: O le Siosiomaga Society Incorporated

PICTA: Pacific Island Countries Trade Agreement

PIREP: Pacific Islands Renewable Energy Project

PREGA: Promotion of Renewable Energy, Energy Efficiency, and Greenhouse Gas Abatement

PUMA: Planning and Urban Management Agency

RET: Renewable Energy Technology

TEP: Tourism Environmental Policy

UNDP: United Nations Development Programme

UNFCCC: United Nations Framework Convention on Climate Change

USD: United States Dollar

WST: Samoan Tala (national currency)

About the Author

Fiu Mataese Elisara-La'ulu joined O le Siosiomaga Society Incorporated (OLSSI) as its Executive Director in February 2002. He came to the organization after spending over eight years (1993-2001) with the United Nations Development Programme (UNDP) in Samoa. Six-and-a-half of those years were as Assistant Resident Representative. Before joining UNDP, Fiu was Director of the Department of Lands, Surveys and Environment in the Government of Samoa. In that capacity, he was one of the official government representatives who followed the global process in the United Nations Conference on Environment and Development held in Rio de Janeiro in 1992.

Fiu is passionate about Indigenous Peoples' issues, sustainable development, and environmental concerns. He has taken up the post of Executive Director of OLSSI with the commitment to be more closely involved with communities in the protection of their rights, the wise and sustainable use of their natural resources, and the conservation of the environment. He is currently a strong defender of traditional land tenure in Samoa, and is actively campaigning for the preservation of that system as an invaluable asset and an inherent, inalienable right of the Indigenous Samoans and local communities of the Pacific Islands.

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Executive Summary

Climate change and its negative consequences pose a major threat to the economic, social, and environmental well-being of Samoa and its Indigenous Peoples and local communities. In response, Samoa has tried to be proactive at the international, regional, national, and local levels not only to raise awareness about the root causes of these threats, but also to determine what action it can take to protect its Indigenous population from the negative effects of climate change.

At the international level, as one of the members of Alliance of Small Island States, and at the regional level, as a member of the Pacific Forum, Samoa has lobbied developed countries to make large-scale reductions in greenhouse gas emissions. Unfortunately, it has also broadened its response to climate change to include adaptation activities, and has now entertained Clean Development Mechanism (CDM) projects that will negate all the noise Samoa made in the United Nations Framework Convention on Climate Change (UNFCCC) process about cuts in greenhouse gas emissions by developed countries.[1]

At the national level, the framework for climate change activities in Samoa is enshrined in both the *Strategy for the Development of Samoa 2005-2007*, which serves as the overarching guide to development activities in the country, and the *National Environment Management Strategies*, which is initiating support for tackling environmental concerns.[2] Additionally, the draft national climate change policy, which should gain approval by Cabinet in 2006, is a good indication of the country's objectives in this area. These include issues such as: raising public awareness; increasing understanding of the causes and effects of climate change by stakeholders (such as the Indigenous Peoples of Samoa); strengthening management of climate change information; building response capacity; incorporating climate change issues into development planning; promoting partnerships; building institutional structures (for which the Climate Change Section of the Meteorology Division of the Ministry of Natural Resources, Environment and Meteorology (MNREM) is responsible); and supporting legislation, policies, and strategies.[3] This last element includes policies such as the *Lands Survey*

[1] UNFCCC Task Team of the Ministry of Natural Resources, Environment, and Meteorology, "National Capacity Self Assessment Thematic Assessment Report on UNFCCC" (April 2006).
[2] Government of Samoa, "Strategy for the Development of Samoa 2005-2007: Enhancing People's Choices" (2004).
[3] South Pacific Regional Environment Program, "Capacity Building for the Development of Adaptation Measures in Pacific Island Countries (CBDAMPIC): Economic Assessments of Pilots" (February 2006).

and Environment Act (1989), the *Planning and Urban Management Act* (2004), the *First National Communication to the UNFCCC*, the *National Adaptation Programme of Action* (NAPA) adopted by Cabinet in late 2005, and the *Coastal Infrastructure Management Strategy* (CIMS) and *Coastal Infrastructure Management Plans* (CIMPs).[4]

This case study will focus mainly on the activities of the Samoan government, at the national and local levels, in addressing the negative impacts of climate change on its Indigenous Peoples. It will also offer examples of how the Indigenous Peoples of Samoa are affected by these climate change impacts, and how they perceive the government's actions and reactions. It will further explore Indigenous communities' adaptive responses to these challenges and briefly touch on the impact of the mechanisms put into place under the *Kyoto Protocol*.

Where threats from climate change cannot be reduced, mitigated, or eliminated, Samoa is one of the countries that has been forced to accept the notion that adaptation is the only responsive option available. Its Indigenous communities are asked to adapt to changes for which they are not responsible, and to which they have only negligibly contributed. This demand for adaptation is pushed by the same developed or industrialized countries that are the root cause of climate change!

"Adaptation" refers to both physical adjustments and technical measures (such as constructing a higher sea wall) and changes in behaviour, economic activity, and social organization that arise in response to existing or emerging conditions or threats. The latter requires adaptive capacity, including the ability to develop new options and deliver them to benefit vulnerable populations. This case study will detail the Samoan government's targeting of a number of areas in its effort to combat the negative impacts of climate change on its Indigenous population and how these areas – identified through consultations with the Indigenous communities themselves – have been the subject of strategies developed to provide a coordinated response and collective action plan.

[4] See Government of Samoa, "Planning and Urban Management Act" (2004).
Also see NAPA Task Team of the Ministry of Natural Resources, Environment and Meteorology, "National Adaptation Programme of Action (NAPA) of Samoa" (2005).

Introduction and Background

The Country and its Affected Indigenous Groups

Samoa, a small island nation in the South Pacific Ocean, was the first in the region to become independent, in 1962. The Indigenous Peoples of Samoa are Polynesian, living in 330 village communities along the coast and, more recently, inland, with the development of cross-island roads. The 2001 national population and housing census of the Samoan government showed the total population of Samoa to be 174,140.[5] Samoan society is based on the social unit of the *aiga*, or extended family. Each extended family is headed by a *matai*, or traditional chief, who is appointed by consensus of the *aiga*. The *matai* assumes responsibility for the welfare of the *aiga*, including directing the use of family assets (including lands). The collective institution of *matais* constitute the village council, or *fono ale nu'u*, which controls the affairs of the village, keeps order, and provides direction with regard to village governance and development.

According to the National Capacity Self Assessment, approximately 70 percent of Samoa's Indigenous population and infrastructure are located in low-lying coastal areas. Projected sea level rise could exacerbate coastal erosion, loss of land and property, and dislocation of the island's inhabitants. The tropical cyclones "Ofa" (1990) and "Val" (1991) were extreme events that caused damages estimated at approximately four times the gross domestic product[6] of Samoa.[7] Their high winds, storm surges and heavy rains severely damaged agricultural plantations, infrastructure, and the country's socio-economic base. Changes in tropical cyclone systems increase the risk to life, property and ecosystems. As a semi-subsistence nation, Samoa is sensitive to the kinds of threats to water supplies, food production, and natural resources that are associated with climate change and climate variability.[8]

The framework for Samoa's programme of action builds upon the national development goals, strategies, and action plans implemented by the federal government. The 2005-2007 *Strategy for the Development of Samoa*,

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[5] Statistics Department of Samoa, "Census of Population and Housing: A Special Release of Census Selected Tabulations" (Samoa: 2001).

[6] Gross domestic product is defined as the value of all final goods and services produced in a country in one year. See the World Bank, "Beyond Economic Growth." http://www.worldbank.org/depweb/english/beyond/global/glossary.html#34 (Accessed March 17, 2007).

[7] NAPA Task Team of the Ministry of Natural Resources, Environment and Meteorology, "National Adaptation Programme of Action (NAPA) of Samoa" (Samoa: 2005).

[8] John E. Hay and Associates Ltd., "Climate Risk Profile for Samoa" (New Zealand: May 2006).

with its theme of "enhancing people's choices," articulates six priority strategic areas that guide Samoa's development, including building up the following areas: the private sector, agriculture, tourism, community, education, and health. The four *National Environmental Management Strategies* have a common goal of promoting sustainable development in all forms of development in Samoa.

The Climate

The Samoan climate is tropical, marked by distinct wet (November-April) and dry (May-October) seasons. Storm patterns affecting Samoa originate from three main sources: tropical easterlies that cause winds from the southeast; cold fronts from Australian systems that cause rain and flows of cold air; and storms from the southwest Pacific that generate cyclones at the point where the easterlies and westerlies meet. According to the NAPA report, the projected climate change impacts for Samoa will mean reduced overall annual rainfall, higher occurrences of high-intensity rainfall, increased average temperatures, rising sea-levels, and increased tropical cyclone frequency and intensity.

Recent studies and the tracking of cyclones in and around the Samoa region have found an increase in the frequency of tropical depressions, gale-force winds, and tropical cyclones during the storm season (December to February).[9] Cyclone "Heta" struck the islands in February 2004 and, during 2005, there were five tropical cyclones that developed in the Samoan region and moved in a southerly direction. These included "Lola," "Meena," "Nancy," "Olaf," and "Percy," with the two latter tropical cyclones, both ranked as Class 5 (major hurricanes),[10] being the closest near-misses for Samoa.

The rise in sea level is said to be due primarily to thermal expansion and the melting of glaciers and ice caps.[11] Samoa's projected sea levels, based on analysis of 10-year data spans, indicate that the local change in sea level will be far higher than the minimum global projection of 9 centimetres

[9] NAPA Task Team of the Ministry of Natural Resources, Environment and Meteorology, "National Adaptation Programme of Action (NAPA) of Samoa" (2005).

[10] Hurricanes are ranked according to their maximum wind speeds, using the "Saffir-Simpson Hurricane Scale." A Category 5 hurricane has the highest, with winds in excess of 249 km/h, while all hurricanes above Category 3 are classified as "major." National Hurricane Center, "The Saffir-Simpson Hurricane Scale," National Oceanic and Atmospheric Administration. http://www.nhc.noaa.gov/aboutsshs.shtml (Accessed January 15, 2007).

[11] Intergovernmental Panel on Climate Change (IPCC), "Climate Change Synthesis Report" (2001).

between the years 1990 and 2100.[12] The South Pacific Sea Level and Climate Monitoring project shows a projected rise of 3.8 mm per year for Samoa, or 41.8 centimetres over the global prediction period (1990-2100).[13]

Land Ownership

In Samoa, eighty-one percent of land is owned by the extended Indigenous *aiga*s or families, under customary ownership, as stated in the 2004 *Samoa National Assessment Report* submitted to the Mauritius Conference in January 2005 (which provided the 10 year review of the *Barbados Programme of Action for the Sustainable Development of Small Island Developing States*[14]). The alienation of customary land is prohibited by law under the *Alienation of Customary Land Act* (1965), which stipulates that customary land cannot be transferred nor made freehold (although lease arrangements are possible). According to the same report, eleven percent of the land is public land, with five percent of this under the "Samoa Trust Estates." Eight percent of land in Samoa is freehold.

There is a growing trend toward the privatization of customary lands, and this change is significant for two reasons. First, it shows that the traditional way of life of Indigenous Samoans, along with their Indigenous status, is slowly eroding, and that people are being forced to adapt to changing (and externally imposed) economic circumstances. Second, the security of Indigenous Samoan land rights is threatened by increased assignment of land tenure to individuals who clear the land, and who benefit from inheritance rights which exclusively bequeath the land to their children.

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[12] Intergovernmental Panel on Climate Change (IPCC), "Climate Change Synthesis Report" (2001).

[13] Bureau of Meteorology, "South Pacific Islands Reports: Samoa," Australian Government. http://www.bom.gov.au/pacificsealevel/picreports.shtml (Accessed January 11, 2007).

[14] "In April 1994 a global conference was held in Barbados to consider how small island States could face up to their special challenges. The Global Conference on the Sustainable Development of Small Island Developing States determined that sustainable development was the logical answer, and adopted the Barbados Programme of Action for the Sustainable Development of Small Island Developing States to help bring it about." United Nations Environment Programme: Regional Seas Programme, "Barbados Programme of Action for the Sustainable Development of Small Island Developing States." http://www.unep.ch/regionalseas/partners/sids.htm (Accessed March 10, 2007).

The Economy

The economy of Samoa is relatively small, with an aggregate gross domestic product, in current prices, of WST[15] 1.13 billion (approximately USD 390 million) in 2005.[16] This implies a per capita income of USD 2,250. The *Quarterly Economic Review* (October-December 2005) from the Ministry of Finance's Economic Policy and Planning Division also states that in the years 2000-2005, the highest real growth rate (of 5.1 percent) was recorded in 2005. Additionally, remittances (which are also connected to climate change since increasing numbers of people migrate to avoid becoming "environmental refugees") continue to be the largest contributor to the country's economy, being responsible for about twenty percent of Samoa's GDP.[17]

Vulnerabilities, Current Impacts, and Potential Effects of Climate Change

This section attempts to address a number of current and predicted climate change effects by making specific reference to the experiences of the Indigenous communities that have been part of the NAPA process. These communities are also closely associated with the work of a non-governmental organization, O le Siosiomaga Society Incorporated (OLSSI). Generally, of the thirteen sector vulnerabilities noted in the *Samoa Climate Change Synthesis Report*, threats in nine different sectors were confirmed by the Indigenous Peoples themselves.[18] Visits by this author to the Indigenous communities of Saoluafata and Matafa'a (on the Island of Upolu) as well as Lano and Sili (on the Island of Savaii) confirm that these are still relevant sectoral concerns. At these visits, during May and June of 2006, there was particular emphasis on the following sectors.

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[15] WST is the currency code for the Samoan Tala.

[16] Asia Development Bank, "Samoa Country Environmental Analysis: Mainstreaming Environmental Consideration in Economics and Development Planning Processes" (TA: 6204 – REG, May 2006).

[17] M. Elisara-La'ulu, "People's Report on Progress Towards the Millennium Development Goals in Samoa," in: *Breaking with Business as Usual: Civil Society Country Reports on the MDGs* on CD.ROM (London: Commonwealth Foundation, 2005).

[18] The *Synthesis Report* itself was conducted with input from Indigenous village communities, during the process of developing Samoa's national adaptation programme of work.

Agriculture and Food Security

A confluence of tropical cyclones, temperature fluctuations, lengthening periods of drought, and flooding events impacts not only day-to-day food supply from traditional sources, but also income-generating agricultural activities for Indigenous Samoan groups and the country at large. Crops with low tolerance levels to climate hazards – including one of Samoa's staple crops, banana – are the most threatened. Accelerated erosion from destructive wave activity, frequent storm surges, and landslides causes land loss in traditional communities, directly impacting not only food self-sufficiency and commercial agriculture, but simple food security. Plantations and livestock are the major sources of subsistence living for the Indigenous communities in Samoa, all of which now face serious threats from new diseases and pests linked to flooding, drought, and other variations in climate. Pest-borne diseases have been spread by the stronger winds associated with climate variations; for example, the disastrous spread of taro crop blight in the 1990s was linked to higher frequency of wind-distributed disease (in this case, taro leaf blight spores). Sales of taro provided 58 percent of all domestic earnings in 1993, but an outbreak of the taro leaf blight devastated the crop in 1994 and reduced exports to almost nil in that and subsequent years, according to the *Strategy for the Development of Samoa 2002-2004*. Extreme events such as tropical cyclones and storm surges additionally affect coastal plantations, while the increasing incidence of forest fires in rural communities have led to the destruction of crops. Any increase in the incidence of fires will increase the stress on traditional food sources. Further, instability of food production levels means that higher demands for food, resulting from climate-induced disasters, cannot always be met.

Water Quality and Quantity

The water sector faces quality, accessibility, and availability issues that impact directly on the livelihoods of the communities. While drought is the most obvious and hard-felt impact, flooding also occurs, and there is currently no strategy for adapting to its adverse effects. Sea level rise increases the possibility of salination of the fresh water supply through seawater intrusion into underground water aquifers – many coastal communities have already experienced this effect. Indigenous communities will be further impacted with the European Union's Water Sector Support Programme (WASSP-9-ACP-WSO-004 and 9-ACP-WSO-005), which is now investing heavily in Samoa. Privatization of this public sector service and public good is expected to create resistance from the Indigenous

population of Samoa, as they will be forced to pay water rates that they are not able to afford. Adding to the significance of this issue is the fact that, while poor water quality is known to trigger water-borne diseases that significantly affect public health, access to clean water sources is already a common problem for all Indigenous communities in both coastal and inland areas.

Biological Diversity

All other vulnerabilities, in every other sector, pose a direct threat to biodiversity and natural resources. Samoa's biodiversity is highly vulnerable to impacts from tropical cyclones, drought, temperature fluctuations, and changes in precipitation patterns. These effects lead to changes in the habitats of endangered and endemic species, with disastrous effects; for example, many forest birds have declined in numbers to the extent that some bird species have been completely decimated. This affects not only terrestrial, but also aquatic ecosystems. The Indigenous Peoples of Samoa depend on the islands' biodiversity for herbal medicine, primary health care, daily food supplies, energy needs, and general livelihood.

Human Health

Water quantity and quality are impacted by poor sanitation, stagnation, and sedimentation; the effects of which are felt not only in the livelihoods but also in the health situation of the people. The NAPA report alludes to evidence of growth in vector-borne and water-borne diseases, confirming the impact that the changing climate has already had on the health sector. The conditions for the occurrence and spread of these diseases are favoured by the changes in climate currently witnessed in Samoa. Water scarcity during periods of drought triggers outbreaks of vector-borne and other diseases. Although drought is a concern, flooding is equally problematic as there is currently no strategy for adapting to the adverse effects of flooding. Samoa has experienced frequent floods from extreme rainfall events, causing the unreliable water supplies and poor water quality mentioned above; these, in turn, have had significant consequences for the health of the people. Flooding is known to be a major cause of illnesses like typhoid and diarrhoea. Correlations between climate change and health, including the provision of data on the subject, are an issue that needs to be raised continually at both the community and government levels.

Forestry

Forests and trees (due to their role in watershed management, environmental protection, the provision of wood and non-timber resources, and as a reserve of biodiversity) are highly vulnerable to drought in the dry season. While drought itself has a negative impact on the vitality of the forest, worsening drought conditions also increase the risk of forest fires. Samoa experienced four major forest fires from the drought/dry periods of 1982-83, 1997-98, 2001-02, and 2002-03. This forest sector is seriously affected in Samoa not only by such fires, but also by changes in the land use and subsistence practices of Samoans.[19] While most statistics suggest that Samoa has about fifty percent forest cover, in an address to Samoan foresters and watershed managers at Vailima, Samoa in January 2003, the Chief Executive Officer (CEO) of the Ministry of Agriculture, Forests and Fisheries stated that the level of virgin or pristine forest had been reduced to about five percent.

Coastal Infrastructure and Environment

Infrastructure assets will be the most vulnerable sector, given the cost of their construction and maintenance and the high concentration of infrastructure found along the densely-populated coastlines. *Coastal Infrastructure Management Plans* do exist, but coastal infrastructure assets remain highly vulnerable as long as there is neither critical management and implementation of these plans, nor any extension of the plans to accommodate inland flooding and watershed management. Approximately seventy percent of the Indigenous population resides in the coastal areas, meaning that coastal erosion is an issue that is not taken lightly by village communities. Sea level rise, storm surges, and tropical severe weather events (tropical depressions, gale force winds, storms, and hurricanes) are the main causes of this erosion, while other human activities, such as sand mining and development near or on the sea, exacerbate the effect. An increasing number of village communities are already experiencing flooding in new areas; many, like the village of Lano on the island of Savaii, suffer mainly from coastal inundation, a major concern addressed in climate adaptation pilot projects. Such problems are worsened by deforestation, caused by human activity, in uphill and inland areas. Again, tropical storms and surges contribute to the crisis. According to the NAPA report, the intense wave activity of storms has also overturned much of the coral near the shore and

[19] NAPA Task Team of the Ministry of Natural Resources, Environment and Meteorology, "National Adaptation Programme of Action (NAPA) of Samoa" (2005).

severely damaged corals to depths of up to 10 meters (30 feet).[20] This has a related impact on the supply of near-shore fish, upon which Indigenous Peoples depend for their daily sustenance.

Tourism

Tourism is a major economic sector in Samoa. Unfortunately, the impacts of climate change and climate variability include loss of beaches, inundation and degradation of the coastal ecosystems, saline intrusion, damage to critical infrastructure, and the loss of attractiveness of the coral due to bleaching (itself caused by heat stress and high humidity, and considered a direct result of climate change by Indigenous communities). As evidenced by the Asian tsunamis, climate change risks and disasters seriously threaten the tourism sector, particularly since most of the national infrastructure is located along the heavily-populated coast. Climate change is already clearly affecting the tourism industry – for example, the frequency of drought periods forces tourist-oriented businesses to close down because of poor water quality or inadequate water supply, which increases the risk of disease outbreaks that can seriously impair the industry.

Urban Settlement

Climate change will have a significant impact on urban settlements, especially in the face of rising population growth rates and continued urban migration. Sea level rise is already proving costly to the nation as the government tries to address flooding-induced drainage problems around the town of Apia and its hinterlands.[21] Poor drainage systems, salination of freshwater areas, and an increasing urban population will only exacerbate the impacts of climate change on urban settlements.

Village Communities

The livelihood of village communities is threatened by the impacts of climate change, including: damage to homes and properties during cyclones; unreliable water supply and poor water quality from potential salination of

[20] NAPA Task Team of the Ministry of Natural Resources, Environment and Meteorology, "National Adaptation Programme of Action (NAPA) of Samoa" (2005).
[21] There are now more people living in the town of Apia and its hinterlands than on the big island of Savaii.

underground fresh water supplies; damage to plantations for both subsistence sustenance and commercial purposes; coastal erosion; flooding of low-lying areas; and damage to cultural and heritage assets. Indigenous village communities, like those at Saoluafata and Lano, depend heavily on the environment and natural resources; for example, coastal springs and rivers are utilized heavily for water supplies and sanitation, making low-lying areas (which these villages occupy) particularly at risk of salination. The adverse impacts of climate change on these resources therefore hold vast potential for triggering negative shifts in social, cultural, and economic circumstances. In addition to these indirect effects, the social development of Indigenous communities is also impacted directly by climate change, since the environment is closely and intricately linked to the cultural values and heritage of the *faa Samoa* (Samoan way of life). Historical lands and *malae* (cultural grounds) of traditional and Indigenous villages are being eroded by population increases not only in the fringe urban areas, but also in the coastal communities. Finally, the coastal infrastructure vital to village communities, such as school buildings, church buildings, halls, *malae*, bridges, roads, homes, and properties, are physically threatened by extreme weather events, as has been evidenced by past tropical cyclone activity.

Other Potential Effects: New Development Projects and Rising Energy Needs

While direct impacts of climate change are myriad – including erosion; flooding and sedimentations; decreases in water quantity and quality; increased health hazards; destruction of crops; damage to community assets; and a loss of biodiversity, heritage, and land values – indirect effects often stem from natural resource development. Examples here are given in the context of a discussion of a large-scale hydroelectric power project proposal, and in light of increased power demands brought about by climate change-induced droughts and blackouts.

Since 1985, the villages of Sili, Gataivai, Gautavai, Puleia, and Papa on the big island of Savaii have had their rivers, lands, properties, land development projects, and natural resources targeted by the government of Samoa for a hydro-electric power project (a renewable energy option).[22] Over USD 15 million has been spent by the Asian Development Bank on more than eight feasibility studies (*TA 3985* being the latest, in 2003) without any genuine consultation with the Indigenous Peoples who are the owners of

[22] This is based on cultural and traditional dialogue and discussions with the chiefs and orators of the village of Sili, Savaii, May 2006.

the targeted resources.[23] The terms of reference for these studies are very clear regarding consultative responsibilities, which are intended to ensure that the full impacts of the project are shared with the land's owners. Yet this responsibility seems to have been deliberately ignored – their own feasibility assessment of the proposal revealed that the Indigenous communities would reject the project outright. It took a non-governmental organization, OLSSI, to carry out this important component of the terms of reference; and even this was only accomplished after a protracted struggle to obtain a copy of the draft consultants' report.[24] In addition to other indirect impacts of climate change, an extensive array of predicted impacts was directly attributable to this project. These included loss of potable water, river biodiversity resources, herbal medicine, and agricultural and forestry lands; the drying up of fourteen river intakes; and the building of relatively large dams and long penstock lines[25] (with their related threats to the Indigenous communities and neighbouring villages, as well as the future possibility of resettlement).

This project has now been successfully stopped by the Indigenous Peoples of these villages. OLSSI continues to use this case to argue that hydro-electric power is not an option for renewable energy in this country, and that the Samoan government must consider other, more appropriate options suited to Samoa's abundant potential in the development of solar, wind, wave, biomass, and photoelectric power sources. Further, all of the existing and proposed hydro-electric projects in Samoa are heavily dependent on the use of diesel fuel, which is not consistent with Samoa's public objection to projects that generate greenhouse gases. Further, because the nation-wide droughts of 2002 and 2003 led to rationing of electric power, it is reasonable to assume that future drought, caused by climate change, will force Samoa to depend on high-cost diesel power as the main energy alternative. Investment in other forms of renewable energy and promotion of renewable energy technology is therefore a crucial adaptive response.

[23] Asian Development Bank, "SAM Preparing the Savaii Renewable Energy Project," (TA 3985, October 2003).
[24] The report was drafted by a team of four consultants: one representing a German corporation, one a Japanese company, and two Samoans.
[25] A penstock is a pipeline that delivers water from a reservoir or dam to a turbine or a water wheel. Power Technology, "Glossary." http://www.power-technology.com/glossary/penstock.html (Accessed March 10, 2007).

Adaptation Methods and Projects – Existing and Planned

In synergy with action plans such as the *National Biodiversity Strategy and Action Plans* (NBSAPs); the *Coastal Infrastructure Management Plans*; the *Planning and Urban Management Act* (2004); the MNREM *Corporate Plan* (2003-2005); the Department of Lands Survey and Environment's *Institutional Reform Policy* (2000); the draft *Environmental Impact Assessment* (EIA) *Regulations* (1998); the *Codes of Environmental Practice*; and the implementation of conventions and agreements such as the UNFCCC, *Convention on Biological Diversity*, and *United Nations Convention to Combat Desertification*, the *Strategy for the Development of Samoa* is expected to realize the 'National Vision:' "For every Samoan to achieve a better quality of life." In support of this vision, Samoa's *National Adaptation Programme of Action* (NAPA) was based on a country-driven and complementary approach.[26] This vision for the future builds on improving the national welfare of the country in a manner characterized by macroeconomic stability, best practices for good governance, a thriving and competitive private sector, an efficient public sector, quality health and education services, vibrant socio-cultural values, and sustainable management of the environment. The Samoa NAPA vision is:

> To achieve a high level of community capacity for adaptation to adverse impacts of climate change, with a Mission of communicating urgent and immediate adaptation needs and the activities to address these needs to deal with the adverse impacts of climate change; and to develop the strategies for capacity building amongst stakeholders and village communities.

The main objectives of Samoa's NAPA are: first, to develop and immediately implement urgent project-based activities to adapt to climate change and climate variability; second, to protect the lives and livelihoods of the people, infrastructure, and environment; third, to incorporate adaptation measures into national and sectoral policies and development goals; and finally, to increase awareness of climate change impacts and adaptation activities within communities, civil society, and government.[27]

The following chart is based on the affected sectors and is broken down as: (i) existing adaptation needs and activities; and (ii) potential

[26] Ministry of Natural Resources, Environment, and Meteorology, "Samoa's Environment: Opportunities and Constraints for Development" (May 2006).
[27] NAPA Task Team of the Ministry of Natural Resources, Environment and Meteorology, "National Adaptation Programme of Action (NAPA) of Samoa" (2005).

adaptation needs and activities of key sectors that affect the Indigenous village communities.

Sector	Existing (i)		Potential (ii)	
	Needs	**Activities**	**Needs**	**Activities**
Agriculture & food security	• research and development of new plant varieties	• new animal species suited to local climate • nurseries for cultivars and planting • material partnership with external expertise	• marketing and trading • alternative crop research	• alternative crop research • traditional planting
Forestry	• establish forest fire unit • drought warning and advisory media unit • regenerate damaged areas	• create forest risk meter • information gathering and research • logging quotas	• fire prevention • reforestation • develop early warning system • sustainable forest management	• designate conservation areas
Biodiversity	• national biosafety policy • watershed management strategy • biodiversity management systems • designation of MPAs	• NBSAP activities • national invasive species activities • national biosafety framework • CIMP implementation	• additional marine and terrestrial conservation areas • legislation to ban hunting • biodiversity bill • bio-prospecting policies	• biosafety policy • enforce laws on use of illegal and destructive practices
Coastal zones	• CIMP strategy • CIMPs • integrated coastal infrastructural protection measures	• implement CIMP and strategy	• secure resources for CIMPs	• implement CIMPs activities
Urban planning and development	• secure resources to implement the PUMA • create EIA	• implement PUMA activities that respect adaptation • implement EIA requirements	• establish disaster planning zones, and strategic management plans	• implement activities required in disaster planning zones and plans

Sector	Existing (i)		Potential (ii)	
	Needs	**Activities**	**Needs**	**Activities**
Tourism	• plans for the awareness and training of operators on cyclones, floods, etc.	• implement the plans for awareness raising	• develop the tourism environment policy (TEP)	• train operators on TEP
Fisheries	• develop a community-based marine resources management programme • research and monitoring programme	• designation of MPAs • restocking of depleted areas	• ongoing monitoring and management	• establishment of additional MPAs
Water	• demand management • extend coverage of boreholes • enforcement of public notices on contamination • develop water purification programmes	• leak detection • look for new borehole sources • active projects on environment • encourage natural water springs protection	• watershed management plans • emergency plans	• water purification • reduce pumping hours • relocate water infrastructure
Village community	• land reclamation • coast revegetation • coast protection • enforce laws on sustainable management • re-vegetation along springs • women and youth to be involved in maintenance of water sources • villages involved in reforestation • establish reserves and conservation areas	• relocate families • ban sand mining • enforce by-laws in communities • protect pools from storm surges • water tanks to store rain water • education and awareness activities • practice reactive responses • use remittances to rebuild homes and properties	• disaster planning framework • assist relocation of communities inland • establish nurseries for reforestation • restore coastal springs • manage sand mining in coastal areas • capacity building for village social groups	• infrastructural protection on coast • support water tanks programme • community health programme • training and workshops in agro-forestry • mangroves and marine management • improve drainage • establish MPAs • village inspections • community awareness on climate change

Sector	Existing (i)		Potential (ii)	
	Needs	**Activities**	**Needs**	**Activities**
Health	• promote safe sanitation • promote healthy lifestyles	• water monitoring programme • increase public awareness about boiling water and maintaining a clean environment free from mosquitoes • immunization	• climate adaptation • health programme • awareness raising and training • early warning system and emergency measures	• climate-health cooperation programme
Trade & industry	• use of technical advice for LDCs such as Samoa • macro-economic reform	• promote products from Samoa • FAO programme to support food security	• sign PICTA • coping strategy for climate change in this area	• investment in annual crops and garden vegetables • contingent plans
Works, transport and infrastructure	• road asset management systems • upgrade infrastructures • code of environmental practices (COEPS)	• CIMPS implementation • building code and manual	• relocation of roads further inland • compliance with COEPS • training for private sector on COEPs	• construction of sea walls with appropriate standards and specifications
Energy	• establish an energy development plan • identify barriers for renewable energy technologies • secure RET projects	• implement energy plan and RET projects	• (PIREP) • (PREGA) • renewable energy policies • national energy policies	• complete development of these potentially useful energy policies and energy framework

A Comparison of Initiatives: Indigenous Mangrove Conservation and Government Seawalls

The mangrove conservation project in the Matafa'a village on Upolu Island, in which OLSSI was involved, was an adaptation initiative for which the outcome was much broader than others, and of which climate change adaptation was the only focus.[28] The Indigenous community of Matafa'a believe that the existing, long stretch of very old mangroves along the coastline will better protect them from natural disasters, such as cyclones and tsunamis. This is also a cheaper undertaking than the costly government-initiated seawalls, funded through loans from external sources, which are currently increasing in popularity throughout Samoa. Mangrove conservation involves the whole community in the management process, and offers opportunities for women to participate in project extension through additional replanting activities – activities that are obviously lacking in seawall projects. This type of adaptation initiative has other positive effects as well, including the enhancement of biodiversity resources, in this case the herbal medicine components sourced from mangrove stands. OLSSI and the Matafa'a Indigenous community are working together to demonstrate that , in areas where mangrove forests are present or could be re-cultivated, conservation of these aras is a better adaptation project than government initiatives using Clean Development Mechanism resources, and stemming from Samoa's commitments under the *Kyoto Protocol* and UNFCCC.

Bridging the Gaps: Matching Initiatives to Vulnerabilities and Impacts

This section focuses on the livelihood of the communities who are the most vulnerable to the impacts of climate change and variability. In assessing the gaps between existing initiatives and the specific climate change vulnerabilities and impacts experienced in Samoa, a consensus approach was deemed the best methodology. Such a process, which allows the communities themselves to prioritize and pursue their adaptation needs, is widely commendable and accepted in the Samoan context of practical realism and collaborative adaptation. The consensus approach pursued involved major stakeholders and Indigenous community representatives, and gained maximum support from them through a series of earlier country-wide

[28] Based on cultural and traditional dialogue and discussions with the chiefs and orators of the village of Matafa'a, Upolu Island, March 2006.

consultation workshops on the NAPA process. The results of this process are both summarized in and confirmed by the discussion, below.

Securing Community Water Resources

A significant impact of climate change and climate variability on Indigenous Peoples of Samoa is unreliable water availability. Indigenous Peoples would be better equipped to respond to these impacts if improvements were made to water supply and accessibility systems. Indigenous communities should not continue to rely on unpredictable and untreated river sources, as there are not always alternative storage services provided (such as water tanks). Alternative sustainable methods need to be sought out in order to enable Samoa to sustain its water resources while maintaining (or improving) water quality and minimizing the spread of water-borne diseases.

Reforestation and Community Forestry

The impacts of coastal erosion from sea level rise and climate change/climate variability include destruction of the lowland coastal forest areas – areas where Indigenous Samoans (and indeed, almost three-quarters of the Samoan population) live. The protection and sustainability of both coastal and inland forests resources are of utmost importance to the livelihood of the Indigenous communities since these offer protection during extreme climate variations and, more importantly, prevent further coastal erosion and loss of land. With reforestation and community forestry efforts the territories and cultural values of many of the vulnerable communities would be maintained. This helps to sustain social welfare over a long period, in turn helping to normalize the impact on the environment. Forest fires associated with droughts, induced by climate change and exacerbated by human activity, are more common in Samoa in the dry season, particularly in the northwest part of Savaii. This hazard is identified as a major barrier to forest growth, as it slows down rejuvenation and reforestation processes. It is also thought to extirpate vital indigenous plants, particularly the Omalanthus nutans, that are used in traditional medicine. The current fire-fighting system has limited resources, especially in the number of fire trucks and stations, water supply, appropriate equipment, and manpower. One way of both preventing the occurrence of forest fires and mitigating their adverse impacts is to develop and implement Indigenous, community-based forest fire plans. Such plans must be developed by the identified vulnerable communities with

the assistance and guidance of the Fire Services, Ministry of Agriculture, Samoa Water Authority, and Ministry of Natural Resources – Environment and Meteorology. A coherent plan should provide services for prevention, mitigation, preparedness, response, and recovery (including standard operational procedures).

Climate and Health

The establishment of climate and health awareness, training, databasing, and research programmes amongst the wider Indigenous communities, using health and medical specialists, would enable Samoa to strengthen its early response rate to any outbreak of climate change-related diseases. The establishment of partnerships between meteorology and health specialists would, in turn, improve the wellbeing and livelihood of communities by setting up an early-warning surveillance system programme, enabling communities to adapt to potential outbreaks of diseases. Such a partnership would improve the awareness and capacity of health and medical specialists on global environmental issues, as well as on the use of climate forecast information, through a networked database of shared information (mainly shared between the two main partners, but accessible by all other stakeholders as well). Samoa could improve the quality of health care services by providing affordable and sustainable health technology that enables early response and treatment of both the Indigenous communities and the public at large. This health technology would prove especially useful in treating injuries and illnesses related to the impacts of climate change and climate variability.

Climate Early Warning Systems

Without appropriate systems in place, the impacts of climate change on vulnerable sectors and Indigenous communities are, to a large extent, unforeseen, and the frequency and intensity of climate-related hazards are unpredictable. Therefore, an effective early warning system must be put in place immediately to ensure that vulnerable sectors and communities have the information they require to respond to each hazard. Effective early warning systems would significantly assist Samoa in implementing appropriate and sustainable sectoral and Indigenous community activities to adapt to, and hence minimize adverse impacts of, climate change.

Agriculture and Food Security

Agriculture and food security are identified as highly vulnerable sectors for Samoa. By investing in stable year-round crops and vegetable farming programmes instigated at the community level, Samoa would be better able to adapt and afford crops in times of extreme climatic events. Furthermore, by developing alternative farming systems that improve productivity while protecting soil and water resources, Samoans would substantially increase their ability to survive prolonged periods of drought and famine. Thus, the further development of community plantation programmes and inspection management for staple and resistant crops would strengthen food security. Introducing such methods would build the local capacity of farmers in Indigenous communities and provide opportunities to share and amass knowledge of agricultural and climate change issues. The availability of alternative farming methods and systems in Indigenous villages would help support a management programme across all communities.

Zoning and Strategic Management Planning

The Apia urban area is where the greatest stresses on the environment are generated, and where their impact is most pronounced. The changing context in which Apia, and Samoa in general, is evolving places new pressures on all sectors engaged in urban management and regional development, as well as on the built and natural environments. The complexity and interrelationship of issues facing Samoa today lie far beyond simple planning frameworks – in future, cross-sectoral planners will need to recognize the complex potential and actual impacts of climate change. When the effects of land use practices are considered, the human impact on climate change may be greater than previously thought. If land use is a major factor in global warming, this raises difficulties for anyone attempting to deal with the issue, since while climate issues are often discussed at both national and international institutions, most land use questions are raised and resolved at the local level. Current land use practices are altering the climate in ways comparable to the "greenhouse effect" produced when carbon dioxide gas is released into the atmosphere. A major contributor here is the construction of concrete urban buildings which store heat during the day and release it at night (the well-known "urban-heat-island" effect). Retained heat from concrete buildings and streets increases night-time temperatures, yet result in a slight decrease in maximum temperatures. The implications for local land use planning must be considered, along with an understanding of climate

variability and change at the community level. It would be useful to examine specific locations (buildings and parking lots, for example) to observe whether they are being influenced by local land-use change. There is a need for clear delineation between land use activities and the use of performance standards in order to ensure that activities have minimal detrimental impacts on the urban and rural environments.

Implementation of Coastal Infrastructure Management Plans

The implementation of the CIMPs is consistent with Samoa's national *Coastal Infrastructure Management Strategy*. The central vision of the strategy is resilience: "Coastal Infrastructure and Communities Resilient to Natural Hazards." Indeed, "to be resilient is to be adaptive, responsive and quick to recover so that communities are environmentally, socially and economically sustainable."[29] There are 15 CIMPs for 15 Districts, and this project profile focuses on implementing CIMPs for districts that have been identified as "highly vulnerable" as measured by a high score on the Coastal Sensitivity Index. "Implementation" includes activities that undertake all appropriate actions identified in the CIMPs for highly vulnerable districts, including: inspecting current status of culverts and upgrading of culverts and drains where necessary; implementing education programmes; identifying road maintenance and investigating constructing new inland roads; establishing conservation programmes in highly vulnerable marine and terrestrial areas; identifying conservation areas in Indigenous communities (all of which are urgent issues that must be addressed immediately).

Biodiversity

The pockets of vulnerable marine and terrestrial areas and Indigenous communities must be protected in order to maintain existing biodiversity and safeguard the sustainability of natural resources and the environment. Actions to this end would help to ensure increased adaptation capacity of the communities, particularly with regard to livelihood resources. A collaborative effort between Indigenous communities and governmental implementing and coordinating agencies would improve sustainable biodiversity management vis-à-vis climate change and climate variability. Furthermore, conservation would then occur in priority conservation sites for priority species protection. There is a need for a continued commitment by

[29] Government of Samoa, "Coastal Infrastructure Management Strategy" (January 2001).

Indigenous communities, in conjunction with implementing agencies, in order to establish a biodiversity inventory assessment of the ecological status of both priority sites and key species for conservation, as well as the pressures affecting the sustainability of the site and its biodiversity. This would ensure that project impacts can be measured, and that further adaptation initiatives could be formulated to improve adaptation methods at the community level.

Sustainable Tourism

The *Samoa Tourism Development Plan 2002-2006* does not identify any strategy to cope with climate change issues, despite tourism being an integral part of Samoa's economy currently threatened by climate variability-related phenomena. The survival and success of the tourism industry depends on the integrity of other sectors, such as water, health, and electricity. The establishment of a national sustainable tourism plan would therefore benefit Samoa by:

- Initiating the establishment of regulatory compliance procedures that prevent and protect the industry from non-environmentally friendly business practices that can be exacerbated by extreme climatic events;

- Developing and promoting climate-adapting business strategies that will protect the industry from adverse impacts of climate change and climate variability;

- Establishing environmentally responsible practices to protect the natural environment, including protecting terrestrial and marine biodiversity;

- Developing awareness-raising programmes for staff on climate change issues and the application of best environmental procedures to protect the environment;

- Developing ecotourism protocols as a mandatory requirement for all tourism business ventures; and

- Increasing capacity-building for the industry in terms of sustainable development and "climate-proof" practices.

From the foregoing summary, it is clear that the review, debate, and consensus discussions relating to adaptation activities was a useful forum that enabled strengthening of Indigenous communities and government partnerships as well as public and private sector partnerships. The *faa Samoa* (the Samoan way), which is the formal methodology of discussions and consultations used in this decision-making process, was utilized to attain effective agreements on the adaptive capacity experiences of all stakeholders, and resulted in their collective identification and agreement on the proposed community-based needs and activities for which this case study has attempted to advocate.

Lessons Learned and Recommendations for Improved Practices and Implementation

Agriculture and Food: Samoa should develop alternative community farming systems. These would help provide other options for food for its Indigenous Peoples, while giving them other avenues and responsive options for preserving sustainable livelihoods when affected by the detrimental impacts of climate change.

Forestry: Samoa should develop community forest fire prevention plans and programmes, engage coastal communities in reforestation and rehabilitation programmes, and establish conservation areas in highly vulnerable communities.

Water: Samoa should develop water purification programmes, increase watershed management, and provide alternative water storage programmes and technology for communities.

Fisheries: Samoa should increase well-protected marine reserves via efforts such as those already undertaken in MPAs.

Health: Samoa should establish health and climate collaboration/synthesis programmes and develop early warning systems and emergency measures.

Urban Settlements: Samoa should proceed to develop and implement zoning, develop disaster planning, and implement urban planning as required under the PUMA.

Coastal Environment: Samoa should implement its Coastal Infrastructure Management Plans and Strategies.

Biodiversity: Samoa should increase marine and terrestrial conservation areas (MPAs, for example) and regulate and enforce monitoring systems for these areas.

Tourism: Samoa should implement sustainable tourism activities and develop an environmental tourism policy.

Communities: Samoa should increase coastal infrastructure protection (seawalls), assist in the relocation of communities inland, restore coastal springs in communities, and strengthen building codes to increase resilience to cyclones.

Trade and Industry: Samoa should increase investment in annual crops and home vegetable farming.

Works Transport and Infrastructure: Samoa should relocate roads further inland and construct seawalls based on existing plans and codes.

Priority Activities for Improved Practices and Implementation

In summary, the nine recommended project-based activities, as selected by the Samoa National Climate Change Committee and used as a basis of the NAPA report, are tabulated as follows:

No.	Project Profile Name	Activities
1	Securing Community Water Resources	• Develop water purification programmes for communities • Develop watershed management programmes for other communities • Implement alternative water storage programmes • Restore coastal springs in communities
2	Reforestation, Rehabilitation and Community Forestry Fire Prevention	• Develop reforestation and rehabilitation (sustainable forest management) programmes • Implement a forest fire prevention programme
3	Climate Health Cooperation Programme	• Establish a climate-health cooperation programme
4	Climate Early Warning System	• Develop a climate early warning system and emergency measures

No.	Project Profile Name	Activities
5	Agriculture and Food Security Sustainability	• Invest in annual crops and home vegetable farming • Develop and support alternative farming systems
6	Zoning and Strategic Management Planning	• Implement activities in zoning, disaster planning, and urban planning • Strengthen building codes so that structures are more resistant to cyclones
7	Implement Coastal Infrastructure Management Plans for Highly Vulnerable Districts	• Implement coastal zone management • Design coastal infrastructure protections (seawall) • Construct seawalls (subject to existing plans and codes) • Provide assistance for relocation of roads further inland • Provide assistance for relocation of communities inland
8	Establishing Conservation Programmes in Highly Vulnerable Marine and Terrestrial Areas of Communities	• Establish conservation areas and marine reserves • Designate marine and terrestrial conservation areas (eg.MPAs)
9	Sustainable Tourism Adaptation	• Develop an ecotourism policy

The DRC Case Study

The Impacts of the "Carbon Sinks of Ibi-Batéké" Project on the Indigenous Pygmies of the Democratic Republic of the Congo

Sinafasi Makelo Adrien

List of Acronyms

CBD:	Convention on Biodiversity
CDM:	Clean Development Mechanism
CSI-B:	Carbon Sinks of Ibi-Batéké
DNA:	Designated National Authority
DRC:	Democratic Republic of the Congo
GHG:	Greenhouse Gases
Gi-Agro:	Grouping for Agronomic Intervention
O2M:	Mayi-Mpili Operation
ONGD:	Organisation non-gouvernementales de développement (non-governmental development organization)
UN:	United Nations
UNFCCC:	United Nations Framework Convention on Climate Change
USD:	United States Dollar

About the Author

Sinafasi Makelo Adrien, a member of Kipiri pygmy clan, was born December 9, 1958 in Ombole, a small village in the middle of a lush equatorial jungle. The village is about 30 kilometres from Manguredjipa and is in the Bapere administrative community of North Kivu province, in the eastern part of the Democratic Republic of the Congo (DRC).

For over a decade, Sinafasi Makelo Adrien has actively advocated for the recognition of Pygmy peoples' human rights in Central Africa in general, and the Democratic Republic of the Congo in particular. He has received several certificates in lobbying and advocacy techniques. Since 2001, he has regularly participated in annual United Nations (UN) meetings dealing with questions of Indigenous human rights, most notably the UN Working Group on Indigenous People in Geneva, and the UN Permanent Forum on Indigenous Issues in New York. As a member of the International Indigenous Forum on Biodiversity since 2003, Sinafasi Makelo has participated in several international forums centring on the theme of biodiversity, including:

- Global Congress on Durban Parks (South Africa, September 2003)
- The 9th Session of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA-9) of the *Convention on Biological Diversity* (CDB) in Montreal (Canada, November 2003)
- The 7th Conference of the Parties to the CBD (COP-7) in Kuala Lumpur (Malaysia, February 2004)
- The 4th Session of the UN Forum on Forests (UNFF-4) in Geneva (Switzerland, July 2004)
- The UICN Global Congress for Nature in Bangkok (Thailand, November 2004)
- The 5th session of the UNFF (UNFF-5) in New York (United States, May 2005)
- The 8th Conference of the Parties to the CBD, in Curitiba (Brazil, April 2006)

Sinafasi Makelo is the co-author of a case study commissioned by the International Alliance of Indigenous and Tribal Peoples of the Tropical Forests (IAITPTF) on the implementation of international commitments regarding traditional forest-related knowledge (TFRK) by the DRC. This study is included in the publication *Our Knowledge for Our Survival: Regional Case Studies on Traditional Forest Related Knowledge and the Implementation of Related International Commitments,* published by the IAITPTF.

Contents

Executive Summary

Our planet is becoming warmer and warmer, and is facing increasing climate change due to the accumulation of greenhouse gases (GHG) in the atmosphere. As a consequence of these climatic disturbances, natural disasters such as tsunamis, hurricanes, floods, heat waves, and droughts are increasing in frequency and force, becoming more and more dangerous. Numerous Indigenous Peoples living in forests, on islands, and in coastal or polar regions are particularly affected by climate change due to the fragile nature of the ecosystems in which they live. Efforts at the international level to reduce the effects of climate change include, most notably, the adoption of the *United Nations Framework Convention on Climate Change* (UNFCCC), in 1992 and its *Kyoto Protocol* in 1997. The latter came into effect on February 16, 2005.

This case study examines one of the flexible mechanisms of the *Kyoto Protocol*: the Clean Development Mechanism (CDM). The CDM is intended to allow Annex I Parties ("developed" countries and those with transitional economies) to lower the costs of reducing GHG emissions while supporting lasting development projects in economically poorer countries (specifically all those not included in Annex I).[1] Since these projects are envisioned as being both environmentally responsible and development-oriented, they are dubbed "Clean Development Mechanism" initiatives. Examples of opportunities for CDM activities include reforestation and bio-energy projects. While these have the requisite positive intentions, it has been noted that no project foundation or pilot methodology of either forestation or reforestation has yet been approved by the CDM's Executive Council.[2]

Unfortunately, it is notable that the aforementioned international processes and approaches have left out one thing: none of them have officially recognized Indigenous Peoples as stakeholders, despite the fact that Indigenous Peoples have specifically asked for such recognition, through their official representatives, on numerous occasions in the relevant forums. We have asked, but without success.

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[1] The Parties to Annex 1 are the developed countries (in alphabetical order) : Australia, Austria, Belgium, Belarus, Bulgaria, Canada, Croatia, the Czech Republic, Denmark, Estonia, the European Economic Community, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Liechtenstein, Lithuania, Luxemburg, Monaco, the Netherlands, New-Zealand, Norway, Poland, Portugal, Romania, the Russian Federation, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, the United Kingdom of Great Britain and Northern Ireland, the United States of America.

[2] "Dendroenergy and the Clean Development Mechanism," FAO Brochure, Department of Forests, J7639/F (B), page 2, paragraph 2
For more information please visit http://fao.org/forestry/energy

The International Alliance of Indigenous and Tribal Peoples of the Tropical Forests has commissioned this series of case studies on climate change and Indigenous Peoples with the aim of, among other things, documenting and raising awareness of the effects of both climate change and proposed "solutions" on Indigenous Peoples. These studies also examine the reactions of Indigenous Peoples, and call attention to the various opportunities to officially recognize them as stakeholders in the present international processes related to climate change.

In the Democratic Republic of the Congo (DRC), CDM projects are currently in the preparatory stage. The project which is the subject of this case study is the Carbon Sinks of Ibi-Batéké (CSI-B), conceived of by Novacel, a Congolese organization created in 1984. This project includes forestation of 3,000 to 8,000 hectares of the Batéké plateau, with plans to increase the scope to millions of hectares in the future. The Biocarbon Fund of the World Bank will finance the project, up to USD 10 million, beginning in 2007. Emission reduction credits generated by the project will also be available for purchase – by the polluting Annex I countries (and companies in these countries) including Canada and several nations of the European Union (particularly Italy and Belgium) who have already displayed interest.[3] Even the United States is interested in this market, even though it has not yet ratified the *Kyoto Protocol* that it signed under President Clinton's administration.

According to our research, up to this point in the project there has been no involvement of the Pygmy Indigenous Peoples, nor any apparent will to involve them. Indigenous Peoples' rights, experiences, and cultural and spiritual traditions are being ignored. Nothing to ensure the Pygmy's preliminary consent, which was mandated within the framework of the project, has been done since consultation began. Nothing guarantees that the project will be capable of truly mitigating the effects of climate change and bringing sustainable development to this environment.

This report explores the CSI-B project because it is, for the moment, the most important project in the works under the CDM framework in the DRC. The manner in which it is being administered will likely set a precedent and inspire other, similar CDM initiatives in the future. A visit to the site, discussion with people in Ibi Mbankana and surrounding areas, reviewing of articles about the project, and researching of pertinent websites have provided a clear idea of the project. The overall conclusion reached in this case study is a wholehearted recommendation for the participation of

[3] Compare with the following publication:
"Whatever the weather**:** Media attitudes to reporting climate change." (London: Panos, February 3, 2006). http://www.panos.org.uk/resources/reportdetails.asp?id=1078 (Accessed January 11, 2007).

Indigenous People in the implementation of CDM and related project activities.

Introduction

General Context

The effects of the Industrial Revolution have been more a part of humanity's problems than a solution to them. The European Commission's *Environment Fact Sheet* of August 2005 warns us that, "experts blame the warming trend on greenhouse gases emitted by human activities since the Industrial Revolution."[4] Many experts believe that the technologies that arose then, and have developed since that time, are the principal cause of not only global warming, the destruction of the ozone layer, chemical pollution, acid rain, and climate change; but also of all the catastrophic effects of these phenomena on the Earth, humanity, and biodiversity. The glaciers are melting, provoking floods and a rise in ocean and sea levels that menace coastal regions. Forests are disappearing, leading to the extinction of many species of fauna and flora, to the detriment of future generations. Arid and semi-arid regions are undergoing desertification, reducing the extent of cultivable soils.

Many Indigenous communities living in the fragile ecosystems described above are equally victims of the effects of climate change and of the solutions proposed to ameliorate them. Indigenous groups are often exploited by the unsustainable practices of dominant groups who disregard their rights, traditional knowledge, and Indigenous modes of natural resource management (even though the methods employed are quite ecologically efficient and have been proven so over millennia).

It is obvious that climate change and its consequences constitute a very real and urgent planetary problem. In order to tackle it, governments have joined to together to adopt the *United Nations Framework Convention on Climate Change* (UNFCCC) and the *Kyoto Protocol*, along with its flexible mechanisms such as the Clean Development Mechanism (CDM). Under the CDM, developed and developing countries work together to reduce the accumulation of greenhouse gases (GHG). Industrialized countries can invest, at low prices, in activities to reduce or absorb emissions in developing countries, and receive credits for these reductions. In this manner they are theoretically contributing to sustainable development. The Democratic Republic of the Congo (DRC) is a Party to the UNFCCC, which it signed on

[4] European Commission, "Environment fact sheet: Climate change" (August 2005).

June 11, 1992 and ratified on December 9, 1995. Since March 23, 2005, the DRC has also adhered – without reservation – to the ratification of the *Kyoto Protocol*. It can therefore implement the CDM as a direct tool that at once supports global reductions in GHG emissions and promotes sustainable development.

One type of activity that has become popular under the *Kyoto Protocol* and the CDM involves the cultivation of "carbon sinks," which are most often forested areas that absorb carbon through photosynthesis (the biochemical pathway or process by which plants sustain themselves), offsetting the production of carbon-based greenhouse gases in other areas of the world.[5] Carbon sinks are thus the opposite of carbon sources – unfortunately, no consensus exists on the efficiency of afforestation in the management of carbon emissions. Concerning the controversial value of forestry projects to compensate for carbon emissions, André Gabus wrote,

> The so-called Kyoto forests have differing importance depending on the participating countries. In the most forest-covered countries of the European Union (Germany, Austria, Finland, France, Italy and Sweden) the carbon trapped by the forests in conformity with article 3.3 is of little importance, and the trees are sometimes even sources of emissions. The change in allocation of land by afforestation and reforestation can also seem negligible for the achievement of the goals of carbon dioxide emissions reduction in those countries taken as a whole and accounting for 85% of carbon.[6]

For his part, Wally Menne writes, in his *Clean Development Mechanism or Climate Destruction Madness?*

> Plantation enterprises that are looking to spin "carbon sinks" as a miracle cure to gullible polluters also found themselves embarrassed at the moment of explaining how an industrial plantation of trees, harmful to society and to the environment, was going to absorb greenhouse gases, while there is a high risk that it will do the opposite.[7]

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[5] European Environmental Agency, "Glossary." http://glossary.eea.europa.eu/EEAGlossary/C/carbon_sink (Accessed March 10, 2007).

[6] Andre Gabus, "Des decotes pour les puits de carbone: Une base pour alléger la contribution des forêts dans le calcul des réductions d'émissions et sortir le Protocole de Kyoto de l'enlisement?" (Accessed March 18, 2007).

[7] Wally Menne, "Clean Development Mechanism or Climate Destruction Madness?" Forest Cover: A Global Forest Coalition Newsletter on International Forest Policy (Issue Nº 18: March 2006).

The Context of the Democratic Republic of the Congo

The DRC constitutes a paradox. Because of its rich natural resources, it is a country with tremendous potential for wealth; at the same time, it is one of the poorest countries on the planet. It is an understatement to say that the DRC is a "developing" country.

Situated in central Africa along the equator, the DRC occupies an area measuring 2,345,000 square kilometres, making it the third largest country in Africa (behind Algeria and the Sudan). It contains 135,207,000 hectares (1,352,070 square kilometres) of natural forests, representing six percent of the world's tropical forests and more than forty-seven percent of Africa's tropical forest areas. These forests, which cover a large part of the Congo's basin, are the second most massive forests after those of the Amazon. The country is endowed with diverse flora, comprising close to 377 families, 2,196 genuses, and at least 11,000 identified plant species, of which 3,200 are endemic.[8] In the context of CDM activities (including trapping of carbon by afforestation and reforestation, substitution of carbon by the use of sustainably-produced fuel-wood instead of fossil fuels, etc.), the DRC constitutes auspicious and promising terrain in the global effort to reduce the accumulation of planetary GHG.

The DRC's population, estimated at around 60,000,000, is divided into four groups: the Pygmy, the Bantus, the Nilotiques, and the Sudanese. Together they form some 450 tribes, speaking almost as many dialects. The Pygmy are, in theory, recognized as being the first inhabitants of the country, making them the nation's genuine Indigenous Peoples; however, one of the major deficiencies of the DRC's Constitution is that it makes no mention of Indigenous Peoples or their specific rights. Fortunately, the DRC is a Party to the *Convention on Biological Diversity*, which because it makes a distinction between "indigenous communities" and "local communities," does grant some rights to Indigenous Peoples. The DRC is also a member of the United Nations, which has recently moved toward adopting its *Declaration on the Rights of Indigenous Peoples*. Thus, apart from certain texts merely mentioning minority rights, the DRC's Constitution is not in line with international documents which the country has signed and ratified.

Given the lack of a census, the exact number of Pygmy in the DRC is hard to know. In one report from Désiré Nkoy Elela, the numbers range from

[8] See the information sheet entitled "DR Congo Deforestation Rates and Related Forestry Figures" on the Mongabay website at http://rainforests.mongabay.com/deforestation/2000/DR_Congo.htm (Accessed January 21, 2007).

100,000 to 600,000 persons,[9] which would represent a maximum proportion of one percent of the country's population.[10] Pygmies speak different languages and have different designations, depending on their region and dialect.[11] They inhabit forest zones throughout all of the provinces of the country, with the exception of the Lower Congo. Certain groups still generally survive from hunting, gathering, and fishing, while others are in transition between the lifestyles of hunter-gatherers and those of agriculturalists.

The Pygmy of the Batéké Plateau

The group of Pygmy affected by the CSI-B project in the Batéké Plateau are the Batswa, with an estimated population of 21,000 spread throughout the three countries that share the Batéké Plateau: DRC/Congo Kinshasa, Congo Brazzaville, and Gabon. They have been, for centuries, subject to domination by the Batéké people themselves, as well as other Bantus (collectively known by the Batswa as "les Grands Noirs" or "Big Blacks"). G. Salomone and F. Taglioni speak of the Batswa's reliance on these "Grands Noirs" as a "dependence that was moreover narrower on the Batéké Plateau where the Batswa Pygmy where forced to cultivate manioc and tobacco side by side with women, while the men went to war or participated in the slave trade."[12] Colonization by the French later cemented this relationship of inequality and reliance, creating a "lineage-based clientelism […] in order to respond to local and colonial demands for meat, ivory and antelope skins."[13]

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[9] Désiré Nkoy Elela, "Situation of the 'Indigenous' Pygmies (Batwa) in the Democratic Republic of the Congo: The Issue of Human Rights" (Kinshasa: UNESCO, November 2005).

[10] Jerome Lewis, in his report for Minority Rights Group, puts forward an estimated proportion between 0.02% and 0.7% of the population from various countries in the African Great Lakes where the Batwa Pygmies live.
Jerome Lewis, "The Batwa of the Great Lakes Region" (Minority Rights Group International, 2001).
http://www.minorityrights.org/International/int_stat_detail.asp?ID=12 (Accessed January 11, 2007).

[11] They are called *Bambuti, Bambote, Katwa, Batswa, Batoa, Batua, Baowa, Barhwa, Balumbe Bilangi, Bafoto, Samalia, Bone, Bayeki, Bayaka, Bamone, Bakengele, Baka, Baefe, Bambeleketi, Bashimbi(ou Bashimbe), Bakalanga, Babindji,Bayanda, Babuluku, Banwa, Bagezi (or Bageshi)* etc.

[12] G. Salomone and F. Taglioni, "The Science from Here and Abroad" (August 31st, 2001). http://www.sciencepresse.qc.ca/capsules.html (Accessed January 11, 2007).

[13] G. Salomone and F. Taglioni, "The Science from Here and Abroad" (August 31st, 2001). http://www.sciencepresse.qc.ca/capsules.html (Accessed January 11, 2007).

Even now, the Batswa Pygmy in the Batéké Plateau are recovering from this form of dependence. Today they practice agriculture in addition to hunting and gathering – making it worth noting that the "subjugated" Pygmy have no recognized claim to land, even though the Pygmy were its first inhabitants.[14] A paradox emerges when we lament that today the Pygmy, masters of the forest, are not owners of the land. They themselves are amazed that the "new arrivals" so completely dispossessed them of their land. "This constitutes, quite rightly, a violation of their rights as first inhabitants. One which, they will affirm, impoverishes them."[15]

CDM Projects in the Democratic Republic of the Congo

A report entitled "Whatever the weather: Media attitudes to reporting climate change," based on research on media professionals in Honduras, Jamaica, Sri Lanka and Zambia, revealed that journalists had very poor, very limited understanding of the themes of climate change, the *Kyoto Protocol*, and its flexible mechanisms such as the CDM.[16] The report also showed that journalists did not report on these topics often enough. If supposedly enlightened people such as researchers and journalists can have difficulty grasping the complexity of the issue of climate change, then it clearly cannot be any easier for laymen, especially in societies with low literacy rates.

Let us recall that the *Kyoto Protocol* and its CDM programme only came into effect on February 16, 2005, with the first period of engagement scheduled between 2008 and 2012. It is thus a relatively new process that is little known; the DRC itself signed on to the *Kyoto Protocol* as recently as March of 2005. The people of the DRC are therefore only beginning to hear about CDM projects, and there are few initiatives of this type currently underway in the nation. Many people — even intellectuals — are not yet sufficiently informed of the Protocol, CDM projects, and other associated programmes, and and as a result most people do not understand much about it, and very seldom discuss it.

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[14] Désiré Nkoy Elela, "Situation of the 'Indigenous' Pygmies (Batwa) in the Democratic Republic of the Congo: The Issue of Human Rights" (Kinshasa: UNESCO, November 2005).

[15] Désiré Nkoy Elela, "Situation of the 'Indigenous' Pygmies (Batwa) in the Democratic Republic of the Congo: The Issue of Human Rights" (Kinshasa: UNESCO, November 2005).

[16] "Whatever the weather**:** Media attitudes to reporting climate change." (London: Panos, February 3, 2006). http://www.panos.org.uk/resources/reportdetails.asp?id=1078 (Accessed January 11, 2007).

Box 1: The Batéké Plateau

As was related recently by Bernard Martin,

> [T]he vocation of the Batéké Plateau is first and foremost forest-related. Too poor and too dry, the natural environment will never be a big agricultural region… On the other hand, with pioneering fuels like pines, eucalyptus and acacias (whose success is exceptional), it could become a region with large production of forestry at the doors of Kinshasa. Such a development, on the condition of harmonizing it with agriculture and the raising of livestock, is without a doubt a considerable opportunity for the local populations.[1]

The herbaceous and sometimes shrubby savannas of the Batéké Plateau are interspersed with forest galleries in the valleys. Protected areas have been constituted, notably in the DRC in the hunting ground of Bombo-Lumene (3,500 km^2), in the Congo in the Léfini Reserve (6,300 km^2) and the Bambana-Lekana-Zanaga Project (over 55,300 km^2), as well as the Batéké Plateau National Park (2,050 km^2) in Gabon. These areas would ensure a satisfactory level of protection of the region's biodiversity.

The creation of forestry plantations on a large scale seems possible. The potential biomass harvest in this region thus deserves greater attention (and no doubt complementary studies) to at once promote a local sustainable development and contribute to the struggle against global warming by increasing the global capacity for CO_2 absorption. The wood energy and material wood pilot project undertaken by Novacel in Ibi, DRC, opens up some promising possibilities in this sense.

1. Bernard Martin, "The Batéké Plateau: A new zone of production of large-scale woody biomass." February 11, 2006. http://homepage.sunrise.ch/mysunrise/agabus/eff'endi/carbon/bateke.html (Accessed January 11, 2007).

It goes without saying that the Pygmy, who are for the most part illiterate, are no exception. They understand very little of the technical language associated with the CDM – this is true even for those who live in and around CDM project sites. While the rather recent arrival of these projects is one reason for this lack of awareness, it is also the logical consequence of an absence of will, on the part of those responsible for CDM initiatives, to inform and sensitize the Pygmy. There is also an unwillingness to involve Pygmies in the articulation, execution, and evaluation of activities related to the CDM.

The Ibi Carbon Sinks Project

The Carbon Sinks of Ibi-Batéké (CSI-B), conceived by Novacel, is a forestation project with a current scope of 3,000 to 8,000 hectares of the Batéké plateau. Novacel has most notably established partnerships with Umicore, Forest Resources Management (a consulting firm specialized in the sustainable management of forest and natural resources) and Forest Strategy (a consulting firm specialized in forest and wood sector projects) for the preparation of this project. CSI-B will likely begin in 2007. The project could extend beyond its current 8,000 hectares to reach millions of hectares in the Batéké Plateau starting from Gabon, stretching to Angola, and ultimately passing through the two Congos. The World Bank predicts that the project will sequester approximately 0.82 metric tons of CO_2 by 2012, and a total of about 2.81 metric tons of CO_2 by 2017[17]

The Batswa, who constitute the poorest, most marginalized, and most disadvantaged section of the population of the region, are not involved in the planning, preparation or consultation for the CBI-B. There are several significant reasons, though, why their involvement should be prioritized:

- Based on its status as a CDM-approved project whose avowed objectives (sustainable development, the fight against poverty, and the promotion of education and health) resonate with the Millennium Development Goals, the CSI-B should improve the visibility of the marginalized, vulnerable, and economically disadvantaged Pygmy.

[17] The World Bank Carbon Finance Unit. http://carbonfinance.org/Router.cfm?Page=Projport&ProjID=9646 (Accessed January 11, 2007).

- With its forestation and reforestation activities, the CSI-B should pay particular attention to the Batswa guardians of the forest since there is, and will continue to be, a significant role for them to play.

- For any such project financed by the World Bank, it is appropriate to apply *Operational Directive 4.20* or *Operational Policy 4.10* relative to Indigenous Peoples, as well as *Operational Policy 4.36* on Forests and *Operational Policy 4.01* on environmental and social evaluation. Otherwise, the World Bank would not be honouring its own policies.

History of the Project

In 1985, Paul Mushiete, a native of the Batéké Plateau, founded Novacel to add value to the Ibi domain. With his sons, Olivier and Thierry, Paul Mushiete put in place a strategy combining social, economic, and environmental elements in an ambitious programme of integrated rural development centred on a long-term investment policy. The programme began in Ibi in 1998, with the support of Profinaf Invest ("Financial Promotion in Africa"), an investment club created in September 1996 in Brussels to respond to Novacel's project financing needs in the Batéké Plateau.[18]

Novacel ended up working in conjunction with GI-AGRO ("Grouping for Agronomic Intervention"), an entity created in 1992 in the Eastern DRC province of South Kivu by a group of five agronomic engineers, including Olivier Mushiete. Their goals were to:

(i) Promote integrated utilization (agriculture, forestry, cattle raising, and fish breeding);
(ii) Reinforce the organization of social groups; and
(iii) Put in place tools and systems of production.

Since these goals harmonized well with Novacel's project of sustainable development for the Batéké Plateau, collaboration was established between GI-AGRO and Novacel at the Ibi Station in 2000. This collaboration has operated through many projects, including the O2M "Mayi Mpili" Operation, described below.

[18] The Administrative Council of Profina Invest consists of 2 founders, Olivier and Thierry Mushiete; one president, Luc Vanderwinkel; and 4 members, Anneke Claes, Agnès Gilbert, Marcel Colart and Victor Heckmus.

The O2M "Mayi Mpili" Operation

The Mayi Mpili Operation ("O2M") is a coalition of five *organisations non-gouvernementales de développement* (ONGD) around the integrated rural development project of the Batéké Plateau, namely EuropAfrique, Gi-Agro, Ferme Bombi, and Capl et Cpdr.

- Other partners: Région Wallone and the French Community of Belgium
- Site of intervention: Mbankana village (150km from Kinshasa)
- Coordination: Olivier Mushiete (Ibi Forestry Station)
- Strategy: Mayi-Mpili aligns itself with the DRC's *Poverty Reduction Strategy Paper*
- Goals: to open up rural zones, ensure food security, reduce poverty, improve the quality of life of rural families, protect and valorise natural resources, organize production cooperatives, and organize transport flows
- Projected ecological impacts: Mayi-Mpili, according to Mushiete, ensures:

  (i) Reasonable management of natural resources, water, energy, agricultural, and forest soils, leading to the preservation of sections of dense natural forest, regeneration of local flora and fauna, and preservation of biodiversity;
  (ii) Reduction of greenhouse gas emissions; and
  (iii) Control of forest fires and controlled production of fuel-wood.

In his article *Debates Around the Integrated Rural Development Project of the Batéké Plateau*, Olivier Mushiete uses the phrase: "From the O2M to the Ibi carbon sinks."[19] He states that, in relation to the O2M projects, the partnership structures aim for "the organization of the production cooperatives, value added in the zones of production, as well as the organization of transport flows […]." This article clearly shows that the O2M project (Mayi-Mpili Operation) is part of the history of the Ibi Carbon Sinks project, with the two sharing a strong connection.

[19] Olivier Mushiete, "Debates around the Integrated Rural Development Project of the Batéké Plateau" *Le Potentiel*, (April 6, 2006).

Project Status and Planned Actions

Within the framework of the *Kyoto Protocol*, in order for a CDM project to be accepted, its proponents must compose and deliver a *Descriptive Document* to the Designated National Authority's specialized government service.[20] The document must contain, among other things, a description of the project, its objectives and expected impacts on the environment and the riverside populations, a copy of a case study on social and environmental impacts, details of implementation costs, and a listing of potential backers. After the examination of the document, if the DNA approves of the project, it will write a *Letter of Non-Objection* to the government. The Carbon Sinks of Ibi-BaTéké project followed this procedure, and has now received a Letter of Non-Objection. In other words, it has already received the endorsement of the Congolese government for its execution as a CDM project.

The Carbon Sinks of Ibi-Batéké project intends to accomplish both the conversion of 8,000 hectares of degraded savannah into an abundant and sustainable production area for construction wood and fuel-wood, and the reforestation of 7,360 hectares for different uses and production. Myriad other benefits are predicted by the World Bank, including the creation of a refuge for wild herbivores, reducing the pressure on other forests in the Kinshasa area, and the creation of hundreds of temporary positions (the equivalent of 180 full-time jobs).[21]

It is important to understand that this project is included in a pre-existing integrated rural development programme, the "Ibi Station." Operational since 1998, the Ibi Station aims to integrate agriculture, cattle raising, and production of primary forests with agro-industrial production (such as corn flour or fuel-wood) while also building strong participation by local communities. The World Bank's Carbon Finance Unite writes that:

> The benefits from the plantation project will come in addition to the larger benefits from the whole IBI initiative in which it is included. The inclusion in the IBI framework will particularly help reduce leakage and non-permanence risks. In fact, the diversified IBI programme benefits include training courses and employment for other activities like agroforestry and sustainable agriculture, creation of local health centres and schools, and

[20] The President of the Designated National Authority for the DRC is Anselme Enerunga, Minister of the Environment, Water, and Forests. His email is rdc_minenv@yahoo.fr. The national focal point for the DRC is Casimir Babutetu.

[21] The World Bank Carbon Finance Unit. http://carbonfinance.org/Router.cfm?Page=Projport&ProjID=9646 (Accessed January 11, 2007).

> installation of local sustainable electricity and water networks. The local environment and 150,000 inhabitants of the 250 villages around the project area already benefit directly and will continue to benefit from the actions of this program.[22]

Involvement of the Pygmy

On July 10, 2006, a survey team left Kinshasa for the CSI-B project site in Mbankana, with a goal of assessing Pygmy involvement in project implementation, actual and potential impacts of the project on the Pygmies, and how the latter feel about the CSI-B. It was also hoped that the team would gain an understanding of the existing relationships between the different communities involved, as well as between the communities and the proponents of CSI-B.

In spite of publicity surrounding the project, not everything is as rosy as we might believe. There are several shocking aspects, principal among them the discrimination against, and notable exclusion of, the Indigenous Batswa. We do not see their involvement in the preparation of the Ibi Carbon Sink project on the ground, no more than we see them benefitting from the realization of the project activities on the Batéké Plateau. For example, the Mayi-Mpili initiative has the organization of production cooperatives as one of its principal objectives; however, the Pygmy are not part of these cooperatives. As one 42-year old Batswa man, who lives in the village of Bankana on the Batéké Plateau, noted during an interview:

> We have never been enrolled in local development groups. You ask me why? They are groups for the Batéké! And we know quite well how to do what they do. Moreover the [Ba]Téké always ask us to help them do diverse jobs that they don't know how to do. But we do not get counted in the groups.[23]

Almost all the people interviewed (Pygmy and non-Pygmy alike) confirmed this view. The involved parties do not speak of the Pygmy as being members of the production cooperatives, nor as workers on the site. Instead, they are seen merely as people who "help their elders with chores." This includes their Batéké masters, for whom they work either without

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[22] The World Bank Carbon Finance Unit. http://carbonfinance.org/Router.cfm?Page=Projport&ProjID=9646 (Accessed January 11, 2007).

[23] The majority of people interviewed preferred to remain anonymous and not have their names disclosed in our report.

remuneration or for a meagre payment of Indian hemp (cannabis), alcohol, old kitchen utensils, or a few used clothes. A Batéké elder of around sixty years of age summarized the situation in these words:

> You know that here, since the time of our ancestors, the Batéké and the Batswa have always lived together as members of the same family, like big brothers and little brothers. Each Batéké family has always had a group of Pygmy which it takes care of. It has the obligation of helping it fill its diverse needs. In recognition, the Pygmy family helps the elder [Ba]Téké family according to its abilities. This is how we have always maintained harmony between us and no one complains.

We can easily understand that the current social system, with its specific historic context, has entrenched discrimination against the Pygmy and enabled the vertical relationship between the Batéké and the Batswa. The former consider themselves the benevolent elders of the latter, who are, in reality, servants at the bottom of the social ladder.

To justify their complacency and passivity, those responsible for the project claim that they do not want to stigmatize people along ethnic lines, as this would amount to segregation. They prefer to speak of "local populations" and not in terms of "Pygmy and Bantu" or "Pygmy and Batéké," because it is difficult to start making distinctions based on people's ethnic identities. According to some officials interviewed, this is because "development is for everyone," and everyone should have the same chances at benefiting from the process. Unfortunately, this argument does not hold up in this context. Recognizing someone's ethnicity is not stigmatization – indeed, the Batéké are proud to be identified by their ethnicity. Why would the Batswa feel any less proud to be identified *as Batswa* by others? (Unless this is done with contempt, that is!) The acronym for the project is CSI-B, which stands for "Carbon Sinks Ibi-Batéké," likely because it has been established on the Batéké Plateau; however, this title may also be seen as referring to the Batéké ethnicity, and yet is not necessarily understood as being prejudicial or implying segregation. Based on this, why would the act of identifying a Pygmy according to an ethnicity constitute segregation? The real problem here is the tradition of discrimination that is so strongly anchored in the local society. We should neither justify nor close our eyes to a tradition of such degradation. The discrimination and servitude experienced by the Pygmy are not their choice, cannot bring them any kind of happiness, and in fact severely compromise their human dignity.

It is the responsibility of the managers of the CSI-B project, which is financed by the World Bank under the CDM and directly implemented in a zone where the Pygmy live, to demonstrate their will and capacity to put an

end to a situation that works directly against the goals of sustainable development (which their project purportedly advocates). The refusal by those in charge of the CSI-B to identify the Pygmy by their ethnicity is not the best strategy; on the contrary, this only perpetuates discriminatory practices and suggests that the managers of the project find this situation acceptable.

When investigators from the survey team asked whether there were actually Pygmy working on the project (as claimed in the project's *Survey Mission Report*), the managers replied "yes, many in fact." However, when asked whether the interviewing team could meet with one of the Pygmies, the managers responded that none could be found on-site because it was a weekend. When this author asked whether there were any Pygmy who work at the project site without being paid, one employee replied that "it depends on fraternal relations woven for generations between Pygmy and [Ba]Téké families." According to this interviewee, "this must not be understood only in the negative sense, as if this were slavery. It is simply respect." This response is out of touch not only with the evident reality of the situation, but also with the perspective of the majority of the Batswa in the Batéké Plateau. In fact, most of the Batswa, especially the youth, express that they feel exploited.

Regarding the question of whether the project could make special concessions in favour of the Pygmy (a type of positive discrimination), given their relatively poor living conditions, the CSI-B managers responded that this would risk creating more problems than it would resolve. "We must let people live in the 'harmony' that has always characterized social relations in the Batéké Plateau," he explained.

Thus, those in charge of the CSI-B project seem comfortable with the discrimination to which Pygmy have consistently been subjected, and would seem to be making an effort to disregard the discrimination against the Batswa, and how that discrimination intersects with the project itself. The Batswa cannot participate in the activities of the CSI-B as a people with dignity and rights; instead, they are treated as second-class entities in a project that does not favour their benefit or involvement. As a result, the distrust of the CSI-B that the Batswa display would seem to be clear and justified. Their recurring reply to questions about the project is: "I don't know anything about it. That does not concern the Batswa. You have to ask these questions of the others [the Téké]."

Other CDM Projects in the Works in the DRC

Other projects aspiring to be classified as CDM projects remain in the embryonic stage. These include:

- A waste recycling plant in the city of Kinshasa, situated on the Maluku Plateau (to be executed by a Canadian agency);
- A biomass project for the treatment and recycling of waste, and the production of electricity from this waste (to be implemented by Strategic Energy Resources, an Italian agency);
- A reforestation project in the Bandudu (to be executed by Bruxelles Capitale in collaboration with the Sociéte de Développement des Forêts); and
- Production of wind-generated power at Nkamba, in the Lower-Congo (also intended to be implemented by Strategic Energy Resources).

Impact of CDM Activities on Indigenous Peoples

This section explores two types of CDM project impacts: current impacts that the Batswa of the Batéké Plateau are experiencing because of activities already in progress; and the potential impacts that will arise when the CSI-B project capital arrives.

The CDM activities currently underway certainly have some positive aspects, such as: the fitting out of wells for potable water in the area; the production of high quality corn flour; the installation of health centres and schools for the population; the manufacture of bricks; and the foresting and reforesting of spaces that were previously highly degraded. Even if the Batswa are not allowed to participate (with dignity) in these activities, and even if they do not gain the same benefits as do the Bantu, the Batswa still experience some indirect benefits in this area.

Beyond these few meagre areas of "progress," which have been confined essentially to the socioeconomic realm, there remain a number of negative impacts of the CDM activities on the Indigenous Pygmy of the Batéké Plateau. These negative impacts manifest themselves culturally, spiritually, socially, and economically. The most obvious effects can be measured in terms of inequitable distribution of the immediate benefits of the project, since of the 50 regular jobs projected, twenty (forty percent) will require a highly qualified labour force. Not constituting the category in

which one typically finds highly qualified labour, the Batswa will have no place in these activities. This only perpetuates Batswa dependence on other populations.[24]

More generally, the development of the Batéké Plateau has left the door open to a sudden increase in population — a demographic influx for which the Batswa Indigenous Peoples are not prepared.[25] There are many significant (potential and actual) consequences of this influx that must be considered. Increased pressure on forest resources (such as game, fish, caterpillars, and other non-timber products) will diminish the supply available to the Batswa themselves, leaving them without alternative sources of animal protein. Social pressures are also being felt, as new influences penetrate the area. Prostitution – for centuries, virtually unknown in Pygmy areas – has now reached the communities and families of the Indigenous Batswa, bringing with it sexually transmitted diseases and other conditions previously confined to cities and other large population centres. What's left of Pygmy culture is also being rapidly eroded. So-called 'modern' music and dance is competing with traditional art forms, while the practices of hunting and fishing are in the process of disappearing as Batswa youth lose their skills in these areas.

Plundering of land still 'belonging' to a few Indigenous Pygmy in the Batéké Plateau is more frequent now than ever. Prior projects claimed portions before the initiation of CDM activities. The CSI-B project itself has already seized some, and when the project grows (from 2,500 - 3,000 hectares to the planned area of 15,360 hectares), additional expropriations will be inevitable. Meanwhile, Batswa sacred sites are steadily being destroyed. Soon, there may not be a single one left. All land is now seen as simple merchandise, with its value is calculated in dollars (value added). The notion of sites reserved for ritual activities is now seen as absurd by many people. The Indigenous Pygmy suffer from the negative effects this view has on our traditional knowledge. Our culture, as we see, has been sacrificed on the altar of lucre.

With population growth exerting increasing pressure, the restoration of fauna (as planned in the CDM project) will not be possible without banning the hunting of all forest-dwelling fauna. This might signify the return of the national parks system, which was of no benefit to the Indigenous Pygmy throughout the DRC. With regard to flora, we have not been able to find any relevant scientific reports on the environmental and social impacts of the introduction of new plant species in monoculture plantations. There is a risk

[24] See "Surveying Mission Report of the Batéké Plateau," Point 6. The Official Report. (DIPY, July 2006).
[25] See "Surveying Mission Report of the Batéké Plateau," Point 6. The Official Report. (DIPY, July 2006).

that some negative impacts will be recognized only years after the fact, when it will be too late.

The following anecdote about the old Pygmy man who believes firmly that these new trees are scaring away the caterpillars says a great deal about the attitude of the Batswa toward tree plantation projects. (Though this may be the result of a lack of sensitizing activities or explanation, it is still very real in their minds.)

> Since my childhood, I picked up caterpillars with my grandfather before, his death, and also with my father, before his death, in the forest that was located precisely where the field of planted trees is. There were always caterpillars in abundance during the season. Even during my youth, there were always a lot of caterpillars. But, since Paul Mushiete's sons (Olivier and Thierry Mushiete) started to replace the trees in the forest with village trees, the caterpillars fled. To find some, you have to engulf yourself very, very far in the real forest. But the Mushiete sons continue to plant trees, the caterpillars will flee even farther still […].

Indigenous Communities' Responses to CDM Activities

As was mentioned previously, Pygmy communities do not recognize the difference between CDM initiatives and others kinds of projects. With the CBI-B project started in the Batéké Plateau, and others looming in the near future, Indigenous groups and communities are concerned about their cultural survival *as peoples*. They are afraid of disappearing, engulfed in the majority culture. This is why the sum and substance of their response to these activities speaks to collective survival.

Although the Batswa are interacting and working with other groups, they try to stay in their villages to ensure that they will preserve some of their culture, perhaps dancing at night, telling stories beside a fire, or other traditional activities. In addition, given the small chance of securing good jobs in this project (and in order that they not be consigned to the degrading or even infantilizing tasks that are typically reserved for the Pygmy), the Batswa of the Batéké Plateau want to develop their own, alternative activities to protect their dignity and respect. These would occur alongside the CBI-B project. During an interview with a group of Batswa men and women, one noted:

> We want, as soon as possible, to associate ourselves (at least a certain number of us) to form a production cooperative to commercialize manioc, caterpillars, and fish, given that we control the cultivation of manioc, the gathering of caterpillars during the season (despite its rarity), [and] also fishing. We need to acquire lands, tools for fishing, and means to sell locally or transport our products to Kinshasa. We know that a hostile reaction could come from the Batéké when our project becomes operational. But we want to try, even so.

Taking into account the threat of expropriation that weighs on the remaining land belonging to the Batswa Pygmy of the Batéké Plateau, land security is also a top priority.

Lessons Learned and Recommendations Offered

The research undertaken in the framework of this case study has revealed that:

1) The activities of the CDM are only beginning in the DRC. The CDM (and related activities) is not yet well known by the general public, nor is its importance or impacts appreciated. In addition, the jargon used by experts to talk about climate change, the *Kyoto Protocol*, and the CDM is not accessible to the non-initiated – in this case, most of the public.

   Recommendation: It is necessary to widely and regularly disseminate all information about the CDM, both at the national and local levels, particularly in project areas. For the whole population to be involved, the public must be effectively and objectively sensitized to the importance and the impacts (both actual and potential) of the CDM. This must be done in a language that local communities can understand.

2) The Ibi Carbon Sinks CDM project is already underway. The project is largely economic in nature, and is principally concerned with reforestation in the Batéké Plateau. Up to now, the Pygmy have been excluded from meaningful participation despite the fact that the Batswa not only have a great deal at stake in local forestry issues, they also have the potential to contribute a significant body of knowledge if given the opportunity to work in the field.

Recommendation: Those in charge of the CSI-B project and their partners should work to create a space for the Pygmy in project implementation. The first CDM project in the DRC must be a true model of inclusivity where people of all ethnicities (who together make up the population of the nation) can interact with each other and work together in harmony. Sustainable development and the management of the environment must be everyone's business, without discrimination. This philosophy is an important part of the Millennium Development Goals.

Specific Recommendation for the World Bank: The World Bank, as the financial backer of the project, should be able to enforce adherence of international standards relative to Indigenous rights, including its own *Operational Policy 4.10* on Indigenous Peoples.

3) The rights of the Pygmy, their specific interests, their culture and their traditional knowledge have not been taken into account in the conception or implementation of the CSI-B project. This is an especially important omission, since the manner in which this first project is implemented will probably serve as a model for other CDM projects to come.

Recommendation: Focused sustainable development must have respect for human rights as its basis; there is no sustainable development without respect for the rights of human beings. It is therefore important that the CSI-B project, as an initiative of planetary interest, be an example of respect for international standards of human rights.

4) The Indigenous Pygmy have been subjected to the CSI-B project without any form of consultation. Further, the Batswa have been dispossessed of lands that were supposed to belong to them. This situation has negated any confidence the Pygmy may have had in the project's ability to provide sustainable development for local people.

Recommendation: The principle of consultation, indeed the *right* to consultation and participatory action, are universal. Perfect though it may seem, a development action cannot be imposed against the will of a supposed beneficiary – the action must be fully communicated and understood. In addition, it must be accepted with full knowledge of its purpose, based on objective information and preliminary sensitization. While other groups can say that they are regularly consulted by the managers of the project, this is not the case for the Batswa Pygmy.

Managers of the project should take into account the presence of the Pygmy and their right to be consulted.

5) This project never underwent a realistic evaluation of its social and environmental impacts. It was only in July of 2006 that workshops on the validation of study results on socio-environmental impacts were programmed (see Annex 1 for more information).

Recommendation: Those responsible for the conceptualization of this project should communicate the results of the socio-environmental impact evaluation through a written report accessible to the general public, using accessible language rather than the complicated language used by experts. Illustrated forms of communication should be used to reach stakeholders who are not literate.

6) The authors of the project's impact assessment study do not seem to foresee any possibility of failure in the CSI-B. Rather, they seem preoccupied with publicity and conveying the impression of widespread and equitable benefit. Unfortunately, no consensus exists on the efficiency of afforestation in the management of carbon emissions.

Recommendation: The results of the study on the impacts analysis must be published and left open for at least a few months for the objective and critical commentary of the public.

7) The will of the Batswa to emancipate themselves is increasingly perceptible, and is increasingly influencing their traditional relations with the Batéké. If it is not properly managed by the elite of the region, for example those in charge of the CSI-B project, this situation risks additional frustrations and unnecessary intercommunity tensions.

Recommendation: Sincere efforts must be made, and adequate mechanisms must be put in place, to address the discrimination, exclusion, and exploitation of the Pygmy. Otherwise, there is serious risk of an explosion of this latent tension upon the implementation of the CSI-B project, seriously compromising focused, sustainable development in the whole region.

Conclusion

Climate change is a problem that concerns all of the citizens of the world – from those who live in skyscrapers in New York or Sydney, to the Pygmy who live in traditional huts in the confines of the tropical forest, or in the wooded savannah of the Batéké Plateau of the Democratic Republic of the Congo. Everyone should have the right and the means to participate in the efforts to mitigate, where possible, the effects of global climate change. This is especially true of the Indigenous Peoples who are subjected not only to the effects of climate change itself, but also to the impacts of the "solutions" offered under such initiatives as the Clean Development Mechanism of the *Kyoto Protocol*.

This case study of Clean Development Mechanism activities in the Democratic Republic of the Congo reveals how much the actors (that is to say, the authors of the Carbon Sinks of Ibi-Batéké project, its funders, the buyers of carbon credits, and the Parties to the *United Nations Framework Convention on Climate Change*) seem to be lacking in sincerity. They claim to want one thing, but work toward its opposite. On the one hand, they affirm an understanding of the fact that the struggle against the effects of climate change must involve everyone. On the other hand, they act as though only they are concerned with the problem, and that they have the monopoly on the solution. In fact, we cannot understand why Indigenous Peoples, who are so profoundly affected by the effects of climate change and by the solutions being proposed, cannot be official stakeholders in the process. Whether it is on islands, within the forests, or in the polar or coastal regions, Indigenous Peoples are suffering the effects of climate change. It is time that they were formally recognized as major stakeholders in the effort to confront climate change, rather than silent, curious spectators at the discussions of more significant entities.

Regarding the first Clean Development Mechanism carbon sink project in the Democratic Republic of the Congo: our wish is that it respect the rights and the knowledge of the Indigenous Pygmy. The World Bank, which is financing the Carbon Sinks of Ibi-Batéké project, should respect its own policies of protection, and communicate a clear message to the managers of the initiative. In this way, the Clean Development Mechanism can be an effective and commendable tool of development, while also promoting human rights. After all, there is no development without respect for human rights.

Annex I

Workshops on the Study of Socio-Environmental Impacts of the Carbon Sinks Project[26]

The Ibi Carbon Sinks project (CSI-B), based in the Batéké Plateau, is proceeding with the dissemination of the first results of a study on socio-environmental impacts of the project. According to project promoter, Olivier Mushiete, a series of workshops on this topic is planned in rural areas and in the city. These workshops are being organized with the support of the National Bureau of the World Wide Fund for Nature in the Democratic Republic of Congo, and with the financial support of the Netherlands Development Cooperation System. The principal goal of this project is to support the realization of a legislative framework on forestry.

This project aims to specifically reinforce the capacity for implementation of measures under the Sustainable Settlement of Forests (ADF) by local partners in the forest concessions of the DRC, Cameroon and Gabon. This will be accomplished by supporting application and general control of ADF-authorized techniques by administrations. This aim is also positioned as a matter of promoting independent evaluation of ADF techniques (i.e. certification) through the reinforcement of local capacities. For the organizers, these workshops will build the capacity of public service agents involved in the Clean Development Mechanism, as well as other actors involved in national development However, before putting into action any afforestation project, it is necessary to document its implications for local sustainable development.

The first step is to hold a two-day workshop in the rural areas of the Batéké Plateau, where the CSI-B is located. At this workshop the study results will be presented to the population, including customary chiefs and notables, villagers, and agro-forestry representatives from Mbankana (situated 100 kilometres from Kinshasa). To the public will be added a group of public service agents involved in climate change, impact studies, and the clean development mechanism (without omitting local and international NGOs or other actors involved in group development).

[26] Godefroid Ngamisata, "Central Africa: Workshops on the study of socio-environmental impacts of the Carbon Sink project" *Le Potentiel*, (July 14, 2006).

The *Kyoto Protocol*

The second workshop is targeted at development actors. It will be organized in the city of Kinshasa on Tuesday July 18, 2006, with the input of a range of experts. A workshop is also planned on validation by official authorities, which will be followed by a series of interventions by specialists from the scientific community. These experts will exchange, among other things: information on the *Kyoto Protocol*; what is at stake in the CDM for the DRC; case studies on the CSI-B; local and international constraints; impacts and measures of attenuation; the international carbon market (in particular the case of the European market); and environmental NGOs' positions on the question of climate change.

Annex II

Interview with Olivier Mushiete
Manager, Mayimpili CO_2 Initiative on the Batéké Plateau[27]

1. You are one of the authors of the Mayimpili CO_2 Initiative in the Batéké Plateau. Could you please explain the major thrust of this concept?

The Mayimpili CO_2 Initiative (named after a river that goes through the Batéké Plateau, between Kwamouth and Kinshasa) was put in place in order to progress and initiate new development perspectives in the Batéké Plateau (village situated +/- 50 kilometres from Kinshasa in the urban community of Maluku). Our station at Ibi associated itself with other local non-governmental organizations to promote this operation, in order to engage ourselves in an integrated rural development approach. We set two major goals for ourselves: to work along fluvial and transport axes. It is important to signal that the importance of these roads no longer needs to be demonstrated, in the sense that they enable a large number of basic products to arrive at consumer centres. The Mayimpili strategy aligns itself with the *Poverty Reduction Strategy*. We are working with structures such as Europ-Afrique, Gi-Agro, Ferme Bombi, the Community for Rural Development and the Capl.

[27] Godefroid Ngamisata, "Five Questions with Olivier Mushiete," *Le Potentiel,* (October 6, 2006).

2. What could be the contribution of the Ibi Carbon Sink station to the preservation of ecosystems?

The Carbon Sinks project is in its preliminary phase. To better situate the genesis of this project, we must, in my opinion, explain the major angles of the *Kyoto Protocol* on climate change. This protocol was adopted in the Japanese city of Kyoto in December 1997. The objective of this protocol consists of completing the *United Nations Framework Convention on Climate Change*, with an eye to obtain a stabilization of the concentration of greenhouse gases at a level that avoids any disruption of the climate system for the preservation of ecosystems in order to contribute to sustainable development. The *Kyoto Protocol* is targeted at developed and industrialized countries, who are responsible for atmospheric pollution and its negative consequences on humanity and biodiversity. It demands a numbered rate of reduction of greenhouse gas emissions by developed countries. The question that must be asked at this point is whether it can be known if the Democratic Republic of the Congo is industrialized. The reply is "certainly not, but it aspires to become so." This is the whole problematic now for judicious choices in order to engage ourselves in the reasonable management of natural resources.

3. What alternative is there to help populations in their struggle against poverty?

Through our activities, we want to help the local population to modify its behaviour in order to regenerate fauna [and] flora to preserve biodiversity. We are trying to sensitize the population to reduce the production of fuel-wood to […] all the while contributing to the improvement of the environment.

4. Is it possible to conceive of the integrated development of the city of Kinshasa starting from the Batéké Plateau?

Before anything else, it is a question of narrowing the problem related to the demographic explosion of the city of Kinshasa with more than eight million inhabitants. The city of Kinshasa's needs are enormous: nourishment, energy, provision of necessities. Through our activities in collaboration with our partners on the ground, we are organizing the structure of production cooperatives with an eye to create value added in zones of production. We are also organizing transformation activities for certain basic on-site products like manioc and corn, by conditioning them. In brief, the

conception of integrated development of the city starting from the Batéké Plateau is possible, but difficult in the current context of the Democratic Republic of the Congo.

5. Is the realization of the PRSP possible in the Democratic Republic of the Congo?

The success of the *Poverty Reduction Strategy* and its implementation is a collective and individual responsibility. I am optimistic. Each one of us has some responsibility to do something so that the programme works. Our preoccupation as Congolese people is to work for the betterment of our well-being. The government and funders have made a gracious step towards participatory consultations at the grassroots. These consultations permitted the population to give their own perception of poverty, to identify problems and solutions before [committing to] this national document. To struggle effectively against poverty, we must invite people to come together and define the strategies to be put into place. Nonetheless, each must also take on his own responsibilities as a citizen. The seeking out of other partners will not [occur] until we have put some order into the organization of our individual lives.

The India Case Study

Carbon Sinks, Carbon Trade, the Clean Development Mechanism, and the Indigenous Peoples of the North-East Region of India

Anna Pinto

List of Acronyms

ACTIP: Action Committee against Tipaimukh Project
ADB: Asian Development Bank
ALGAS: Asia Least-Cost Greenhouse Gas Abatement Strategy
CDM: Clean Development Mechanism
FDST: Forest Dwelling Scheduled Tribes
FERN: Forest and Environment Research Network
GHG: Greenhouse Gas
GOI: Government of India
IFI: International financial institution
IWLP: Indigenous Women's Learning Partnerships
LSHEPP: Lower Subansiri Hydroelectric Power Project
MDoNER: Ministry of Development of the North-East Region
MW: Megawatts
NAC: National Advisory Council
NEEPCO: North-Eastern Electric Power Corporation Ltd.
NER: North-East Region
NPV: Net Present Value
R&R: Rehabilitation and resettlement
USD: United States Dollar
WCD: World Commission on Dams

About the Author

Anna Pinto, who is forty-eight years old with three children, represents the Meitei people at Indigenous forums. She has worked extensively in the field and in advocacy on Indigenous issues, including the rights of children; human rights; conflict and its triggers and fallout; heritage and knowledge; women's rights; territories and lands; governance; and traditional spiritual knowledge and its relationship to skills. In partnership with Indigenous Peoples in the North-East of India (where most of her work has been based and focused), Anna Pinto writes numerous reports, papers, and articles every year on these various issues, as a component of her advocacy efforts. She was the founding Secretary of the Centre for Organisation Research and Education for eighteen years, and is now a Joint Secretary of the centre. Anna Pinto is on the Board and Steering Committees of several Indigenous, women's, and children's groups and organizations, including Land is Life, Women's Green Global Action Network, the Indigenous Peoples' Center for Documentation, Research and Information.

Contents

Introduction

This case study does not intend to propose or argue the reality of climate change, or that it has had an impact on the peoples of the North-East region of India.[1] It is based on the empirical cognizance of those affected by environmental events. It relates that the impacts of climate are experienced, by the Indigenous Peoples of North-East India, as radical differences in their ancient life patterns. They see these changes as having been imposed or instigated by forces beyond their control and consent. These may be perceived shifts in the natural order (such as changes in weather patterns and biodiversity) or policies instituted (such as granting migrants and settlers of different ethnic groups access to Indigenous Peoples' lands).

While it is not the focus of this paper, it is clear that these changes are real: variations in rainfall patterns, seasonal temperature changes, and biodiversity depletion are verifiable. Even if not comprehensive enough to constitute "proof," these observations are certainly sufficient to indicate a strong probability.[2]

General Background of the Region

The North-East Region (NER) of India (comprising the states/provinces of Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, and recently-added Sikkim) is the ancient homeland of approximately 100 groups of Indigenous Peoples. Some of these are intermingled with peoples of Kuki-Chin, Han, Khmer, and Tibeto-Burman origin, who have, in turn, integrated with the other ethnic groups of sub-continental India.[3]

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[1] For discussion, see Sumana Bhattacharya; "Assessing the Impacts Of and Adapting to Climate Change at a Local/National Level In India" presented at the OECD Global Forum on Sustainable Development on the Economic Benefits of Climate Change held 6-7 July, 2006 at OECD Headquarters in Paris; and "An Assessment for India; Chapter 5; Climate Change Impacts on Infrastructure" from Winrock International India Development and Climate.

[2] Consult "Impact of Climate Change on Forests in India" by N. H. Ravindranath, N. V. Joshi, R. Sukumar and A. Saxena of the Centre for Ecological Sciences, Indian Institute of Science and the India Forest Survey of India, 2005.

[3] Richard Cordaux, Nilmani Saha, Gillian R Bentley, Robert Aunge, S M Sirajuddin and Mark Stoneking, "Mitochondrial DNA analysis reveals diverse histories of tribal populations from India," *European Journal of Human Genetics* (2003), 11, 253-264. See also Gadgil,M., Joshi, N.V., Shambu Prasad,U.V., Manoharan, S. and Suresh Patil, *The Indian Human Heritage*, Eds. D. Balasubramanian and N. Appaji Rao, (Hyderabad: Universities Press, 1997) 100-129.

Taking into account recent waves of both legal and illegal refugees and migrants from Nepal, Bangladesh, and Eastern and Northern India, the current population of the region is over 32 million, with around eighteen percent of these being migrants (a conservative estimate). Additionally, there is a large transient and almost entirely male population that represents approximately ten to twelve percent of the settled population. These include military personnel who are stationed in the area, due to its being a long-term conflict zone, as well as many businessmen hailing mainly from North India, who are engaged in legal and illegal trade both across international borders and between sub-continental India and the region. Transient, seasonal migrant labour adds between seven and twelve percent more to this population, depending primarily on the status of development infrastructure investments and construction projects (roads, buildings, dams, etc.) that are mushrooming in the region.[4]

The region is mountainous and intersected by alluvial valleys of the Brahmaputra and Barak river systems. It incorporates the lower Himalayan ranges east of Everest and Kanchinjunga peaks — the growing tip, as it were, of the Himalayas, as they rapidly cascade into the Ganga-Meghna delta of Bangladesh – and is thus affected by glacial melt.[5] The terrain hosts an immense and unique amount of biodiversity, enhanced by the geomorphic age and geological variegation of a relatively young and evolving array of systems. Rich in minerals (including oil, coal, and uranium deposits with high proportions of fissionable isotope), well-forested lands, and substantial surface water wealth (that has a high potential for hydro-power generation and irrigation), the area is being subjected to a complex and multi-faceted assault to acquire, privatize, and exploit these resources.[6]

Much of the verdant NER, some of it ordinarily inundated during the monsoon season, has experienced deficient rainfall. The region is faced with a paradox that stems from the failure of governments to adopt coherent long-term plans for rain harvesting and water management, aided by strategies to check soil degradation, deforestation, illegal logging, quarrying, and mining. Except Mizoram, which received 1,016 mm of rainfall during the period January-August, all of the states recorded deficits ranging from fifty-two

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[4] See "Unorganized Labour," Deshkal Society, (Delhi: 2006). http://www.deshkalindia.com/unorganised-labour.htm (Accessed January 18, 2007). And Saswati Choudhury and Ratna Bhuyan, "Development Disparity and North-East Region," in vol. 7, no. 2 of *Dialogue Quarterly Journal of Astha Bharati,* (2005). http://asthabharati.org/Dia_Oct%2005/Sas%20&%20Rat.htm (Accessed January 18, 2007).

[5] See World Wildlife Fund for Nature (WWF) Nepal Program, "An Overview of Glaciers, Glacier Retreat, and Subsequent Impacts in Nepal, India and China" (March, 2005).

[6] U. C. Sharma and Vikas Sharma, "Water resources development, management and utilization in the north-eastern region of India: lessons from the past and future strategies," (India: Centre for natural resources management, 2004).

percent to fourteen percent, reflecting the characteristic spatial variability of the monsoon even within homogenous regions. The situation is particularly stark in Meghalaya and Assam, which have not seen even a moderate drought since 1896. In Cherrapunji in Meghalaya (formerly the wettest, now only one of the wettest inhabited places on earth), women today trek long distances to fetch water: the region has lost its green cover and topsoil after years of slash-and-burn agriculture.[7] Five districts of Assam saw flood waters rolling by at the start of the monsoon season, which forced about seven *lakh*[8] (700,000) people out of their homes.

But since then there has been no rain, and the state government, which has termed the situation "drought-like," is apparently waiting for the monsoon season to be over before making a formal declaration. More than a million farm families have been affected in twenty-two of the twenty-seven districts. Rice crops have withered, and production will be far short of the targeted four million tonnes. Peasant families numbering about ten *lakh*, (one million) and agricultural labourers numbering twelve *lakh* (1.2 million), are bearing the brunt. Also hit is the 430km^2 Kaziranga National Park, home to 1,850 endangered one-horned rhinos. Adding to the woes will be the impact of hydro-electric power generation (for which the region has 41.5 percent of the national potential) and industrial production.

Immediate steps are needed to prevent large-scale unemployment, food scarcity, a fall in income levels — and worse. As the Assam State Kisan Sabha has pointed out, in the absence of intervention, farmers may be pushed to the brink. It is unclear if the state governments have comprehended fully the gravity of the situation. In Assam, for instance, all that the government seems to have done is to waive land tax and distribute diesel in meagre quantities to pump water from wells. Some of the states have demanded that teams be dispatched to assess the level of distress and announce ameliorative measures. This can hardly wait, now that the retreat of the monsoon is imminent. Also needed is a campaign to encourage water conservation. A region that is already lagging behind on the development front, owing to a range of complex factors, including a history of unrest, should not be allowed to suffer on yet another front.[9]

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[7] Slash and burn agriculture has been going on for thousands of years in the region. It is unlikely that it would, by itself and without external factors result in such drastic change. In fact, the entire surrounding region has been devastated by quarrying and logging for timber, and settled agriculture has been aggressively promoted by the government for over thirty years.

[8] A *lakh* is a unit in the Indian numbering system. 1 *lakh* = 100,000.

[9] "Rain deficit in the North-East," *The Hindu*; 14 September 2006, Editorial Section. http://www.hindu.com/2006/09/14/stories/2006091407861000.htm (Accessed January 18, 2007).

The policy shifts mentioned are also real. This is verifiable in the radical alterations proposed in legislation and programming priorities. It is most evident, however, in budget allocations and unashamed government support of interventions and proposed interventions which, without the fiscal and economic incentives currently emerging, would be viewed as non-viable, as well as inadmissible in terms of India's policies and laws.[10] Wherever possible, appropriately attributed excerpts of these official and public proposals, positions, discussions, and debates have been included in the body of this case study. Based on these documents, this report then proceeds to describe various civil society analyses of, responses to, and interventions against these official actions.

Given that this case study intends to represent the position of Indigenous Peoples on these interconnected issues, the conclusions and recommendations have been restricted to a presentation of the recommendations made to the Government of India (GOI), in multiple fora, addressing the government agencies and platforms set up for public response.

Policy Developments Pertaining to The CDM and Carbon Sinks

Although India figures among the top ten contributors to greenhouse gas (GHG) emissions, its relative share is low when emissions are measured per capita. The current gross emissions per capita in India are only one-sixth of the world average.[11] The national GHG inventory for India was prepared by the National Physical Laboratory as a part of the Asia Least-Cost Greenhouse Gas Abatement Strategy (ALGAS) Project using the methodology prescribed by the Intergovernmental Panel on Climate Change. The sector-wide inventory prepared in this report is presented in Table 1. The total carbon dioxide-equivalent emissions from India are estimated to be 1,001,352 Gg[12], which is about three percent of the total global carbon dioxide-equivalent emissions. Based on this, the per capita carbon dioxide-

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See also Murari Lal, "Regional climate scenarios–future changes in variability and mean including extreme weather events: issues related to agriculture policy in south Asia" Centre for Atmospheric Sciences, Indian Institute of Technology, New Delhi and presented at the South Asia Workshop on Adaptation to Climate Change for Agricultural Productivity organized by the Government of India, UNEP, and CGIAR (New Delhi: 1-3 May 2002).

[10] Such laws include the new "Tribal Bill," new Forest Legislation, and mass eviction processes.

[11] Asian Development Bank, "Climate Change in Asia: India Country Report" (Manila:1994).

[12] A Gg (gigagram) is equal to 10^9 grams; synonymous with 1 kilotonne.

equivalent emissions for 1990 are estimated to be 1.183 metric tonnes (1,183 kg) of carbon.[13]

Table 1: Emissions Figures[14] (Gg)

Total national emissions and removals	1,001,352
Total emissions from agriculture	341,064
Change in forests and other woody biomass stock:	-6,171
Forests and grassland conversion	52,385
Abandonment of managed lands	-44,729

The scramble for lands, the scuttling of legitimate access and acquisition, and the jostling for funds (particularly a share of the World Bank's USD 2 billion recently slated for conservation) are evident in the following excerpt from the report of the proceedings of the National Advisory Council (NAC):[15]

> Discussions took place on the "Revival of Rural Cooperative Credit Institutions" in the context of the commitment […] to double the flow of Rural Credit in three years and to substantially expand the coverage of Small and Marginal Farmers by institutional lending. […] It was agreed that […] [t]he centrality of legal and institutional reforms would be emphasized. The NAC also underscored the need to pay special attention to expand institutional credit in the [NER] where community ownership of land is common.
>
> The technical, social and market issues in respect of "Regeneration of Wastelands" were discussed. It was noted that these related to the regeneration of different types of wastelands

[13] Asian Development Bank, "ALGAS-India (Asia Least-Cost Green house Gas Abatement Strategy)" (Manila: 1998). CO_2 emissions from biomass burning are not included in the national totals. CH_4 emissions are calculated according to the IPCC's 1996 methodology; CO_2 equivalents are based on global warming potentials of 21 for CH_4 and 310 for N_2O; NO_x and CO are not included, since these potentials have not been developed for these gases; bunker fuel emissions are not included in the national total; NO_X and CO emissions are computed for the transport.

[14] Asian Development Bank, "ALGAS-India (Asia Least-Cost Green house Gas Abatement Strategy)" (Manila: 1998).

[15] Press Release from the National Advisory Council of India, August 26, 2005. http://nac.nic.in/Pressrelease/pressrel26aug.htm (Accessed January 18, 2007).

> and cover agro-forestry, farm forestry and industrial plantations. […] It was decided that the NAC would take up specific Action Points with the [GOI] with a view to providing [a] sharp and urgent focus to the implementation of the Wasteland Development Programmes. […].
>
> The Council discussed the issues pertaining to a new *National Policy for the Resettlement and Rehabilitation* of project-affected families and related matters. It was agreed that these would be studied further to facilitate the consideration of a composite *Land Acquisition and Rehabilitation Bill* in the [GOI], accompanied by effective monitoring mechanisms.[16]

Rationale for the CDM and Carbon Sinks

Caught between the conflicting demands of humane development, human rights, the global ecological and environmental crisis, and the political pressures exerted by peoples' movements (including Indigenous movements) on the one hand; and the apparently irreversible trends of global, corporatized markets and the dominant economic development paradigm on the other, policy makers are finding procrastination and vacillation expedient. They fail to take action on the measures necessary to retard – let alone stop, mend, or provide compensation for – the damage caused by private, governmental, and corporate greed.

The objectives and mechanisms that have been instituted through the Clean Development Mechanism (CDM), ostensibly to address these damages, are so divergent from the original aims of *Kyoto Protocol* that one might wonder whether they belong to the same process at all. One clear objective (indeed, it appears to be the overarching objective) is to permit business to not merely survive unscathed, but to emerge triumphant from the havoc it has wreaked upon not just this civilization, but this world. The persistent and highly coercive efforts to equate monetary investment with irreplaceable resources are the hallmark of this objective. All programmes to preserve and regenerate natural environments are balanced against the financial costs and benefits of cash investment – with a seemingly invisible and unaccountable bias in favour of providing more money to the moneyed.

[16] The bold lettering in the text is by the author to indicate significant sections which refer to the region and policy which is expected to impact most directly on the region.

The CDM, Carbon Sinks, and Indigenous Lands of the North-East

Restricting their interpretation of CDM to a superficial, contrived, and simplistic accounting of GHG emissions, India has been advocating strongly for both hydro-electric and nuclear power to be included in the scope of acceptable projects. This is despite the well-known and comprehensively documented radiation contamination from extraction, as well as other human and environmentally damaging energy production aspects of nuclear fuel processes in India and around the world. The sum of carbon emissions from hydro-electric generation is now also understood to be offset both by increased emissions during construction (including the manufacture of construction materials and infrastructure), and reduced natural carbon sequestration due to radical land-use change, biosphere transformation, and drastic terraformation.

The NER has two known major deposits of high fission-grade uranium. Public corporations and private industry are attempting to exploit these deposits in spite of strong resistance from the local communities, on whose lands they lie. The technologies and processes being considered include a form of strip mining that will devastate substantial tracts of scarce, sensitive, and valuable lands in Arunachal Pradesh and Meghalaya. The Forest Department is hoping to generate funds through the carbon market by re-foresting these lands after local communities have been dispossessed of them by the mining acquisition.[17] Similarly, in the approximately 200 medium- to mega-scale hydro projects in various stages of planning and implementation in the region, large areas of watershed, catchment, and downstream banks reinforcement are expected to attract investment from international financing institutions (IFIs) based on the carbon market.

Role and Activities of IFIs, Academia, and State Policy Planners

For all developing economies, particularly those that demonstrate the ambition of global fiscal leadership that India does, the key is seen to be energy and its "cost management."[18] If the Western ideal of industrialization and consumption is to prevail, standing as the model of prosperity, cheap and plentiful energy is essential. A third of the nation's nuclear, forest, fossil

[17] Karin Kemper of the World Bank presenting part of the findings of their "Study on Natural Resources Water and the Environment Nexus for Development and Growth in North-East India" held in Guwahati, November 10 and 11, 2005.
[18] This covers costs both as potential emissions and actual fiscal investment.

fuel, and hydropower potential is found in the NER, and these reserves cannot be ignored. Over the past decade in particular, there have been a series of policy initiatives aimed at reconciling this overarching aim of cheap energy with the need for GHG emissions reduction and the complex reality of multiple conflicts (involving the state, Indigenous Peoples, and private enterprise) in the region. There are 104 armed groups in the NER, many dating from the integration of the territories into the Union of India. They each demand various levels of autonomy and self-determination, ranging from complete independence to local self-governance and control over local natural and cultural resources.[19]

While academics (particularly technocrats) are frequently the facilitators of dialogue between various actors, they are also participants with vested interests, politicized activity, and high visibility. India's new education policy, forced upon it by the World Bank as an essential component of liberalization and continued investment, causes State patronage to wither. This has encouraged a return to hunter-gatherer strategies in order to support peoples' livelihoods, lifestyles, and aspirations.[20] It is in this climate of half-hearted academic inquiry that major policymaking in the NER is being undertaken. This enables 'technical' decisions to maintain a semblance of neutrality and apolitical action.[21] Seminars and conferences, conducted under the aegis of universities, are thus vehicles for the entrenchment of policies that are insulated from the public domain. In the guise of intellectual property and hiding behind the bulwark of scientific inquiry, these seminars and conferences remain inaccessible to the public, and immune from any civil society intervention.[22]

Examples of this practice and strategy abound. On October 4, 2005, under the aegis of the North-East Chamber of Commerce & Industry, the Assam Administrative Staff College (Khanapara, Guwahati) hosted the 5th Energy Summit of the North-East. Speakers presented technical papers on subjects ranging across the energy provision spectrum, including: efficiency, distribution; the fossil fuel sector; rehabilitation (afforestation and reforestation of lands impacted by extraction); future investment; energy security; the non-fossil fuel sector; renewable sources; conservation; carbon trading; pricing; and sustainable use. Most 'academic' or 'technical' papers were tied to 'development' of the NER, and therefore virtually all contained

[19] Pinto et al, "How many wars have been in my brief years," Indigene publication (2004).
[20] See India's "New Education Policy" from 1996 and 2000.
[21] Examples follow from reports of such seminars in the local newspapers and in World Bank and Asian Development Bank Project Proposals listing academics to be engaged in these processes and reports of their studies.
[22] These are literally on the premises of these institutions and, therefore, imply the mantle of academic learning to its processes.

an implicit ambition for land, outlining major construction, exploration, and delivery projects.[23]

Several IFIs are interested in development in the North-East, one of which is is the Asian Development Bank (ADB), whose recent efforts have focused more and more on remote areas. The ADB has answered the GOI's request for support for power sector development, a part of its "Power for all by 2012" initiative, by investing almost USD 1.1 million to the North-East Power Sector Development Project. About one-fifth of India's crude oil and natural gas reserves are located in the North-East – the second largest concentration in the country – giving the NER the capacity to export a significant amount of power to the rest of the nation. The ADB has proposed undertaking environmental assessment on the North-East Power Sector Development Project, with a focus on "mak[ing] the environmental assessments and EIA conform to ADB's requirements;" "strengthen[ing] environmental management plans for specific investment components;" "evaluat[ing] whether the proposed power projects […] qualify for emissions reductions trading under the Kyoto Protocol clean development mechanism (CDM);" and "evaluat[ing] the possibility of creating community-based organizations to rehabilitate and manage small hydropower facilities."[24] A "resettlement, Indigenous Peoples, and social [impact] assessment," a poverty impact assessment, and an environmental assessment are each expected to take three to four months to complete. ADB is also currently processing a Technical Assistance proposal for capacity-building in India.[25]

Typical of multilaterally-funded projects in the North-East are 'public' meetings, held with IFIs in cooperation with governmental development agencies, in the presence of *pre-selected members of the public*. These meetings provide examples of the kinds of strategies used to appropriate Indigenous lands and affect land-use change on a massive scale – after the GOI promised comprehensive policy changes vis-à-vis Indigenous territories in the region. The government and IFIs consistently deny such intentions, words, and actions (and responsibility for their effect), leaving civil society representatives no choice but to research their statements and documents. This case study can be considered part of that effort.

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[23] Assam Tribune, "Energy Echoes" (October 18, 2005).

[24] Asian Development Bank, "Technical Assistance to India for Preparing the North East Power Development Project," (December 2004). http://www.asiandevbank.org/Documents/TARs/IND/tar-ind-38312.pdf (Accessed January 18, 2007).

[25] Asian Development Bank, "Technical Assistance to India for Preparing the North East Power Development Project," (December 2004). http://www.asiandevbank.org/Documents/TARs/IND/tar-ind-38312.pdf (Accessed January 18, 2007).

The World Bank and MDoNER

The World Bank held a meeting under the auspices of the Ministry of Development of the North-East Region (MDoNER) in order to assess and discuss with civil society the potential issues relating to development. The issues were detailed in a study carried out by the World Bank and MDoNER,[26] which called for "catalyz[ing] investment and initiat[ing] institutional change,"[27] in response to the GOI's desire to have the World Bank focus on development in the resource-rich North-East. The Bank's position was allegedly based on the "expert papers" they commissioned. Original papers were, of course, not available in full, nor were there consultations on the selection of the investigators/researchers who, being paid by the Bank, can hardly be presumed to be neutral.

According to some of the World Bank-funded "expert" assessors, funding is available for both carbon sequestration (such as forestation) and emission reductions within this project. Unfortunately, international financing for reforestation is available only if the land in question has had no forest cover since 1990 – and official data shows a very rapid increase in forest cover in the last five years in many states in North-East India. Therefore, since many forests have recovered or are currently recovering, there may not be much potential for this type of reforestation project in the region.[28]

The CDM options to convert wasteland or marginal (arable) land to forests do not appear, in this case at least, to coincide with either Indigenous development interests or the global imperative in climate change abatement. Instead, the aim appears to be the re-classification of as much land as possible as either wasteland or marginal arable land in order to justify conversion to carbon sinks. The end result is that forested lands managed by Indigenous communities (such as those used for *jhum*[29] or minor forest produce) may be re-classified, with impunity. These imperatives are not as straightforward as they seem, motivated either by mere profitability or by a desire to implement climate change adaptation and mitigation measures; instead, they appear to be the most efficient manner of removing lands from

[26] Karin Kemper of the World Bank presenting part of the findings of their "Study on Natural Resources Water and the Environment Nexus for Development and Growth in North-East India" held in Guwahati, November 10 and 11, 2005.
[27] The above came from Karin Kemper of the World Bank presenting part of the findings of their "Study on Natural Resources Water and the Environment Nexus for Development and Growth in North-East India" held in Guwahati, November 10 and 11, 2005.
[28] Kemper, Karin World Bank "Study on Natural Resources Water and the Environment Nexus for Development and Growth in North-East India" held in Guwahati, November 10 and 11, 2005.
[29] *Jhum* is a term that refers to shifting cultivation (also known as "slash-and-burn").

collective (community) ownership and putting them under private (corporate) control. For this to happen, land-use change must be able to justify land *ownership* change. So, what are the incentives presented to convert these lands? According to a report from Karin Kemper of the World Bank,[30]

In US $ per ha/year	Financial Returns	True Economic Returns (Opportunity Costs)	Carbon Finance Returns
Jute	225	28	5 – 30
Paddy	192	16	5 – 30
Mustard/ Rapeseed	88	-53	5 – 30

True returns from agriculture are low, so gains from the "Green Revolution" are diminishing. Farmers reliant on mustard or rapeseed are most likely to gain from converting farms to forests, if offered the opportunity. Much of the original forest cover has been lost to "*jhum*scapes," felling, and degradation.

@ 1% of land use conversion	Profitability of low sequestration in $US million	Profitability of high sequestration in $US million
Rape-Mustard	0.5	3.2
Wasteland	3.1	19
Forest – reclassified	29	172
Total	**31.6**	**194.2**

Evidence suggests widespread deforestation since 1991 [note that this statement directly contradicts GOI data referred to earlier in the same presentation]. Therefore the recommendation is to evoke the clause in CDM on how forest is defined so long as minimum criteria are met (10% - 30% crown cover, 0.5 hectares minimum area, and a tree height of 2 - 5 meters). This will open new opportunities for CDM in areas now classified as

[30] Kemper, Karin World Bank "Study on Natural Resources Water and the Environment Nexus for Development and Growth in North-East India" held in Guwahati, November 10 and 11, 2005.

> "forest"; necessitates that the GOI formally respond to request from CDM; and requires the GOI establish mechanisms for verification and identification of areas.

In terms of the water sector, it was recommended that the CDM be used to build new dams (provided political, social, and implementation risks do not "lower the price"). Carbon finance is thus presented by the World Bank as an opportunity to capitalize on North-East India's natural heritage. Demanding that *jhum* areas be defined as "deforested land" and that sustainable power development focus on dams if the risks are reduced either forgets, feigns ignorance of, or discounts the fact that humans have contributed significantly to the bio-contouring of the region. The figurative carrot for the NER and its peoples is to be "resources for poverty alleviation in the poorest districts (e.g. Tribal Areas)" — an entitlement which the GOI has both actively and passively refuted, and which the proposed plans will no doubt continue to falsely promote.

Impacts and Responses

It is clear that the entire spate of policy modification and innovation is primarily directed at aggregating control over Indigenous land-based resources (including water, minerals, forests, and biodiversity). Whether directly or through forcing accession, these policies serve to facilitate appropriation of land for the generation of hydro- and mineral-based power, along with their spin-off benefits (such as carbon credits). In these situations the Indigenous communities, who are presently the *de facto* and *de jure* owners and caretakers of these resources, and who have been robbed of these prerogatives and wealth, are to be drawn in as cheap or perhaps indentured (or even captive) labour. That labour will serve the construction of the facilities, the production of power, and the carbon sinks and credits spawned for the benefit of industrial and governmental interests.

The following examples illustrate the multi-pronged strategy that has evolved over the last two decades to address these threats. One aspect of this strategy involves strengthening communities through capacity building initiatives, and supporting advocacy and awareness-raising campaigns, in solidarity with peoples' movements. A second technique is directed at government policy-makers, analysing and critiquing their actual and potential effects while suggesting constructive changes. A third aspect focuses on national and international advocacy work.

An Introductory Technical Workshop

In 2004, a regional technical workshop was held, with the cooperation of the Forest and Environment Research Network (FERN). This workshop included a toolkit on carbon sinks and trade, and facilitated discussions on the links between dams, evictions, biodiversity implications, and carbon sinks. The on-the-ground experience of evictions, in the context of newly-articulated government policy on Indigenous Peoples' land rights and the resurgence of high dams on the international and national planning agenda, convinced several local and international organizations to more critically examine the implications of these kinds of initiatives.

Campaigns against IFIs

A series of initiatives in the NER have sought to expose the linkages between international and national policies and finance activities (whether nominally "developmental" or purely "commercial") and the continued usurpation of Indigenous Peoples' rights to resources and self-determination. Campaigns across the region have involved awareness-raising, mass protests, research activities, and joint programmes of advocacy with national and international networks; and have produced clear undisputable evidence of the nexus between apparently separate processes of "legal reform," "development planning," and resource commercialization. Through these initiatives of resistance, a substantial lobby has emerged – one with a growing public voice.

It is clear that the overwhelming attention being paid to the NER is not, in fact, due to concern for the vicious combination of neglect, forcible assimilation, and repression occurring in the region. Rather, it stems from a renewed crusade to appropriate the resources of Indigenous inhabitants – primarily for energy to fuel India's economic ambitions and, secondarily, to offset the high cost of power generation installations by accessing the benefits of the carbon market. Needless to say, international financial institutions and corporate investment entities people the lobbies driving government planning in this area. The additional (and perhaps in the long term, most financially valuable) benefit would arise from converting the territories of Indigenous Peoples into the soundest possible assets base in corporate portfolios, with sizeable profits arising from the commercial exploitation of the biodiversity and mineral wealth of these lands. Considerable value is added by the actual displacement, which disempowers Indigenous decision-makers, leaves large populations available for cheap

labour, and dismantles the traditional structures protecting Indigenous knowledge, leaving it vulnerable to plundering.

The actions and policies of the World Bank, ADB, and MDoNER have proven this assessment accurate in the two years following the FERN-supported regional technical workshop.

Grassroots Campaigns and Civil Society Mobilizations

Net Present Value of Forests Campaign

Seeking market-based or public finance models for valuation and payment of what is essentially a regenerating, self-sustaining, appreciating asset (the most accurate definition of a forest using economic terminology) is inherently flawed. Public development enterprise has to be "economically viable" — in other words, in the current economic framework, it must meet the demands of a globalized, liberalized market. At the same time, it has to make sense, serve the interests of national public finance, and be in accordance with those economic policies, priorities, and models to which the national government has committed. This balancing act requires a certain economic creativity in order to work.

"Net present value" (NPV) is a standard method for financial evaluation of long-term projects, and figures prominently in the economic evaluation of Clean Development Mechanism projects. A "discounted valuation," NPV is also called Net Discounted Revenue or "net present worth,"[31] and entails a process in which,

> the future stream of benefits and costs [are] converted into equivalent values today. This is done by assigning monetary values to benefits and costs, discounting future benefits and costs using an appropriate discount rate, and subtracting the sum total of discounted costs from the sum total of discounted benefits.[32]

The NPV approach may not be applicable to forests as perceived by Indigenous and Tribal Peoples since it defines forested lands primarily as a devaluable asset, as it would a human-made artefact or a piece of machinery

[31] An economic analysis based on the principle of assets undergoing "depreciation" over a period of use. This has been a process initiated by a Supreme Court of India ruling.

[32] See *T.N. Godavarman Thirumulpad Versus Union of India*, WP 202/1995 (2005.09.26), Valuation of forests.
http://www.elaw.org/resources/text.asp?id=3009 (Accessed January 18, 2007).

– a forest is a "resource" that will be "used up." This concept is based on, if anything, a colonial model of forestry. Further, even if this evaluation model could be agreed upon, it houses the unsupportable assumption that forest lands can be "discounted" as a project — in other words, it claims that as forests degrade over a period of time their value will depreciate. However, no evidence exists to suggest that lands (including forested lands) depreciate without there having been industrial-mode stripping; on-going warfare; and/or substantial contamination through industrial or nuclear waste, effluent dumping initiatives, or large-scale intensive agro-chemical use.

These kinds of "cash flow" models do no acknowledge that forests may naturally regenerate, or that productivity may actually increase, without the site being actively (and often expensively) managed, nor do they account for subsistence or livelihood (either to the local community or others). As a result, such an approach not only substantially undervalues the "cash income" or its equivalent – it fails to even approximate it. How is the all-important "discount rate" of NPV analysis determined with forested lands belonging to Indigenous and Tribal Peoples? How can the cost of borrowing, which is used as the discount rate when analyzing a major purchase decision (such as forest lands), be quickly determined and accurately estimated? This is especially difficult given that the lead-time and gestation period for most forest conversion projects increases exponentially, varying from the initial planning estimate, with the project's size.[33]

The NPV approach has resulted in an overwhelming majority of submissions from state governments and their agencies seeking "exemption" or further discounting. Another public finance principle posited by the state of Sikkim representatives at the Fourth Public Hearing goes to the extent of claiming that NPV levies merely shift money from one department to another. This makes no sense when one considers that most, if not all of the departments are implementing projects and schemes that are meant to serve the public interest (in intent, at least, if not always in practice).

This model also raises many other questions. How is this analysis linked to afforestation costs, as it is seen as an "investment project" arising from the "cost of purchase" of naturally forested goods and their conversion to "another purpose"? Is the NPV per hectare of forests, seen from the financial perspective of an afforestation project, actually the discounted valuation of afforestation per hectare in the state? Is the figure for the net present value established as the worth at the start of the project, or the net

[33] For example, observe the rise in costs of the Tehri and Narmada dams.
See Bharat Dogra, "India: Private Hydel Project on Naramda River Halted," (Inter Press News Service: June 20, 2006). http://www.corpwatch.org/article.php?id=13756 (Accessed January 18, 2006).
See also http://www.ox.org/lists/html/dam-1 for more information.

cash flows generated from the project? For that matter, what is the project being considered? Is it forested land conversions resulting in electricity generation and its tariff levy? Or is it the resulting tourism potential of game reserves, and the fishing revenues of reservoirs? There are many inexplicable aspects of this process of evaluation, making the model itself prone to exploitation.

The key problems in comprehending the value of land as an economic resource must be considered; how these are to be addressed is a far broader issue than is currently being considered. One substantial approach, submitted to the Expert Committee on Net Present Value of Forests, attempts a reasonable and fair assessment of real value. It asserts that real value should be considered a fair assessment only when it at least approximates all benefits of an existing asset to all rights holders and stakeholders, direct or remote. When assessing for the purpose of diverting the asset in question, it calls for a fair comparison with the benefits received by all these rights holders and stakeholders, both as individuals and as a group. Therefore, if forested lands (and the forests themselves) are to be assessed for diversion of use, both the totality of their existing value and the totality of their productive value after diversion must be approximated. While no numerical value was assigned to any benefit in this case, the submission looked at a fairly broad range of rights holders and beneficiaries by identifying the sectors necessary for the accurate pricing of benefits.

Action Committee Against the Tipaimukh Project

The Action Committee Against Tipaimukh Project (ACTIP) is a collective of almost fifty different community-based Indigenous Peoples, women's, and youth organizations who have come together with a single purpose: to oppose the building of a high dam over the Ruonglovaiso confluence at Tipaimukh, in Manipur. While this dam project is not an actual CDM sponsored project, it bears many similarities to some of the projects currently registered as "CDM certified." An examination of this movement provides a good idea of what forms of resistance future CDM activities in India may inspire.

The following text comes from the ACTIP press release in the Sangai Express, from July 10, 2006:

> Citing several likely adverse impacts, the Zeliangrong Union (Assam, Manipur and Nagaland) has reiterated its demand to scrap the Tipaimukh Dam Project. In a memorandum submitted to the Chairman of the Parliamentary Standing Committee on Information and Technology, Nikhil Kumar Choudhury, it observed that the project would jeopardise human rights, indigenous assets, environmental and ecological balance, traditional and cultural heritage, flora and fauna and socio-economic conditions in addition to inducing devastating seismic activities. Referring to the Loktak project which has failed to benefit the people of Manipur in any form apart from the meagre 27 percent of the 89 MW of power currently produced by the hydro-electric project, it noted that jobs, compensation, rehabilitation and other liabilities still remained unfulfilled despite loss of thousands of hectares of agricultural land, large scale displacement, environmental degradation, etc., due to the project. As such, the Union Government ought to rescind the earlier approvals including the [memorandum of understanding] signed between [North-Eastern Electric Power Corporation Ltd.] and the Gov't of Manipur. Moreover, the Tipaimukh project must be scrapped, observed the representation.[34]

Representatives of nearly every community in Manipur, including women's and youth organizations, students unions, and Indigenous leaders and organizations, supported an open discussion/meeting and action programme on the Tipaimukh Dam (the report of which can be found as Annex I to this case study). Again, while this specific dam is not a registered CDM project, many of the motivations, perspectives, and demands expressed by the Action Committee apply to CDM projects of a similar nature.

Women's Mobilizations

The mobilization of women, especially in long-term campaigns, is always challenging and rarely occurs before livelihoods and actual survival are openly threatened. Women are already heavily burdened in the domestic and subsistence agricultural spheres, as well as in the primary education and socialization of children. In the NER, this is complicated by the environment of economic transition, conflict, cultural dislocation, and the effects of patriarchy (felt differently by different Indigenous groups, depending on

[34] "ACTIP Press Release" in *The Sangai Express* (July 10, 2006).

traditional gender roles and the extent to which they are influenced by the dominant Hindu-Islamic culture). When effectively engaged, however, women become the community's backbone, showing immense strength of purpose in the face of adversity and persecution, and integrity in the face of corruption. Individual leadership, even among women, is less plastic and more vulnerable to deal-making, so it is important to address women as a group, with special, common interests. Kinship ties in traditional women's communities also support the raising of resources for the struggle, and simultaneously open non-confrontational avenues for collective bargaining with authorities in difficult situations.

The Indigenous Women's Learning Partnership's (IWLP) training and mobilization programme (affiliated with the International Women's Learning Party) was developed with the understanding that women's vulnerabilities, issues, and concerns in development and displacement are substantially different from those of men. Over a period of a year and a half, nine IWLP workshops were conducted in two states of the NER (Assam and Manipur), involving various Indigenous groups, and attended by women from sixteen to sixty-five years of age. These workshops examined the impact of displacement on women and women's lives, envisaging a stronger role in civil society movements for female community leaders, and creating a space for women's groups' effective participation in platforms of campaigning and advocacy.

The workshops used a case study relevantly similar to CDM initiatives: the controversial Lower Subansiri Hydroelectric Power Project (LSHEPP). The women discussed the case and determined that construction of the plant and dam at the site would consume forests and wetlands, have significant downstream impacts, and destroy the natural resources essential for the livelihoods and food security of present *and future* generations living in local communities. They also discussed the irresponsibility of financing bodies, including the World Bank, the ADB, and the National Hydroelectric Power Corporation and Life Insurance Corporation in India. Useful skills for action, networking, and activism were also workshopped, along with those deemed valuable for the future in general (including consensus building and decision-making, sharing of decisions, tolerance for different views and for others' mistakes, and apportioning of responsibility for implementation and impacts.

The workshops helped to mobilize 5,000 women for the first rally on Indigenous women's rights to resources and land in the NER, and women's participation is reported to have steadily increased since. The IWLP report to its donor/partner organization (the Women's Learning Partnership USA) notes that "Most of all women realized and were encouraged by this

realization that a peoples' campaign needed women in leadership roles as much as it needed men."[35]

Law, Policy, and the Indigenous Response

The controversial, albeit substantially watered down *Declaration on the Rights of Indigenous Peoples* was, not surprisingly, supported by India in the process of its acceptance by the United Nations' Human Rights Council.[36] While minimum standards enunciated in this document are substantially reduced from those enshrined in the *Universal Declaration of Human Rights* (while also denigrating the status of nations) this support is not entirely unexpected, given the geo-political realities of successor states and their economic concerns.

India's internal policy efforts to haphazardly bring the "disadvantaged tribals" into the mainstream reflect an equally ambiguous attitude toward the sovereignty, self-determination, and consequent control over natural resources of Indigenous Peoples.[37] This, coupled with the appalling "Tribal Policy" debated over the last two years, discloses the country's real intentions and attitudes: the domestication of forests and their life forms, and the occupation of the lands for agriculture (even if of trees). The draft *Scheduled Tribes (Recognition of Forest Rights) Bill* (2005) is an effort by the GOI to impose standard land ownership regulation, revenue, and territorial sovereignty laws in areas that have typically resisted these paradigms in the interests of conserving Indigenous control and management systems.

The draft Bill provides some recognition of the land rights of forest-dwelling "Scheduled Tribes" (FDST), including those living in national parks and sanctuaries. It allots nuclear families who have occupied the land since October 25, 1980 a maximum of 2.5 hectares. Provisional rights to this land would last five years; if the family is not relocated (with "compensation") within that period the land becomes their permanently. The bill also outlines certain other forest rights, including occupation, self-cultivation, and the use of minor forest produce. The *Gram Sabha*[38] "is empowered to initiate the

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[35] Taken from statements from the Women's Learning Partnership for Rights, Development, and Peace. For more information, visit their website at http://www.learningpartnership.org/partners/india (Accessed January 18, 2007).

[36] See the full text of the Declaration at http://www.unhchr.ch/huridocda/huridoca.nsf/(Symbol)/E.CN.4.SUB.2.RES.1994.45.En?OpenDocument (Accessed January 18, 2007).

[37] Based on the Draft Tribal Bill of 2006. For the full text, visit http://www.tribal.nic.in/finalContent.pdf (Accessed January 18, 2007).

[38] "Gram Sabha is a body consisting of persons registered in the electoral rolls of a village or a group of villages which elect a Panchayat [council]." Government of Assam,

process of determining the extent of forest rights that may be given to each eligible individual or family."[39] Critics sympathetic to Indigenous concerns (including environmental analysts) have concluded that the draft bill has the following problems:

- There are no reliable estimates of the likely number of eligible families […]
- If FDSTs […] are not relocated within five years, it could lead to loss of forests, which are crucial to the survival of certain species of wildlife. Large-scale relocation, on the other hand, could result in possible harassment of FDSTs.
- Communities who depend on the forest for survival and livelihood reasons, but are not forest dwellers or Scheduled Tribes, are excluded from the purview of the Bill.
- The Bill specifies October 25, 1980 as the cut-off date to determine eligibility. However, it does not clarify the kind of evidence that would be required […] to prove their occupancy.
- Terms such as 'livelihood needs' have not been defined. This could lead to litigation and delays in implementation.[40]

Clearly, there is substantial political confusion as to whether this piece of legislation is meant to address all Indigenous Peoples of India, using an overarching legal framework, or merely enunciate the access of forest dwellers (a complex of sub-categories in Indian administrative classification)

Panchayat and Rural Development Department, "Panchayati Raj." http://pnrdassam.nic.in/dibrugarh/drda/panchayati_raj.htm (Accessed March 19, 2007).

[39] Akshaya Mukul, "Politics comes in way of tribal Bill," *The Times of India Online,* (Times News Network: August 12, 2005).
See also Valmik Thapar, "The tribal bill: Moving beyond tigers..." *The Indian Express*, (India: October 21, 2005).
http://www.indianexpress.com/full_story.php?content_id=80422 (Accessed January 18, 2007).

[40] Akshaya Mukul, "Politics comes in way of tribal Bill," *The Times of India Online,* (Times News Network: August 12, 2005).
See also Valmik Thapar, "The tribal bill: Moving beyond tigers..." *The Indian Express*, (India: October 21, 2005).
http://www.indianexpress.com/full_story.php?content_id=80422 (Accessed January 18, 2007).

to forest resources. This confusion may well work strongly against the rights of all of these marginalized peoples. Indigenous Peoples are well aware of this, and of the intent of this act of policymaking, undertaken without regard for the views they have articulated through civil society representatives and Indigenous leaders.[41] The regional implications for forests, other natural resources, and the nexus between water and rivers are also clear.[42]

Resettlement and Rehabilitation

As many of the proposed CDM projects will necessitate the displacement of Indigenous and other local communities from the appropriated land, there are many relocation/resettlement issues to consider. While the primary intent is certainly to avoid such displacements entirely, there are numerous details which must be considered in those cases in which displacement proceeds despite community opposition.

In 2001, the National Human Rights Commission (having been petitioned by the National Committee for Protection of Natural Resources) announced that provisions for development-induced displacement should be brought under the *Land Acquisition Act*. The Commission found that the piece of draft legislation that had caused the Committee's initial concern – the *Land Acquisition (Amendment) Bill*, had actually already been finalized by the GOI, and was in the process of being considered by the Cabinet. Another policy document dealing with resettlement and rehabilitation was still under consideration – the bill itself made no provisions for this issue at all. The Commission's findings were articulated as follows:

> The Commission expressed the view that it was desirable to incorporate the rehabilitation and resettlement (R&R) package in the *Land Acquisition Act* itself [since] an I.L.O Convention, to which India is a party, provides for the protection of rights of indigenous and tribal people. In addition, the incorporation of an R&R package in the law will ensure the R&R of Project-Affected-People in a systemic manner. The provision for R&R in the law itself will help to avoid litigation and consequent delays and prevent cost overrun of the projects. Once the R&R

[41] Taken from the position statement of the North-Eastern Regional Assembly of Indigenous and Tribal Peoples Organisations with allies on the draft national policy on tribals, June 2-4, 2004 in Village Akajan, Dhemaji, Assam.

[42] Centre for Organization Research and Education, "Concerns and issues from the North-East region of India regarding Forests, Wetlands, Water Courses and all other natural resources of the Indigenous Peoples of the region," (India: June 30, 2005).

> package is provided in the law, there will be uniformity in dealing with the cases by the Courts. The R&R facilities should be provided in advance, before actual acquisition of land takes place. The Commission also noted that, in a number of cases, land was acquired in excess of that which was required, adversely affecting the land holders on the one hand, and wasting the resources of the State on the other, as the excess land was not put to use by the project authorities. A properly drawn project document, with estimates of expenditure involved in R&R, would curb this tendency. Further in the interests of transparency and full information to the people likely to be affected by a project, a Committee consisting of representatives from the Government, the industry/agency for which land is proposed to be acquired and the project affected people, should have detailed consultations before the land is acquired.[43]

As of October 2006, the Government of India has been highly pressured to promulgate new legislation on rehabilitation. The new bill is even more "liberal" than the previous one; while extensively engaging in conciliatory rhetoric, it does not address the real issues of involuntary displacement in a country with such a high population density.

Recommendations

The response of Indigenous Peoples to the projects described in this case study can appropriately be extended to all initiatives which entail Indigenous groups' loss of lands. Indeed, they are applicable to all communities with land-based livelihood strategies, and those who have traditionally lived and flourished on the land. Given that territories are being (and will continue to be) appropriated – with or without free, prior and informed consent – it is clear that there must be a set of ethical legal and economic principles from which compensatory mechanisms and rates may be derived. Further, these derivations must be useful in each specific instance of appropriation.

Despite the rhetoric, it is inarguable that the carbon market has put a cash value on the survival of species of flora and fauna, and of the Earth itself. Those who are the first to be sacrificed at the altar of commercial expediency must, at the very least, be permitted to reap the limited benefits of commercial justice and spared the price fixing and coercion that is a typical

[43] People's Union for Civil Liberties, "NHRC News: Commission calls for assistance for people displaced by land acquisitions," in PUCL Bulletin (India: June 2001).

component of government land acquisition processes under colonial and neo-colonial law.

The following recommendations were presented to the Expert Committee mandated to create a standard compensation rate for development-induced loss of forests and forest access, taking into account their value in carbon sequestration. These recommendations were presented by Indigenous Peoples' representatives and organizations.

Recommendation 1

In order to effectively and fairly decide the Net Present Value of forests and forested lands, the first requirement must be an appropriate, common (international) legal framework. This framework must recognize the full range of rights holders and stakeholders in each of their various sectoral identities and roles, as well as their concomitant responsibilities to the collective and the rights deriving therefrom. The levy of Net Present Value shall not amount to a disclaimer of any property or other rights or ownership of peoples/individuals, whose right to free, prior, and informed consent shall be recognized and respected.

Only then may a fair and reasonable estimate of monetary compensation or equivalent dues or receivables be derived. This must not be calculated according to the market alone, but also based on Indigenous entitlements and claims, including compensation of historical wrongs, spiritual losses, global heritage, and other factors determining or influencing value and price. Liabilities and claims, and the extent of these pertaining to each rights holder and stakeholder, should only then be clearly and appropriately determined.

Unrestricted, effective, unbiased (free) negotiation, arbitration and enforcement mechanisms and platforms, such as those the United Nations and the international courts attempt to initiate, are a simultaneous requirement, for the efficient resolution of dissent and conflicting claims.

Recommendation 2

Essential elements to be integrated into the quantification of rehabilitation, reparation, or restoration and compensation must work to revise the computation of Net Present Value to include the following components, to be assessed at reasonable market value and current pricing standards:

- The value of the asset itself to the collective in entirety, including its value in identity;
- Benefit sharing or royalties paid to individuals and communities evicted/displaced by projects implemented on converted lands;
- The value of the asset to each individual deriving benefit;
- The value of the intangible and cultural dimensions of the asset to the collective;
- The value of the intangible and cultural dimensions of the asset to each individual;
- The cost of provision and realization of an equal and acceptable replacement, or an equivalent deemed acceptable;
- The restoration (at acceptable ratios of equivalence) or provision of insurance against derogation of the value of the deemed corpus of collective trust;
- Insurance against contingencies of loss or damage to the trust corpus, or resulting loss or derogation of benefit to the collective or individuals;
- Inclusion of terms of reversion with provision for restoration or replacement, at acceptable assessment and terms of equivalence;
- The first option of long lease on the same terms as acquisition; and
- Demonstrable and direct positive value to the retardation, adaptation, and recovery of climate change and biodiversity erosion.

Recommendation 3

Parties responsible for implementing projects that require forest or forest lands conversion (including traders, investors in environmental or other goods/services, and the military, but excepting community-initiated, community-controlled, and exclusive benefit access conversions) will be individually or collectively liable, fully and solely, for reparation, rehabilitation, and compensation of social and environmental/ecological costs

incurred in relation to any aspect of such projects. In joint projects where one party is the community collective or equivalent, the entire onus of assuring and paying liable claims rests on the non-community partner. This liability will require assurance of honouring prior to sanctioning the project, whether by certified deposit or appropriate instruments of indemnity (preferably insurance) in favour of the several and collective entities eligible to receive such reparation or compensation.

Every affected entity, whether individual or collective, will be inalienably entitled to receive full compensation on demand, according to legislation and policy regulation put in place after a due and thorough process of consultation and consent. Abrogation or breach of the terms of agreement on the part of the liable entity/entities will constitute grounds for punitive measures including: fines minimally equivalent to the costs of the breach or abrogation to the injured party/parties; the costs of recovery of dues; and compensation for injury. Criminal breach of trust will also be applicable under relevant or specifically developed sections of the *Indian Penal Code*.[44]

Conclusion

It is evident that the invasive and mythic carbon market can no longer be tolerated; nature and human rights (in the broadest sense of the right to survival) are clearly compromised by it. "Additionality" is used as an excuse for accelerated and intensified use of destructive technologies, and is another fiction that must be exposed as a rapidly disintegrating shield for "business as usual." It is now manipulated in order to capitalize on commercially-damaging panic and notions of elasticity and the transferability of damage.

A truism so evident that it appears ridiculous to have to state is that life forms on this earth are carbon-based. Each and every individual living entity, each and every species, has existed with one primary bio-chemical imperative: to trap more free carbon than it generates. The only exception is the industrialized human. We have released massive quantities of carbon – carbon that it took millennia, even eons, to trap in fossil fuels. The planet is barely fit for the survival of those of us who exist. The epidemic illnesses that proliferate, attacking humans and those species we have chosen to rely on or contact most, demonstrate this incontrovertibly. Perhaps the Earth is trying to eliminate us before we irretrievably compromise bio-systemic

[44] Taken from the technical submission from the Centre for Organisation Research and Education to the Expert Committee on "NPV to be charged on forest lands diverted for non-forestry purposes," constituted by the IEG in pursuance of Supreme Court Directive in IA No.566 in *Civil Writ Petition C202* of 1995, Submitted March 1, 2006.

viability right across the globe. Perhaps we are breeding these epidemics ourselves — a suicidal response to our own self-destructive tendencies.

The truth is that we have irrevocably damaged the Earth's compensatory and regenerative capacity, and the reality is all around us. We have only to collectively decide whether we wish to survive beyond a mere few generations and move forward. Indigenous Peoples' struggles to retain ancestral lands and traditional land use practices are, in fact, the most sound, most promising beginnings of the regeneration of the Earth and survival of humans. They should be seen as such, and not as impediments to "development."

Annex I

Open Discussion on the Tipaimukh Dam Project: Report of the Organising Committee

We are gathered here at the State Guest House, Conference Hall from 5-6 July 2006 for a two-day Open Discussion on the Tipaimukh Dam Project organized by the Action Committee against the Tipaimukh Project1 (ACTIP) to review the 1500 MW installed capacity Tipaimukh Dam Project, a 162.8 meter high dam proposed by the Shillong-based North Eastern Electricity Power Corporation Ltd. (NEEPCO) on the Barak River to be located around 500 metres downstream of the confluence of Barak and Tuivai Rivers near Tipaimukh in the Manipur State of India.

The Open Discussion aimed to bring into accountability the State Government machinery and the power project implementing agency, the North-Eastern Electric Power Corporation Ltd. (NEEPCO), and other funding institutions of the injustices inflicted upon the people of Manipur and the North-East due to undemocratic and arbitrary implementation of river valley and water resource extraction projects.

The Open Discussion committed itself to persuading the Government to involve the people of Manipur and the North-East region in a democratic and transparent discussion in the planning and decision-making for water and hydropower policies, and other such projects, to secure the livelihood and the spiritual and physical survival of the present and future generations of the people of the region.

This Open Discussion:

Recognizing the people's wishes against the Tipaimukh Dam Project as demonstrated by the massive rally on 3rd April, 2006,

Reaffirming and upholding the *Tamenglong Declarations* on the Tipaimukh Dam, in May 2006 by the people's conventions,

Further reaffirming the Rally against the Tipaimukh Dam Project held in New Delhi on 7th June 2006, and memorandum submitted to the Prime Minister of India, we hereby declare the following:

We are deeply concerned that the Prime Minister of India's "2012 Power for All" mission envisages the enslavement of the North Eastern region of India as the 'future powerhouse of the nation.' It has led to a national ranking study listing of 168 hydropower projects in the Brahmaputra and

Barak River Basins in the region, having a combined installed capacity of 63,000 MW.

We recognize that the undemocratic, anti-people, anti-environment and anti-life agendas of States, political lobbies, corporations and international finance institutions continue to lead to large dam construction, particularly in the territories of Indigenous Peoples and ethnic minorities, for which free, prior and informed consent has never been obtained. The use of repressive methods and violence, including that of the military, to implement these projects violates their human rights and threatens their survival including the sustenance of flora, fauna and biodiversity.

We view with great concern that existing dams in our region like the Kaptai Dam in the Chittagong Hill Tracts of Bangladesh, the Gomuti Dam in Tripura and the Ethai Barrage of Manipur in India have brought untold hardship and misery for many decades to the affected Indigenous Peoples and communities on whose lands these dams have been built; and that the issue of displacement, resettlement and rehabilitation have not been appropriately addressed to date even after many decades of suffering.

We strongly assert that the absolute and inalienable rights of the peoples and communities to their lands, livelihood base, cultural and natural heritage - such as water, rivers, wetlands, forest and minerals - must be recognised and affirmed.

We believe that the right to a free and prior informed consent must be an absolute requisite for all decisions, debates, discussions and negotiations concerning developmental projects proposed in Indigenous Peoples' lands and territories.

We solemnly acknowledge and affirm the significant progress in the struggles, and experiences, consensus of position, recommendations and action plans of the world's dam affected peoples and communities, and their allies who have consistently opposed destructive dams, fought for reparation, and the restoration of rivers and watersheds for true sustainable development for generations to come.

We, therefore, consider that:

1. A primary condition required for the setting up of dam projects, such as the Tipaimukh Dam Project, must be to involve the peoples who are at risk through a participatory, democratic, transparent and accountable public consultation process where all sections of the populace can participate of their own free will under the universal principal of free and prior informed consent;

2. The absence of meaningful consultation with and free and prior informed consent of the Indigenous Peoples to be affected by the

Tipaimukh Dam Project clearly contradicts universally accepted principles, the United Nations Declaration on the Rights of Indigenous Peoples and the strategic priorities developed by the WCD.

3. The Tipaimukh Dam Project will permanently submerge more than 275km^2 in Manipur and Mizoram, and displace thousands of Indigenous and Tribal groups like Zeliangrong, Hmar and Mizo people, uprooting them from their age-old traditional occupations and cultural heritage.

4. The massive submergence of about 90 villages and/or their vital gardens, agricultural lands, roads and ways, and sacred cultural sites will cause serious consequences for the affected peoples, depriving them of the inalienable rights to their ancestral lands and forests without provision of viable alternative sources of livelihood and uprooting their cultural foundations established over hundreds of generations.

5. The Tipaimukh Dam Project will impede the natural flow and conditions of the Barak River and its Basin blocking indigenous fish migration; destroying upstream forests, habitats, lands and natural heritage, and could cause the permanent disappearance of precious flora and fauna, species that could have great medicinal and commercial value.

6. The Tipaimukh Dam Project was entirely developed and approved without informing the Government of Bangladesh, without involving its people in any meaningful way, without any assessment of the downstream impacts of the dam, nor with any incorporation of genuine concerns. As such, the project represents a clear and deliberate deviation from usual practices, as well as a gross violation of the co-riparian rights of Bangladesh as the Barak River is an international river.

7. The construction of the proposed high dam at the present site will place it in one of the six most highly seismic zones in the the world, directly above the long recognized Taithu Fault line. Such a construction project will only serve to aggravate the areas frequent earthquakes, increasing the possibility of a major Tsunami-like disaster and thus endangering the lives, land and forest of both India and Bangladesh.

8. The World Commission on Dams (WCD) explicitly identified the demerits and shortcomings of large dams in terms of flood control,

hydroelectric power generation, destructions to the environment and the ecosystems in both upstream and downstream regions.

We, therefore, unanimously demand that:

a. The Government of Manipur actively and urgently make every effort to initiate a dialogue wherein the peoples' concerns about the proposed Tipaimukh Dam can be deliberated in a free and fair manner, and thereby to explore the avenues to address these concerns appropriately and satisfactorily;

b. The Government of Manipur withdraw the memorandum of understanding signed with the implementing agency, NEEPCO, on the Tipaimukh Dam Project since it amounts to betrayal of the peoples wishes and concerns;

c. The Government of India engage in a thorough, comprehensive and impartial review of the implementation of the standing agreements concerning the sharing of international water between Bangladesh and India in the context of international norms towards respecting co-riparian countries' concerns and interests, with specific reference to the proposed Tipaimukh Dam Project;

d. The North-Eastern Electric Power Corporation Ltd. (NEEPCO) scrap the proposed Tipaimukh Dam Project in the larger interest of the people of India and Bangladesh.

We are committed to:

1. A closely coordinated people's campaign against the proposed Tipaimukh Dam Project;

2. A wide and accessible public dissemination, to the local and regional civil society, and international community of all relevant and critical information regarding the proposed Tipaimukh Dam and its impacts;

3. An independent and informed comprehensive investigation, looking at the environmental, social and cultural aspects, to study the upstream and downstream impacts of the Proposed Tipaimukh Dam Project;

4. To promote and actively increase people's awareness and concerns on the impacts of the Tipaimukh Dam, and also other dam development projects in the [NER] such as the Lower Subansiri Hydroelectric

Project, Ethai Dam of Loktak Hydroelectric Multipurpose Project, Middle Siang (Siyom) Hydroelectric Project, Teesta Hydroelectric Projects, etc.

Imphal, signed on 6 July 2006[45]

[45] Statement from the ACTIP Organising Committee, presented at the State Guest House, Conference Hall, Imphal, July 5, 2006.

The Ecuador Case Study

Sustainable and Effective Practices under Guidelines for Land Use, Land-Use Change, and Forestry

Johnson Hugo Cerda Shiguango

List of Acronyms

CGC:	Compañia General de Combustibles
CODENPE:	Council for the Development of the Nationalities and Peoples of Ecuador
CONAIE:	Confederation of Nationalities of Ecuador
FICSH:	Interprovincial Federation of the Shuar and Achuar Peoples
FINAE:	Interprovincial Federation of the Achuar Nationality of Ecuador
FIPSE:	Interprovincial Federation of the Shuar Peoples of Ecuador
GPS:	Global Positioning System
IACHR:	Inter-American Court on Human Rights
IPCC:	Intergovernmental Panel on Climate Change
IPO:	Indigenous Peoples' organization
NAE:	Nationality Achuar of Ecuador
UNFCCC:	United Nations Framework Convention on Climate Change

About the Author

Johnson Hugo Cerda Shiguango is a member of the Kichwa community of Limoncocha, Ecuador, in the Ecuadorian Amazon. He has participated as a member of the Indigenous Amazonian Parliament for three terms, as a representative of the Indigenous communities from the Orellana and Sucumbios Provinces. He has worked with several organizations from the Ecuadorian Amazon, including the Comunas Federation Natives Union of the Ecuadorian Amazon, and the Kichwa Organizations Federation of Sucumbíos Ecuador. He also worked for four years in support of the CONFENIAE (the Confederation of the Indigenous Nationalities of the Ecuadorian Amazon). Mr. Cerda Shiguango has supported several public institutions such as the Secretaría Nacional de Asuntos Indígenas y Minorías Étnicas, the current Council for the Development of the Nationalities and Peoples of Ecuador, the Ministry of the Environment, and the Institute for Ecodevelopment.

At the international level, Mr. Cerda Shiguango worked for the Amazon Alliance for five years, at its headquarters in Washington D.C., where he coordinated activities in support of Indigenous Peoples from nine countries of the Amazon basin. He is trained academically as a psychologist and has graduated from law school. Currently, he works in support of local communities in Ecuador and participates in several international fora that address environmental issues related to the rights of Indigenous Peoples. Additionally, Mr. Cerda Shiguango is involved in supporting the World Wildlife Fund for Nature, in connection with two initiatives concerning protected areas in the United States, and is also involved with the Canadian organization Rights and Democracy (International Centre for Human Rights and Democratic Development).

Contents

Executive Summary

In Ecuador, starting with mobilizations in 1992 to commemorate five hundred years of Indigenous and popular resistance, a new phase in the struggle of Indigenous Peoples began. This phase has served to strengthen Indigenous Peoples' organizations (IPOs) throughout the country. The process of writing national proposals has been undertaken ever since, and has benefited both Indigenous Peoples and other marginalized sectors of Ecuadorian society – in fact, in 1995 a new political movement sought to include Indigenous proposals in the Constitution. One of the most important actions during this period was the 1998 ratification of the International Labour Organization's *Convention No. 169 concerning Indigenous and Tribal Peoples in Independent Countries*. As a result of this action, undertaken by the National Constitutional Assembly, several articles on the rights of Indigenous Peoples were added to the Constitution.

Although some rights of Indigenous Peoples have been recognized, serious conflicts and issues remain unresolved in the Ecuadorian Amazon, largely due to the government's interest in developing oil and other industries at the expense of Constitutional law. One key example is found in the lumber companies that seek access to Indigenous territories and protected areas for the purposes of illegal exploitation.

Oil exploration and extraction began in the northern Ecuadorian Amazon in the 1960s; since then, the resulting network of access roads has led to massive colonization and a decrease in Indigenous territories. A lawsuit filed by Indigenous and peasant settlers against Texaco Oil, now known as Chevron Texaco, clearly shows the disastrous environmental effects oil companies have had on the northern Amazonian region. Due to the negative experiences of their neighbours in the north, the inhabitants of the central Amazon have learned to oppose any encroachment by oil companies into their territories. The Ecuadorian government has nevertheless invited bids for oil exploitation in these new areas.

It is evident that land-use change can have unfortunate consequences on traditional forest management systems; therefore, giving Indigenous Peoples incentives to strengthen their systems can be beneficial for the entire country. In some cases, the techniques of participatory community mapping coupled with current technology determine how resources are used. This, in turn, has led to territorial organization, zoning, and the development of future plans for the Amazonian nationalities.

One focus of this case study is Pastaza Province, located in the central Ecuadorian Amazon, which is ninety-five percent tropical rain forest (including land where Indigenous Peoples continue to practice their

traditional cultures and live in harmony with nature).[1] Indigenous communities in this region have developed alternative economic initiatives that reinforce and strengthen traditional knowledge. In order to face new threats to their rights and territories, these Indigenous Peoples have created strong alliances both among themselves and with local and foreign civil society organizations. Above all, the protection and sustainable use and management of tropical rain forests enhances international efforts to mitigate the effects of the changing global climate.

Introduction

National Precedents[2] and their Effects on Indigenous Peoples

Ecuador is a multiethnic, multicultural South American country, with an Indigenous population that is estimated to be forty-five percent of the national population, according to the Confederation of Nationalities of Ecuador (CONAIE).[3] In the Ecuadorian Amazon, there are approximately 200,000 Indigenous inhabitants, belonging to ten nationalities: Kichwa, Siona, Secoya, Cofán, Shuar, Achuar, Huao, Shiwiar, Zapara, and the Andoas.[4] Groups are designated as a "nationality" as a result of being registered with a state institution called Consejo de Nacionalidades y Pueblos del Ecuador (CODENPE), which handles Indigenous matters.

In Ecuador, Indigenous Peoples were recognized as nationalities in the 1998 Constitution. Among other entitlements consecrated in the Ecuadorian Constitution, Article 84, Section 5 confirms that it is the right of Indigenous Peoples to "preserve and promote their practices of biodiversity and environmental management."[5]

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[1] Verónica Duma Cevallos, "General Data of Pastaza" Visita Ecuador.com. http://www.ecuaventura.com/amazonia.php?opcion=datos&provincia=18 (Accessed January 11, 2007).

[2] Visit the following website for an interactive look at the Indigenous Peoples of Ecuador and the policies that affect them: http://www.codenpe.gov.ec/swf/Nacionalidades%20y%20pueblos.swf

[3] Visit their website, http://www.conaie.org/, for more information.

[4] See Article 84 of the *Political Constitution of the Republic of Ecuador*. Available online at http://pdba.georgetown.edu/Constitutions/Ecuador/ecuador98.html (Accessed January 11, 2007).

[5] Article 84, Section 5 of the *Political Constitution of the Republic of Ecuador*. Available online at http://pdba.georgetown.edu/Constitutions/Ecuador/ecuador98.html (Accessed January 11, 2007).

In the 1960s, representatives of Indigenous organizations of Amazonian nationalities organized to reclaim Indigenous territories that were, at the time, in the hands of large landowners and missionaries. Currently, seventy percent of these territories have been recovered and delimited, and many of the rightful owners now have title to the land.[6] The process to reclaim these territories continues, due to the fact that most of this land overlaps with protected areas, the majority of which were originally designated in the absence of consultation with Indigenous Peoples.

The threat from extractive industries, primarily oil and lumber companies, is one of the main problems affecting Indigenous territories in the Ecuadorian Amazon. Since the 1960s – the inception of the oil era – both Indigenous Peoples and the environment have suffered disastrous consequences. An internationally-recognized lawsuit has been filed against Texaco Oil, now known as Chevron Texaco, by northern Amazonian Indigenous Peoples and farmers.[7] After the filing, a New York judge transferred jurisdiction to Ecuador, and Ecuadorian judges are now hearing the case. Currently, as demanded by the lawsuit, inspection of oil extraction sites is taking place. An alleged compensation programme for exploited areas has been offered and, while it has not yet been implemented, it did have the support of the Ecuadorian Ministry of Energy and Mines. The oil industry has spread to the central and southern Ecuadorian Amazon, and now threatens the territories of several Indigenous Peoples. Because of this government-sanctioned threat, Indigenous Peoples have organized and defended their territories and natural resources against the expansion of these extractive industries.[8] Organizations of the nationalities of the south-central Amazon have developed several initiatives as alternatives to oil exploitation. These initiatives have also served to strengthen traditional knowledge, the culture of the Peoples, and the defence of their natural resources.

Description of Traditional Land Use and Deforestation Prevention Practices

The Kichwa Sarayacu Community

Pastaza Province is located in the central Ecuadorian Amazon and is made up of vast primary forests. The majority of these forests are located on

[6] CONFENIAE. http://www.ecuanex.net.ec/confeniae/ (January 11, 2007).
[7] See http://www.texacotoxico.com/ for more information on this lawsuit.
[8] See http://www.sarayacu.com/ for more information on the Inter-federational Committee of the Shuar Achuar Peoples.

the property of the Indigenous Peoples of Kichwa, Achuar, Shuar, Huao, Zapara, Shiwiar, and Andoas. The Sarayacu community is located about half an hour by plane from the city of Shell, in Pastaza Province (other travel options follow the river or dirt roads, and take several days). The Sarayacu Association is made up of six communities which are: Sarayaquillo, Chonta Yacu, Cali Cali, Shiguacocha, Sarayacu, and Teresa Mama. The population of the community is approximately 2,400, if the entire association is included. The township capital (a geopolitical division) has its county seat in the Sarayacu community.

Forest Management

Traditionally, the Indigenous Peoples of the Sarayacu community defined their own use of their territories. According to their vision, the forest is part of their culture, in a broader sense, therefore anything that affects the forest also affects their own special relationship with the land.[9] Each year, according to their traditions, families go into the forest for one or two months to assess the ecosystems and wildlife populations, and to perform spiritual ceremonies. It must be noted that intensive environmental education is practiced within families. Traditionally, the inhabitants of Sarayacu have a place called *tambo*, near the rivers within their territory, where the entire family gathers annually at a traditional *chacra* (food garden). Other families are not permitted to use the land – if they do, they are judged negatively by the community and penalized with between six and fifteen days of community service.

Within the ecosystem, the Sarayacu families control the use of outside chemicals that could affect the rivers. Traditionally, the families used *barbasco* (a natural poison) in small springs not only for fishing, but also as a way of bringing the family together.[10] The immense trees are considered a refuge for the spirits of the forest, as well as a place for birds and monkeys to reproduce. Protecting these areas is therefore of special interest. Reforestation is not just considered an effective practice to protect the forests but, more importantly, a way to sustain wildlife. The use of traps avoids the intense impact inflicted by modern shotguns on those animals, which transport seeds across the land and thereby help to maintain balance in the forest. Even with community efforts to support them, and perhaps as a result

[9] Interview with Marlon Santi, President of the Sarayaku indigenous community, 2006.
[10] Barbasco (*Lonchocarpus urucu*) is a chemically active plant native to the tropical forests of several South American countries. The active ingredients, rotenone and deguelin, are toxic, and can been employed as a piscicide – stunning fish, causing them to float to the surface, and facilitating their easy harvest.

of increasing population growth, wildlife populations have decreased. Therefore, within their own territories, the Sarayacu are establishing wildlife reserves, with designated areas where hunting is prohibited. The concept of 'reserves.' within the communities, often has the objective of setting aside an area for use by future generations, and not merely as a means to protect and manage the flora and fauna.

Forest Zoning

Zoning was initiated as a result of a externally-supported community mapping project. A team was assembled, comprising community workers who were trained in the management of the Sarayacu Association's natural resources. In the process specific zones were defined:

1) Community Reserves are areas in which complete protection is an absolute and hunting is strictly prohibited.

2) Hunting Zones are areas established for community subsistence use, under rules decided by the community assembly. Hunting here is limited to the provision of necessities for the family.

3) Farming Zones are areas adjacent to the community, used by families to plant their gardens. These gardens include medicinal plants and subsistence products, such as cassava, plantain, and sugarcane.

4) Extraction Zones are areas identified for the extraction of materials for construction of housing.

5) Residential Zones are areas set aside by the six communities of the Sarayacu Association, to be used for settlements and future population growth.

6) Riverside Zones incorporate areas known as a *tambos*, which are used for spiritual practices and environmental education by the family one month out of every year. The entire family participates by going to the Riverside Zone.[11]

According to Marlon Santi, the ex-president of the Sarayacu Association and an active member of the community, the community is now

[11] Interview with Marlon Santi, President of the Sarayaku indigenous community, 2006.

working on a wildlife management project, which will set aside certain areas of the forest for the tapir to reproduce under natural conditions. According to the Sarayacu web page,[12] the project started by monitoring a female tapir with a tracking device. This female gave birth to another female, which is now also being monitored. Through this project, it is hoped that communities will be able to track and capture tapir, and thereby have access to the protein needed in their diets. From other experiments with a captive tapir, data was gathered after the animal had adapted to its new ecosystem (which took several years). The only difference is that the experiments in this current programme are being performed in a controlled natural environment.

Traditional *Chacras*

The use of *chacras* (traditional swidden agriculture sites located in the forest, near homes) is extensive. These sites are biodiversity-nurturing areas, which favour the repopulation of the small, woodland-dwelling animals that help rejuvenate the forest. Women are more involved in establishing *chacras*, using traditional knowledge that has been handed down from generation to generation, while men generally lend support by clearing and cleaning vegetation. Since cassava is one of the most important elements of the traditional diet in the Sarayacu community, the entire family participates in spiritual ceremonies associated with the planting of this tuber in the *chacras*. In these ceremonies, the women sing special songs both at the moment of planting and during the general preparation of the seeds. It is important to note that cassava is also the key ingredient in a traditional beverage; and the entire process of preparing this drink, called *chichi*, involves showing respect for the land.

The Interprovincial Federation of the Achuar Nationality of Ecuador[13]

According to their own census, the Achuar population includes 5,000 individuals within sixty-four communities and nine associations located in Pastaza and Morona Santiago Provinces. They have approximately 700,000 hectares of territory already legalized, but have yet to receive land deeds for 133,000 hectares of their territory.[14] The Interprovincial Federation of the

[12] See http://www.sarayacu.com/tapir/
[13] See http://www.codenpe.gov.ec/achuar.htm for more information on this federation.
[14] Interview with Cristobal Callera, Vice President of Achuar Nationality of Ecuador (NAE), 2006.

Achuar Nationality of Ecuador (FINAE) is a representative organization of the Achuar People inhabiting the south-central Ecuadorian Amazon, near the Peruvian border.[15] Since 1995 FINAE has represented the Achuar, operating from its headquarters in the city of Puyo, Pastaza Province. Before the creation of this organization, the Achuar were part of the Interprovincial Federation of the Shuar and Achuar Peoples (FICSH), which had its headquarters in Sucia, Morona Santiago Province. Among the most important initiatives that FINAE has developed are the Airline Service Project, the Hotel Kapawi Tourism Project, and the Territorial Defence Project. Currently, this federation is known as the Nationality Achuar of Ecuador (NAE).

Community Mapping and Territorial Organization

During their land consolidation and ownership process, the Achuar collaborated with several communities in using a community mapping technique. Although their objective was to grant land deeds, this mapping was also useful for zoning. At this time, several communities are mapping the use of resources in order to determine how much land each Achuar family needs.

Rubén Tsamaraint, a young leader of FINAE, helped with the development of this mapping project, the objectives of which included autonomous development and self-determination. Mr. Tsamaraint has pointed out that this was accomplished in collaboration with other organizations such as the Shiwiar and Zapara Peoples, and with the support of the Pachamama Foundation and other institutions. This project came to an end in 2003, when the community members were granted title to their lands; however, a conflict persists concerning a security zone at the Peruvian border, even though Achuar communities inhabit this zone. An essential question asked during the mapping work was, "How do you want to envision the territory in the future?" It was decided that this project "would allow them to collectively manage their territories; it also served to identify their world vision, recognize their sacred sites, and avoid problems with their neighbours."[16] The use of modern equipment, such as a global positioning system (GPS) has given the community an understanding of the reality of their situation, and the Ecuadorian government an idea of the location of Indigenous communities. In this project each of the Achuar communities

[15] See http://www.codenpe.gov.ec/achuar.htm for more information on this federation.
[16] Amazon Alliance and CONIVE, "Amazon Experiences with Community Mapping and Territorial Defense."
Available at http://www.amazonalliance.org. (Accessed January 11, 2007).

belonging to FINAE developed a series of maps, to provide the federations and other related entities quick access to information about human and natural resources of the region.

The aim of the territorial mapping programme was to identify the resources of each region, including different biological and non-biological elements, using a combination of Achuar traditional knowledge and modern mapping systems (topographic maps and GPS). At this stage the territory, as well as names of the rivers, lakes, and geographic anomalies, were defined and identified in the Achuar language.

As a result of the participatory mapping programme, thirty-nine detailed maps were made, identifying soil types, swamps, rivers, boundaries, and roads. Additionally, twenty-two maps of different types of forest, hunting, fishing, and livestock zones were created.[17] One of the defined zones agreed upon includes an untouchable area, to be set aside for the community-managed protection of wildlife, and to serve the spiritual interests of local people.

Rules for Territorial Use and Management

Within the community there are regulations on the use of hunting instruments. Generally, two-meter-long hollow blow guns, made from palm trees, have been used, while the more aggressive form of hunting, employing rifles, has been prohibited. During community meetings, collective decisions were made regarding hunting rules and land use within collective territories; the resulting rules vary with each community. Many of the territories were marked off to meet the needs of each family within the community. Thus, mapping is only a means by which pre-existing land use practices were formalized. A typical problem area for local communities is land used for hunting. Generally, when there are not enough hunting areas in their own territory, people go outside the boundaries to other territories — making control more and more complicated. To avoid future conflicts, the communities are working on initiatives for wildlife management.

Traditional Management of *Chacras*

Chacras are usually temporary agricultural cites, utilizing the slash-and-burn method to plant crops with a short growing cycle, such as cassava, plantain, sugarcane, and sweet potatoes. Because they are temporary,

[17] University San Francisco of Quito, "Cordillera del Cóndor." http://www.usfq.edu.ec/1PARQUE/aspsoc.html (Accessed January 11, 2007).

community members are continually looking for new, small areas for their family *chacras*. In their traditional practices, the Achuar do not have *purina*, or paths, and have the small *chacras* typical of the Amazonian Indigenous Kichwas that are used for cultural preservation, hunting, and the gathering of medicinal plants. Red rocks are placed in each *chacra* to improve production of the principal crop, cassava. As with the Kichwa, Achuar women are the community members most involved in establishing *chacras*; men (whose primary activities are hunting, fishing, and fruit gathering) lend support in this task.

The Achuar construct their *chacras* up to about 3,000 meters from their homes and use them for eight or nine years.[18] They then move to another area for the same amount of time, and later return to a previously used area (after allowing it to remain fallow). During this nine-year process, the emissions resulting from the clearing of the forest are recaptured because the forest is allowed to regenerate. When *chacras* are established within their territories, they promote the multiplying of the small animals that are fundamental to the growth of forest flora, and which provide subsistence foods for families. None of the activities associated with the *chacras* are for commercial profit; rather, they are all designed for the community's survival. The communities do not spend time on intensive commercial activities; however, they do sell products that allow them to pay for medicine that they must buy from other areas. Some families have been encouraged by missionaries to get involved in commercial activities, such as raising livestock, but these practices disrupted their special relationship with the forest, and most Achuar abandoned such activity and allowed the forest to naturally regenerate in affected areas.

The fact that some communities are located deep within the jungle means that they are excluded from profitable agricultural activities (unlike those communities living close to roadways). In part, Indigenous culture in these communities thrives precisely because of their isolation. Currently, the greatest worry is the slow encroachment of extractive industries and the conflicts that their presence (and pressure tactics) triggers.

Benefits of Traditional Practices in Climate Change Mitigation

If we begin with the findings of the Intergovernmental Panel on Climate Change (IPCC), that emissions generated by the destruction of tropical forests account for between ten and twenty-five percent of all human

[18] Interview with Cristobal Callera, Vice President of NAE, 2006.

emissions, this leads one to pay earnest attention to the traditional practices of Indigenous Peoples.[19] The preservation of wooded areas in Ecuador takes place partly because there is no exchange between the economies of Indigenous and nearby non-Indigenous communities; this, in turn, strengthens Indigenous communities' cultures and traditional practices. These efforts involve preventing deforestation, thereby reducing the percentage of emissions caused by deforestation, and allowing forests to persist and naturally capture carbon. Therefore, the strengthening of Indigenous cultures ought to be a priority activity, carried out internally but supported externally. By protecting forests and controlling the entry of extractive industries, the community maintains clean sources of water and water resources, which stabilize wetlands in the region and make the rivers navigable.

Up to 2002, Ecuador produced approximately 188.3 million barrels of petroleum, of which 144 million barrels (representing 76.5 percent of the total) have been burned.[20] In economic terms, 2.9 billion dollars have been lost. Ecuador has 236 million barrels of natural gas in its reserves. Of the 2,300 metric tons produced daily, only 200 metric tons are processed. Indigenous Peoples are making a positive contribution to the global effort of preventing emissions by not burning natural gas in these new territories, and by attempting to prevent oil companies from gaining access to fragile lands.[21]

An IPCC report reveals that the percentage of emissions produced by deforestation is even higher than emissions from natural gas.[22] In spite of this, the contributions of Indigenous Peoples are not taken into account, nor even valued. Instead, their practices are taken for granted and considered "natural activities" that require neither incentives nor support. Interestingly, it has been observed that some conservation initiatives actually exclude Indigenous Peoples' territories, allowing no economic incentives on these lands, because it is assumed that Indigenous traditional practices *already* prevent deforestation.

The lack of roads into Indigenous areas prevents lumber companies from illegally accessing the territories. These lumber companies have destroyed the northern Amazon, and have caused serious conflicts in

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[19] Submission from Papua Guinea and Costa Rica FCCC/CP/2005/MISC.1 November 11, 2005. http://unfccc.int/resource/docs/2005/cop11/eng/misc01.pdf (Accessed January 11, 2007).

[20] Oil and natural gases are often burned (or "flared") in order to eliminate "waste" gases or other by-products that are considered too expensive to capture or retain.

[21] Fernando Reyes and César Ajamil, "Petróleo, Amazonía y Capital Natural" (Casa de la Cultura Ecuatoriana, 2005).

[22] Submission from Papua Guinea and Costa Rica FCCC/CP/2005/MISC.1 November 11, 2005. http://unfccc.int/resource/docs/2005/cop11/eng/misc01.pdf (Accessed January 11, 2007).

Indigenous communities therein. If oil companies eventually gain access to the area via roads, the effects will be no better. Colonization will spread, bringing with it the destruction of forests; the expansion of areas under commercial agricultural cultivation; the illegal cutting of timber; and the erosion of all means of subsistence for Indigenous Peoples.

If we consider the latest proposal regarding the value of "avoided deforestation" (presented by the governments of Costa Rica and Papua New Guinea at the Conference of the Parties to the *United Nations Framework Convention on Climate Change*) in light of the studies done by the IPCC, the lifestyles of the Indigenous Peoples of this area has substantially contributed to climate change mitigation.[23] Consequently, the efforts of Indigenous Peoples also support the global imperative to reduce man-made emissions.

Protection of, and Threats to, Land Management Rights

Indigenous Peoples were legally recognized by the national government of Ecuador in 1992. During a landmark march to the capital, Quito, Indigenous Peoples were granted title to 1.115 million hectares of territory.[24] From deep within the Amazon, Indigenous Peoples travelled by land and by rivers until they arrived in Puyo, the capital of the province of Pastaza. There they rallied at Union Base, the headquarters of the Indigenous nationalities, and used the main road for several weeks, upon which they were greeted by the support of other civil society organizations. Additionally, many of the *pueblos,* including the Indigenous Peoples from the mountains, joined the march on the way to Quito. The women of the Sarayacu community took the lead in the discussions with the government, which culminated in the granting of general land deeds. Through a national decree, the government turned over several blocks of land (territories) to the Indigenous groups. True boundaries did not exist; the only boundaries were coordinates and natural borders (such as rivers). To this day, man-made borders have caused small-scale conflicts concerning internal boundaries of the territories, intensifying with oil companies' encroachment.

The Indigenous nationalities of Pastaza Province started demarcating internal boundaries, using the community mapping system to set borders and legalize territories. In some cases the community mapping system was also used to show land use. Once the land titles were in place for each of the nationalities, they worked on new, sustainable initiatives. Nevertheless, these

[23] Interview with Leonardo Viteri, an environmentalist and leader of the Native People Organization of the Pastaza, 2006.
[24] Interview with Cesar Cerda, director of natural resources management project of the Organization of Indigenous Peoples of Pastaza, 2006.

territories are still in danger because oil companies try to pressure certain communities into granting them access. If this were to happen with one community, it could have a negative effect on the entire, pristine forest region.

In Ecuador, information regarding the *United Nations Framework Convention on Climate Change* has not been widely disseminated among the Amazonian communities. Very few people are aware of this topic because information is shared with urban professionals, rather than being discussed at the local, rural level. If one were to ask the Amazonian inhabitants about climate change, they might immediately associate it with the economic profits of carbon capture available to those who inhabit extensive territories, such as Indigenous Peoples. Some urban professionals understand this, and want to make alliances with Indigenous communities in order to get involved in coal extraction; however, the Indigenous communities are sceptical, fearing that their land rights could be threatened – indeed, an outrageous example of this actually occurred when a private foundation tried to exploit Indigenous Peoples' territories. This private foundation obtained an agreement from the Huao Indigenous community, by means of a signed, notarized Ecuadorian document wherein the foundation was granted usufruct rights on their land.[25] In essence, the foundation tried to seize constitutionally-protected lands. Concerning the collective rights of the Indigenous Peoples, Article 84, Section 2 of the Ecuadorian Constitution sets out to, "Preserve the imprescriptible property of community lands that shall be inalienable, nonseizable and indivisible, except by the State who has the authority to declare them for public use. These lands shall be exempt from paying property tax."[26]

In the Pastaza Province, the NAE federation considered developing a carbon sequestration initiative, but in the end the possibility was discarded because of a fear that the communities might lose their land rights. Indigenous Peoples' participation in Ministry of Environment meetings is not considered important, and is disregarded even more blatantly in committees convened to discuss climate change. Finally, it is vital to note that some non-governmental organizations are "working" with certain Indigenous leaders to pressure IPOs to adopt resolutions that endorse carbon sequestration projects.

As has been mentioned, another threat to Indigenous territories is the invasion of oil companies. This author has observed that a number of people from nearby communities have been "paid off" so that they will make decisions in favour of oil exploration and extraction. This has resulted in

[25] Interview with Moi Enomenga, Huao Peoples' leader, 2006.
[26] Article 84 of the *Political Constitution of the Republic of Ecuador*. Available online at http://pdba.georgetown.edu/Constitutions/Ecuador/ecuador98.html (Accessed January 11, 2007).

divisions within communities, despite the fact that local leaders have made efforts to reach a consensus on territorial integrity. Ecuador has accepted bids for blocks 23 and 24 of the Amazon, which will directly affect the Kichwa Peoples of the Sarayacu and Achuar communities.[27] The process of consultation with Indigenous communities, as provided for in the Constitution, has been ignored, with such violations becoming more and more commonplace in recent years.

Campaigns and Indigenous Peoples' Solutions to Threats

In 1997, the Ecuadorian Defense Campaign for the South-Central Amazon was started, and included the participation of organizations such as FINAE, FICSH, and the Interprovincial Federation of the Shuar Peoples of Ecuador (FIPSE).[28] An alliance of Indigenous Peoples was established to defend Indigenous rights, territories, and natural resources against the interests of the oil companies Arco Oriente and Compañia General de Combustibles (CGC), later known as Burlington Resources.[29] This joint effort put a stop to the rush of oil companies heading to the southern Amazon. The leaders of this campaign established the following strategy:

- Strengthen local organizations by increasing members' participation and collective decision-making.
- Create a website to provide information about the struggle.
- Create a network of organizations in key cities in order to articulate the struggle.
- Participate in several international events and report the violations that the people have suffered.
- Coordinate efforts with other networks that struggle to defend Indigenous territories and natural resources.
- Establish legal strategies using the national, and later the international legal framework.

[27] Interview with Cristobal Callera, Vice President of NAE, 2006.
[28] For more information visit http://www.pachamama.org.ec.
[29] For more details on this story, see http://www.amazonwatch.org/amazon/EC/burling/.

- Invite national and international community observers to listen to the community members themselves, as they express their concerns about the struggle. (Obviously the idea was for these observers to pressure the government and the oil companies through different political and social avenues.)

- Participate in the shareholders' meetings of companies that make decisions affecting these territories, and hold demonstrations in front of their headquarters.

The problem received national attention. Lawsuits were filed in the local jurisdictions against CGC and, in turn, the company filed lawsuits against the community leaders of Sarayacu. Once all of the national legal channels had been exhausted, the communities and their leaders sought and won protective measures before the Inter-American Commission on Human Rights (IACHR).[30] In its June 6, 2004 resolution, the IACHR recommended some of the provisional measures requested by the Sarayacu community, noting that, "the detonations from the explosives have destroyed forests, sources of water, caves, subterranean rivers and sacred sites, and have caused animal migration."[31] The placement of explosives in traditional hunting areas affected the search for food, threatening the community's survival and altering their livelihood strategies and life cycle. As a consequence, the right of the Indigenous Peoples of Sarayacu to use and enjoy their ancestral lands has been dramatically affected.

During a hearing before the Inter-American Commission in Washington, D.C., the Attorney General of the Ecuadorian government made an offer to the community, guaranteeing that the oil company would not enter Sarayacu territory. However, the offer was withdrawn as pressure from CGC began anew in the community. The company has been using the local and national press to additionally pressure the government, pointing out that the State cannot exercise its sovereignty in these territories, and is contradicting the Constitution by doing so. The community is greatly concerned, knowing that the Indigenous rights and traditional practices recognized by the Constitution could be seriously affected.

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[30] For more information, see the Medidas Cautelares 2003 of the Inter-American Comisión on Human Rights http://www.cidh.org/medidas/2003.sp.htm (Accessed January 11, 2007).
[31] IACHR Resolution, June 17, 2005 Case of Indigenous Peoples of Sarayacu. http://www.corteidh.or.cr/docs/medidas/sarayaku_se_02.pdf (Accessed January 11, 2007).

Lessons Learned and Recommendations Offered

Land Use, Community Mapping, and Territory Zoning

Community mapping shows the location of all of the resources the community uses. It also aims to outline community borders, and these areas are then divided into community zones where rules are established to govern the use of resources. Generally this is accomplished with the support of other institutions that have advanced programmes utilizing geographic information systems. It is vital that use of this technique continues, and is expanded by investing in mapping equipment. It is also necessary to train the youth of the community in the use of this technology, so that technical support from outside the community is rendered unnecessary and resource restriction disputes may be solved internally. The scale that the government employs should be used; for example, the Geographic Military Institute should input certain information into the state's database confirming Indigenous Peoples' use of their territories. The development of digital mapping is costly, and therefore accomplished more efficiently with the assistance of resource-laden institutions that support Indigenous processes.

As a follow-up to mapping resources, community assemblies must be held to define the management zones and the necessary categories. With the Sarayacu, zones are clearly established including use/management zones and conservation zones. Future plans are typically substantiated by the technical parameters shown on the aforementioned maps. These plans are made up of a combination of ideas for land use, all of which take into account Indigenous Peoples' connection to the land.

Traditional *Chacras*

Chacras are a common, itinerant subsistence practice which, if allowed to integrate into a market economy, could exert undue pressure on the forests. The *chacras* also aid in conservation and protection of the culture, the spirituality of the people, and the survival of families. Maintenance of the *chacras*, and the system of which they form a part, is therefore a priority.

Management of Forests

The Indigenous Peoples of Pastaza consider the forest a mother, a provider whose resources should be managed for sustainable use. There are

no strict conservation methods, except for those of sustainable use and zoning, which help to establish non-invasive, non-destructive practices. Even so, modern concepts of conservation used by the organizations such as the World Conservation Union do manage to connect a social approach with forest management.

The interchange of experiences between the southern and northern Amazon communities has allowed them to learn about the impact of oil companies' activities, and the consequences that these have had on organizations and culture. Even though they live a short distance away from the oil platforms, the Indigenous communities have not benefited from this industry. Instead, they have had to deal with the enormous environmental problems it spawns.

Finally, after recovering their territories, Indigenous Peoples have seen the need to be involved in creating new, sustainable initiatives that match their worldview. Some organizations, unfortunately, have not put these initiatives into practice. The fallout of this is detrimental to the communities, whose members believe the promises made by the oil companies – the very same companies that have wreaked havoc on Amazonian Indigenous Peoples' land and natural resources.

Conclusion

It is important to note that ninety-five percent of the forest in Pastaza Province has been preserved because of the lifeways of the Indigenous Peoples inhabiting the area.[32] Using traditional knowledge to manage the forests has resulted in the perpetuation and nurture of these wooded areas. Zoning has allowed certain areas within Indigenous territories to be used exclusively by the communities, while simultaneously setting aside sensitive areas where access is denied to all but a few members.

Now, extractive industries want to appropriate these preserved forests and strip them of not only their natural wealth, but also, in the process, their ability to sustain these Indigenous communities and cultures. In an attempt to raise funds for its budget, the Ecuadorian government has put the petroleum blocks in the Amazon up for bid on several occasions, endangering Indigenous territories. Failure to meaningfully consult with the Indigenous Peoples of the region has triggered conflicts with the oil companies. The encroachment of oil companies into Pastaza Province has also intensified Indigenous Peoples' organizational efforts to improve their strategies in defence of their territorial rights and natural resources. When organizations

[32] Interview with Cesar Cerda, director of natural resources management project of the Organization of Indigenous Peoples of Pastaza, 2006.

are faced with the dilemma of what to do when their lands are threatened by extractive industries, they realize that full protection demands that sustainable initiatives be implemented alongside the granting of land deeds.

Until 2002, only 200 of the 2,300 tons of natural gas produced were processed per day, while the remainder was burned in the oil field "flares" in the Ecuadorian Amazon. The actions and protest of the Indigenous Peoples of the south-central Amazon actively prevent this statistic from increasing.[33] The traditional knowledge of these Peoples, along with the strategies they employ in defence of their lands, cultures, and resources, have contributed to the decrease of emissions caused by deforestation in the rain forest. The struggle of Indigenous Peoples has additionally contributed to climate change abatement worldwide by preserving forested areas in the Amazon which naturally capture carbon.

[33] Interview with Pedro Tituaña, Chemical engineer and advisor of CONFENIAE.

Key Recommendations and Conclusions

This report has offered a rich and well-developed examination of some of the climate change-related topics that are most relevant for Indigenous Peoples. Housed within these case studies is a wealth of information on the varied local experiences with, and responses to, the impacts of the changing global climate. Taken together, these analyses create an invaluable picture of the specific vulnerabilities of Indigenous communities, as well as their actual and potential contributions to the effort to combat this world-changing phenomenon. The following section offers a summary of the authors' key recommendations, as well as relevant assessments of the processes of the *United Nations Framework Convention on Climate Change* (UNFCCC). If the institutions of global environmental governance, international bodies, and state Parties hope to address the vulnerabilities and needs of Indigenous communities, or to grasp the efficacy of the traditional knowledge and contemporary strategies employed by Indigenous Peoples, it is critical that they seriously consider these observations and suggestions.

Impacts, Vulnerabilities, and Adaptation

Although a significant portion of Mr. Fiu Mataese Elisara-La'ulu's case study focuses on specific policies and vulnerabilities within the Samoan context, many of the concepts and approaches employed can be generalized. Ultimately, he offers reasonable and culturally appropriate strategies for addressing a global issue that will affect Indigenous and non-Indigenous communities alike (though the former will bear a disproportionate burden). His suggestions focus on utilizing relationships with nature, other groups, and particularly the government, in order to mobilize communities to act in an effective, practical way.

As Mr. Elisara-La'ulu notes, the consensus approach has offered the most effective way to address adaptation, policy-making, and programme planning. By allowing the communities themselves to suggest and prioritize solutions, Samoa has laid a foundation for an appropriate and effective national adaptation strategy. While this has been successful in the domestic context, the efficacy of the approach is not limited to this state, or even this region. Generally, involving major stakeholders and rights holders (including Indigenous community representatives) is an essential step not only in maximizing support for a given policy or course of action, but also in honouring national and international commitments made to Indigenous Peoples and communities.

The case study from Samoa also advocates for community-government partnerships. Mr. Elisara-La'ulu suggests that adaptation plans must be developed by vulnerable communities, with the assistance (in the form of resources and guidance) of relevant government agencies. While relationships between governments and Indigenous communities are sometimes characterized by significant strife, there is an understanding that this issue transcends many other difficulties, and therefore necessitates the cooperation of all affected actors.

The Clean Development Mechanism and its Effects

The two case studies exploring the various aspects of clean development mechanism (CDM) project implementation employed different approaches to both the research itself and the drafting of results. However, the experiences faced by the Indigenous communities in both countries, as well as their reactions to CDM projects, were remarkably similar. Both reports focus on the limited involvement of Indigenous Peoples in the design and implementation phases of these projects. The authors, Mr. Sinafasi Makelo Adrien (Democratic Republic of the Congo) and Ms. Anna Pinto (India), express that this situation is, sadly, not atypical; in fact, it is merely a continuation of generations of discrimination.

Rather than aiding in the "development" of these communities, the authors fear that the CDM is perpetuating and perhaps exacerbating the abuse and exploitation of Indigenous Peoples. Ms. Pinto examines the role of international financial institutions and other agencies in reinforcing these practices, while Mr. Adrien draws attention to the national government and entrenched social structures. Regardless of the root cause, both assert that Indigenous Peoples must play a greater role in the initiation and realization of CDM initiatives (if they are to be pursued at all). In order to enable such participation, governments and implementing agencies must regularly diffuse background information and site-specific data for projects. Affected Indigenous and local populations need to be objectively informed of the importance of the CDM projects, as well as their actual and potential impacts. Mr. Adrien also points out that this information must be disseminated in a language and manner that the communities can easily apprehend.

Beyond merely respecting Indigenous Peoples' rights, Mr. Adrien calls on CDM projects to serve as true models of inclusivity, in which people of all ethnicities can meet and collaborate, providing an example of domestic human rights protection in the broader context of respect for international standards. Indeed, as he contends, sustainable development and environmental protection must be everyone's business, without exception.

Ms. Pinto's study reinforces this perspective, asserting that development actions cannot be imposed against the will of a supposed beneficiary.

The case study from India expertly argues for a holistic, comprehensive, and just assessment of the value of forests and CDM-targeted lands. By examining the utilization of Net Present Value in governmental and academic calculations of the worth of forests, the author exposes the failures of resource valuation based purely on economics. Indeed, as Ms. Pinto notes, such calculations must also consider "Indigenous entitlements and claims, including compensation for historical wrongs, spiritual losses, global heritage, and other factors" in order to be either effective or equitable tools. Although the discussion is rather technical, the message is clear: lands and forest resources are worth far more than the amount of marketable goods and services they are capable of producing. This logic underlies much of the passionate resistance to CDM-style projects, which often attempt to appropriate land without the full knowledge or understanding of its inhabitants. Such appropriation produces unsustainable benefits for those outside the community, depreciating quickly and devastating livelihoods and cultural practices in the process. While a certain number of these projects are certainly planned with the primary intention of mitigating climate change, and some may have nominal success, they still tend to overlook fundamental questions concerning the rights and needs of the communities most directly affected by their presence.

Land Use, Land-Use Change, and Forestry

Mr. Cerda Shiguango's case study on Ecuador complements Ms. Pinto's discussion of the strong Indigenous bond with the land, particularly the forests. He builds upon this by asserting that traditional knowledge and practices must be valued independently of what they can contribute to either the commodity or carbon market. The spiritual and cultural significance of activities such as hunting, gathering, farming, and forest management must be carefully considered by those attempting to make changes to land use policies and, implicitly, traditional practices associated with the land. Additionally, the Ecuador case study argues that Indigenous approaches to land use should be regarded as models for sustainable land use and management. The author provides evidence of effective and ecologically sound Indigenous practices, helping to dispel the assumption that traditional understandings and livelihood strategies are 'backward' or damaging to the environment. Indeed, as Mr. Cerda Shiguango demonstrates, Indigenous Peoples show great practical wisdom in navigating their complex relationship with the land.

In keeping with Mr. Elisara-La'ulu's recommendations, the report of community mapping techniques in Ecuador reinforces the importance of collaborative resource management. The study reveals the way in which communities are fusing traditional practices and modern technologies to fashion solutions to resource and land use conflicts. Rather than technology undermining tradition, mapping is allowing communities to refine and coordinate their use of the land based on their own conventions. Community representatives work together in this, making decisions regarding the most effective and sustainable way to allocate precious resources.

While some may believe that Indigenous Peoples raze the land in their own quest for survival, the reality is quite the opposite. As Mr. Cerda Shiguango's study establishes, these communities cooperatively create a situation conducive to the long-term survival and well-being of all members; in the case of climate change abatement, Indigenous Peoples' creation of forest reserves and reforestation activities allow benefits to flow outward, to those beyond the community. Consistent with the other case studies on CDM activities, the Ecuador report suggests that, while communities are able to effectively manage the land on which they reside, the interference of outside projects threatens natural resources. Some of the imposed reforestation and afforestation activities proposed as part of the UNFCCC process, along with exploration and extraction projects proposed by industry representatives, jeopardize the sustainability of forests – and the communities that dwell within them. As Mr. Cerda Shiguango recommends, groups facing external threats to their territories must pursue protection via strengthening their sustainable initiatives and lobbying for land deeds.

Final words

The individual case studies in this report each explore unique perspectives of a single, overarching issue, focusing global climate change through various geographic and topical lenses. Although the individual authors approach the impacts of climate change in disparate ways, it is easy to discern the common thread running through the narrative as a whole. While Indigenous Peoples are among those most susceptible to the effects of climate change, they are rarely, if ever, at the forefront of discussions on adaptation or abatement. The stories, experiences, policies, statistics, and recommendations shared by Indigenous Peoples in this report offer a glimpse into not only their vulnerability, but also their use of spirit, traditional knowledge, and adaptive capacities. The strength of their collective voice is evident – it is now incumbent upon those with power to heed their call and take action.

Updates from COP-12

The Twelfth Conference of the Parties (COP-12) to the *United Nations Framework Convention on Climate Change* (UNFCCC) was held, alongside the second Meeting of the Parties (MOP-2) to the *Kyoto Protocol*, in Nairobi, Kenya, from November 6-17, 2006. Although the representatives of some of the Annex I (developed, or industrialized) countries might have considered this meeting a success, it was quite disheartening for the Indigenous individuals in attendance. Disappointments ranged from the UNFCCC Secretariat's failure to recognize the Indigenous delegation as anything more than representatives of non-governmental organizations (rather than separate and distinct Indigenous Peoples' organizations), to the rejection of calls from delegates to include language specifically addressing the rights of Indigenous Peoples. Unlike the *Convention on Biological Diversity*, which at least recognizes Indigenous Peoples and supports the protection and promotion of traditional knowledge, neither the UNFCCC nor the *Kyoto Protocol* make any specific reference to these unique peoples or their concerns.

Indigenous groups have been trying to participate in the UNFCCC process for over five years. As part of this effort they have created the International Indigenous Forum on Climate Change (IIFCC), which meets prior to, and serves as a body for advocacy and action at, the COP meetings. This year over twenty delegates gathered in Nairobi to discuss the issues to be addressed in the COP, and the most effective ways to lobby the Parties so as to have their voices heard in the UNFCCC process. Both Mr. Johnson Cerda Shiguango and Ms. Anna Pinto were able to present their case studies to the delegates at the IIFCC in Nairobi. Together with other Indigenous representatives from around the world, they also formed several working groups, including groups to discuss the CDM (concentrating on the carbon market and forestry initiatives); vulnerability, adaptation, and mitigation (with a focus on the five-year programme of work of the Subsidiary Body for Scientific and Technical Advice, or SBSTA); land use, land-use change and forestry; and progress on recommendations from previous IIFCC meetings.

During the proceedings of the COP, Indigenous delegates focused on several key topics within the UNFCCC process which drew directly from the information and recommendations presented in these case studies. The representatives lobbied strongly for their rights by undertaking interventions at meetings and plenary sessions; participating in contact groups; organizing press conferences; and meeting with leading executives (including the President of the COP/MOP and the Executive Secretary of the UNFCCC Secretariat). The delegates submitted an intervention at the meeting of the SBSTA on items related to that body's "Five Year Programme of Work on

Impacts, Vulnerability, and Adaptation to Climate Change," specifically requesting:

- an expert meeting at which both indigenous and non-indigenous experts will gather to discuss the effects of climate change on Indigenous Peoples at the earliest possible opportunity. This meeting should address issues such as specific impacts on fragile and vulnerable ecosystems, the interconnection between climate change and poverty, and the short, medium and long-term effects of the CDM. Additionally, traditional knowledge and practices such as the capacity to predict the climate and mitigate and reverse adverse micro climatic and ecological changes, participation in the evaluation of impacts, mechanisms of adaptation, mutual learning on climate change, and sustainable development should form the main content of this expert meeting.

- generous support from the Parties for this meeting. We also request that the UNFCCC Secretariat organize this expert meeting in collaboration with the International Indigenous Forum on Climate Change and the UN Permanent Forum on International Issues.[1]

Unfortunately, these calls went unheeded. While Indigenous representatives will be invited to attend an expert meeting sponsored by the UNFCCC, they will be only one group among many. One of the primary elements of the request made was the need for an expert meeting specifically addressing Indigenous issues related to climate change, as the unique practices and traditional knowledge of Indigenous Peoples warrants special consideration. Additionally, the IIFCC representative asked for allocations from, and direct access to, the resources made available through the UNFCCC's Adaptation Fund. This, too, was rejected.

In a separate intervention submitted to the Subsidiary Body for Implementation, regarding capacity building, the IIFCC delegates used the recommendations from the case studies to emphasize the need for Indigenous participation, full transparency, and information dissemination prior to the implementation of any project. They also reasserted the importance of effective, appropriate capacity building initiatives for the Indigenous Peoples impacted by these projects. As the delegates noted, it is essential that all

[1] Taken directly from the intervention submitted on behalf of the IIFCC regarding SBSTA Agenda Items 3 and 5.

capacity building and information dissemination work is carried out in a manner and language appreciable by the communities involved.[2]

The complex issues surrounding CDM projects created topics for discussion during the COP and its preparatory meetings. There is debate over the fundamental question of whether CDM projects should be strictly condemned and rejected outright. Those who support this position wish to assert strong, general opposition to these projects; others argue that implementation of the projects is inevitable, and that the best way to address the situation is to demand that Indigenous rights are taken into consideration during design and implementation. In the end, many of the delegation's final proposals and demands constituted additional requests for increased participation and capacity building vis-à-vis CDM projects. Following from the case studies, the IIFCC also emphasized the need for planners to consider the land rights, cultural heritage, and latent natural value of territories they intend to use for CDM projects.

These same considerations and issues were raised in respect to land use, land-use change, and forestry. Indeed, much of what was submitted in the intervention on forestation and deforestation was taken from several of the case studies. As that submission stated,

> As Indigenous Peoples, we have traditional knowledge concerning the forests and other ecosystems of which we have been an integral part. We sustainably use and manage these lands with benefits to the planet and all life forms that inhabit it. We demand governments to stop granting our territories and land to multinational and other profit-focused corporate entities under the guise of conservation or climate change mitigation initiatives. We reject any type of government policy to encourage, coerce or compel the relocation of Indigenous Peoples out of their ancestral lands. We further urge that we must not be prevented from responsible management of our own lands according to traditional practices.
>
> Governments should encourage and support the establishment of working groups in the local communities and at the national level to discuss issues related to climate and ecosystem change and coordinate Indigenous participation in planning, decision-making, implementation and monitoring. It is necessary to continue to expand and enhance the use of community mapping techniques by investing in mapping equipment and facilities to

[2] Based on the intervention submitted on behalf of the IIFCC regarding SBI Agenda Item 10.

> be accessed locally. It is also vital to train the youth of the community to use this technology to facilitate local and community resource management and decision-making.
>
> The government must provide adequate and reasonable compensation for any unavoidable changes in land use and for the protection and regeneration of forests. Where the government prohibits or prescribes specific land-use change, it must provide compensation and offer opportunities for alternative, sustainable livelihoods.[3]

As is evident from the above passage, the issues covered in these case studies are of great relevance, particularly in the context of the UNFCCC and the processes of the *Kyoto Protocol*. The information these case studies contained, as well as the presence of their authors during the COP, helped to provide direction and tools for Indigenous representation at COP-12. In order for Indigenous Peoples to have their voices heard and their rights respected, they will need to continue to demand attention, share their experiences, and lobby hard for change. Case studies such as those contained in this volume will be instrumental in supporting such activities, now and in the future. It is hoped that the power and clarity of the messages they contain will resonate strongly enough to raise awareness and inspire positive action.

[3] Taken directly from the intervention submitted for SBSTA in the 1st Meeting, Plenary 1 regarding Agenda Item 5.