

PART I
LEGAL AND INSTITUTIONAL
FRAMEWORK

of Belize
facing the
climate change

POLITICAL AND LEGAL FRAMEWORK

Legal and Institutional Requirements for Participating in CDM

Article 12 of the Kyoto Protocol introduces the Clean Development Mechanism (CDM) under the direction of the Conference of Parties (COP) and supervised by the Executive Committee, to promote projects between countries listed in Annex 1 and developing nations. It also establishes that emissions reduction as of 2000 counts toward commitments on emission limitations accrued during the years 2008-2012, as long as they are certified by an entity approved by the COP.

To comply with these requirements, the Protocol establishes the need to prepare guides on inventorying methods (Art. 10) and through the COP, to institute rules for emissions trading among countries in Annex B (Art. 17.)

According to a recent FAO publication analyzing the theme of forests and climate change (FAO, 2002), the legislative measures governments can take for compliance with the Framework Convention on Climate Change (FCCC) and the Kyoto Protocol are to:

1. Regulate forest management and forest use. For example, countries can limit harvesting and require immediate reforestation of logged areas, with greater priority for carbon dioxide sequestration.
2. Regulate the production and use of forest products, as well as the disposal and use of waste and management of residues
3. Regulate producers of greenhouse gases (GHG) and promote investment in carbon sinks

In this sense, Belize must meet the following obligations:

- Conduct and update inventories on emissions and removal of GHG, including deforestation, plantations and forest regeneration, and burning or decomposition of wood

- Develop programs for mitigating the effects of climate change, including measures on sequestration and sinks
- Promote emission-reducing technologies
- Promote sustainable management of sinks and reserves
- Prepare for adaptation to the impacts of climate change and develop appropriate plans for areas that could be affected by flooding, drought or desertification processes

Overall Framework for Project Verification

At the CoP 7 meeting, a CDM Executive Board consisting of 10 members was appointed and it is this body, which will have the final authority to approve proposed projects under the CDM. To guide this process, a number of rules have been developed which will apply to CDM projects in general, while others are specifically tailored to address reforestation and afforestation projects. It is important to note that as yet, not all the rules and procedures have been developed or agreed upon in this area.

The formulation of additional rules and guidelines will be the focus of future CoP meetings. This implies that interested parties must closely follow these meetings to stay abreast of future agreements on rules and procedures governing the operation of the CDM. Important areas that still need to be decided upon within the land use sector are:

- Acceptable system for calculating the net carbon benefits of CDM projects;
- Ways to deal with flexible and non permanent land systems;
- A suitable system for dealing with project social and environmental impacts.

The work of finding suitable definitions to these and the other land use issues will fall to a great extent on the advisory groups appointed to support the work of the CoP. Within the Convention on Climate

Change the two most important advisory bodies are the “*Subsidiary Body for Scientific and Technological Advise*” (SBSTA) and the “*Intergovernmental Body on Climate Change*” (IPCC). These bodies has been actively preparing advice and guidance on the above mentioned issues and other topics relevant to climate change (for CoP 9 held in 2003). The real potential for developing countries to continue to influence the process clearly exists.

This influence can be exerted through the National Focal Points (NFP), which have been appointed in each country that is party to the Convention on Climate Change. In lieu of this or in addition to this, developing country parties can send delegations to attend the meetings of the SBSTA and the IPCC. At these forums, developing country can make known their views to these advisory bodies, who will in turn influence the decisions of the delegates to the CoP.

Notwithstanding the absence of comprehensive rules and guidelines, a workable framework has already been established, which will enable potential projects to be vetted for approval and to allow for accounting of the carbon credits accruing from these projects. It should be borne in mind that once agreements have been established on the outstanding issues, approved projects will have to be readjusted accordingly, but it is not expected that these readjustment will significantly affect the viability or outcome of any of the ongoing projects. Main general guidelines of the CDM are as follows:

- a. Subject to the final agreement, it is believed that reforestation and afforestation projects will only be allowed on lands deforested before December 31 st 1989.
- b. Proposed projects must result in real, measurable and long-term emission reductions. Proof of the reductions must be obtained through an independent third party (**Operational Entities**) licensed by the CDM’s Executive Board to operate in this capacity. In addition the carbon stocks generated by the project need to be secure over the long term, a condition often referred to as **permanence** and any future emissions resulting from these carbon stocks need to be accounted for and discounted from the total emission reduction figures.
- c. All land use projects must incorporate the principle of **additionality**, which means that carbon sequestered or emissions reduced must be in addition to any that would occur if the project did not exist. To establish additionality within land use projects, a **baseline** must first be established which would compare carbon stocks and flows at the project site in the nascence of project activities as compared to those that would be produced because of the project. The difference in the two values would constitute the net carbon benefit of the project.
- d. All national projects must be in agreement with the sustainable development objectives of the host country as laid out in the national legislation and the various national development plans and strategies.
- e. Projects must contribute to biodiversity conservation in general and uphold the principle of sustainable use of natural resources.
- f. Only projects starting in the post 2000 period will be eligible to claim emission reductions under the CDM.
- g. Of the carbon credits awarded to CDM projects, a total of two percent will be allocated to cover the cost of adaptation in countries that are expected to be severely affected by climate change. These allocated funds often referred to as the **adaptation levy** may be used to undertake land use activities in these countries not presently covered under the CBM.
- h. Some of the proceeds from carbon credit sales will be used to cover the cost of administering the CDM projects, although the proportion to be retained has still not been decided.
- i. A crediting period will be assigned for the activities undertaken by the projects. This period can be for a maximum of seven years with a maximum of two renewal options or for a non-renewal period of ten years.

- j. Funding for CDM projects must not come from the official development assistance budget of any donor country.
- k. All CDM projects must account for potential **leakage** arising from project activities.

Leakage results from the inadvertent emissions of CO₂ that is an indirect result and consequence of pursuing project activities. Potential areas of leakage must be thoroughly examined and accounted for within the overall project planning and reporting.

Relevance of the CDM to the Land Use and Forestry Sector

It is recognized that peoples' interaction with forest and soils is a key factor in creating rising levels of atmospheric carbon dioxide which has now been identified as the main driver of climate change.

Forest clearance alone accounts for up to 25% of the carbon dioxide released into the atmosphere, most of it accruing from anthropogenic and other non-natural processes. Soils however, are also extremely important since they sequester more than twice the carbon entrained within the woody biomass of plants and the atmosphere.

Just as forest and soils have the ability to release substantial amounts of carbon through anthropogenic influences, so too do they have the potential to sequester and store carbon within new biomass. It is estimated that on average around 50% of the dry weight of plants is carbon, but the actual content is dependent on the species and the prevailing growth conditions.

Reforestation and afforestation projects are the only allowable land use activity during the first commitment period (2008 – 2012) of the CBM, however a comprehensive set of rules to guide projects within these two areas is still not yet available. The definitions for reforestation and

afforestation under the CDM are rather narrow and if used within their current context are liable to eliminate many projects with the potential to benefit emissions offset, and reduction. For example if the present definitions are applied strictly many potential projects in Belize, aiding forest rehabilitation, regeneration, revegetation and enrichment planting would be excluded. It is therefore expected that developing country parties will be allowed some latitude in deciding what definitions best apply to them within their particular circumstances as long as it falls within the scope of the definitions given in the agreement.

There is no discrimination between small-scale and large-scale projects, although for practical reasons large scale projects will be more economically viable. In addition units may be pure or mixed stands or multipurpose arrangements, which can include different management systems such as forestry and farming. Examples of eligible systems and configurations are:

- Woodlots on communal lands.
- Reforestation of marginal areas, e.g. disturbed sites and areas of poor soils unsuitable for agriculture.
- Reforestation of threatened and sensitive sites, e.g. riverine areas, hillsides and forest corridors.
- Large scale industrial plantations.
- Small scale plantations run by owner.
- Establishments producing biomass for energy which can serve as fossil fuel substitution, e.g. Bagasse plant.
- Mixed farming systems growing trees within the overall management program such as for Agro forestry systems.

At the end of the day, the execution of projects will be contingent on the market conditions that will allow sale of carbon credits, which will in turn determine whether foreign investors will want to invest or not.

Relevance of the CDM to National Sustainable Development

Any proposed CDM project should be consistent with national development priorities, strategies and any existing plans and targets for sustainable development. The introduction of projects financed through the CDM should present a great opportunity for developing countries such as Belize to access international financing to promote sustainable development. It is anticipated that in the future there will be a lively market in carbon trading, with developed countries purchasing carbon credits and developing countries selling them. It behooves countries such as Belize to have certain structures, arrangements and conditions in place to be able to fully benefit from the introduction of the CDM.

Chief among them are:

- The objectives and priorities of the national stakeholders must be reoriented towards the opportunities presented in this new market.
- The necessary planning capacity and regulatory network must be in place to guide the process and ensure that projects meet the objectives and priorities of national sustainable development.
- Current land use trends, land regulation and administration system must be favorable to participation in CDM projects.

It goes without saying that a constructive partnership must be forged between the public and private sectors to create the necessary synergy for successful project implementation. To that end, education and public awareness programs directed towards the CDM is paramount as are the building and strengthening of the public institutions to ensure that suitable structures are in place to efficiently facilitate the process. If these conditions are met, the CDM will offer developing country governments already hard strapped for cash, a valuable new source of funding to invest in such projects as sustainable forestry, land restoration and increased energy

capacity and efficiency among others. Developing countries acting in concert or individually can exert their influence to ensure that the CDM incorporates appropriate provisions for meeting their land use and developmental needs.

To that end the governments of the Central American countries through the Central American Commission for Environment and Development (CCAD) have embarked on a program to assess the forestry potential of the Mesoamerican region for participation in the CDM with the view of formulating strategic guidelines for a regional strategy on forest and climate change.

Political support and capacity of national institutions to host CDM projects

Belize has not yet hosted a project under the CDM and indeed has not yet fully accomplished the steps necessary for complete ratification of the Kyoto Protocol. Until such procedures are carried out any climate change projects within the country would be ineligible for participation in CDM activities. However, the country submitted its First National Communication to the United Nations Convention to Combat Desertification (UNCCD) in 2002. For the purpose of preparing the report, a Project Steering Committee (PSC) was established with its members drawn from the public and private sectors, academia and NGOs. These members hail from a range of fields including business, energy, environment, fisheries and forestry. The Permanent Secretary in the Ministry of Public Utilities, Transport and Communications chairs the PSC.

The main tasks of the PSC are:

- To prepare an inventory of sources and sinks of greenhouse gases (GHG) in Belize.
- To elaborate an assessment of potential impacts of climate change in Belize.
- To develop an analysis of potential measures to abate the increase in greenhouse gases emissions and to adapt to climate change.

- To design an action plan to address climate change and its adverse impacts.
- To prepare the First National Communication of Belize to the COP.
- To enhance general awareness and knowledge on climate change and related issues in Belize.
- To strengthen the dialogue, information exchange and cooperation among the relevant stakeholders including Government, non-government, academic and private sector agencies.

Ratification of the Kyoto Protocol

The country has identified a National Focal Point and has designated the National Meteorological Services as the headquarters of the climate change project in Belize. A small project team comprising a project coordinator and an administrative assistant is housed at the headquarters office.

The National Authority

Although Belize has a National Focal Point for the United Nations Framework Convention on Climate Change (UNFCCC), it does not have a Focal Point specifically for the CDM, nor is there a National Authority specifically designated to oversee and coordinate the work of the CDM in Belize or to prepare the groundwork for hosting CDM projects. It should be noted as well that Belize is party to the United Nations Convention to Combat Desertification (UNCCD) and is in the process of preparing its second national report under its obligation to the convention. The National Focal Point for the UNCCD is from the Ministry of Natural Resources, the Environment, Industry and Commerce, and the office for the project is located within the same ministry.

Sustainable development policies and plans

Belize is in the forefront of the Central American region in supporting sustainable development policies and strategies. To help in defining its sustainable development priorities in terms of land use and forestry, the government of Belize has established the National Protected Areas Policy Committee (NPAPC). The main focus of this committee is in the following areas:

- Wilderness protection.
- Preservation of species and genetic diversity.
- Maintenance of environmental services.
- Protection of specific natural and cultural features.
- Tourism and recreation.
- Education.
- Sustainable use of resources from natural ecosystems.
- Maintenance of cultural and traditional attributes.

One of the principal recommendations being considered in this policy document with potential implications for future CDM projects is “the better coordination of efforts between the various ministries and departments responsible for natural resources management to avoid redundancies and to maximize on the use of available resources”

Belize now has a comprehensive set of laws in the area of natural resource management, the most important of which are summarized in Table 1.

Unfortunately the regulations are very weak in the areas of land use and forestry, the two areas that will be critical in the management of CDM projects in Belize.

Table 1
Principal legislation and their respective roles
in natural resources management

LEGISLATION	IMPLEMENTING AGENCY	ROLES IN NATURAL RESOURCES MANAGEMENT
Environmental Protection Act, 1992	Department of Environment	Provides for the general management of our natural resources & Environment, prudent use of its resources & Pollution Control Provides penalties for environmental crimes
Environmental Protection Amendment Act, 1998	Environment	Increased the Penalties for violators of Environmental Laws
Environmental Impact Assessment Regulations, 1995	Department of Environment	
Pollution Regulations, 1996	Department of Environment	Deals with general pollution including noise pollution, air & water pollution. Etc.
Effluent Limitations Regulations, 1995	Department of Environment	Sets standards for discharge of effluents into the environment by industry.
Public Health Act, 1971	Public Health Department	standards
Wildlife Protection Act, 1981	Forestry Department	An act to provide for the conservation, restoration & development of wildlife, for the regulation of its use, controls hunting etc.
National Parks Systems Act, 1981	Forest Department	An act for the preservation & protection of highly important natural & cultural features Regulation of scientific, educational & recreational use of Protected Areas "National Park System" includes all national parks, nature reserves, wildlife sanctuaries and natural monuments
National Monuments & Antiquities Act, 1972, Revised 1980	Archaeology Department	Protection of National Monuments & Antiquities
Fisheries Act, 1948	Fisheries Department	Regulates the fishing industry Declares a marine protected area via a Statutory Instrument.
Protected Areas Conservation Trust Act, 1995	PACT Office	Collects PACT Fee directed towards Protected areas management
Coastal Zone Management Act, 1998	Coastal Zone Management Authority	Wide provisions for recommending zoning & development in the coastal zone, Monitoring & scientific research in the coastal zone
Land Utilization Act, 1992	Land Utilization Authority	Regulates the use and subdivision of private lands and can declare Special Development Areas, which is a form of regional land use planning
Forest Act, 1927 Last revised 1998	Forest Department	Responsible for the regulation of the logging industry and the establishment and management of the forest reserve
National Lands Act, 1992	Ministry of Natural Resources	Responsible for the management of national lands
Water Industry Act, 2001	Ministry of Public Utilities	Responsible for the use, control and management of water resources, including catchment areas
Toledo Development Corporation Act, 2001	Ministry of Economic Development	Environmental Protection and Land Conservation

Land use area

In the Land Use area, the major deficiency is the lack of a National Land-Use Policy to guide sustainable development and the efficient allocation of land resources in an open and transparent manner. Of great concern are the apparent deficiencies in the system of land security, which indicates a need for improvements in the current system of cadastral surveying, tenure clarification, and property rights registration. In addition, there is the need to consolidate all land rights under a single land registry system, which is presently not the case. Other important areas needing attention are:

- To improve the efficiency and sustainability of land administration services offered to the public which is now outdated and highly bureaucratic and open to political interference and manipulation.
- To build capacity for land use planning at all levels of society, but most notably at the national, regional, and local levels.
- To include reforestation and afforestation as a legitimate land use in new legislation.
- To ameliorate the current system of land valuation and taxation.
- To strengthen the national institutions that provide land administration services.
- Need for a comprehensive system for land reform.

In terms of hosting projects under the CDM, the issue of long-term land security and property rights is important if investors are to minimize their risk and be assured that they will be rewarded with carbon benefits that accrue from their projects. In addition, it will greatly benefit project development if the land allocation system is efficient and transparent and that there is an established system of land use planning and zoning that takes into account the introduction of the CDM and its requirements for

national participation. The system of land valuation and taxation will be critical to hosting CDM projects. The current system under which forestland is assigned a lower value than cleared land needs to be revisited, as well as the tax incentives that are currently given to developed land vis-à-vis forested land, in which the forest owner is often penalized for not developing (clearing) the land which at times can be grounds for revocation of the lease agreement.

Other relevant questions for the future conduct of CDM projects in Belize are likely to include:

- Tax incentives -similar to development concessions- for CDM projects.
- Land tax incentives, which will encourage locals to dedicate their lands to CDM.
- Projects as a viable land use option.
- The speculation tax which currently stands at 5% of the unimproved value of undeveloped land over 300 acres will need to be revisited in view of the likelihood of foreign investment and potential ownership of foreign concern of land used for CDM projects.
- The development of safeguards to ensure that lands committed to long-term CDM projects will not be construed to be vacant and undeveloped, and therefore open to habitation by squatters. This indicates that the country will have to develop an adequate registration system for such parcels.
- Ensure that fiscal incentives are balanced and do not unfairly favor the exploitation of land for such use as agriculture at the expense of afforestation and reforestation. This issue can be tackled through the harmonization of sectarian fiscal incentives.
- Distrust of the government institutions, which have been known to bypass land tenure rights

and engage in the arbitrary cancellation of leases and the expropriation of property. CDM projects must have legal guarantees against such expropriation.

National actions to combat climate change

Participation in the conventions and established linkages

In 1992, Belize signed the United Nations Framework Convention on Climate Change (UNFCCC) and ratified it two years later, in 1994. In 1997, the country became a signatory to the Kyoto Protocol and subsequently ratified the agreement in 2001. Although endorsed by the Government of Belize, the necessary papers have yet to be filed with the Executive Board of the CDM. Until such procedures are carried out, the country will not be officially eligible to benefit under the arrangements set out in the Kyoto Protocol.

Belize has tried to become an active member of these bodies to the degree that its limited resources will allow. Currently, delegates have been appointed to the Intergovernmental Panel on Climate Change (IPCC) working groups, the Conference of the Parties, the Subsidiary Body for Scientific and Technological Advice, and attendance is regular at regional meetings on climate change issues within the Caribbean and Central America. In addition, the country has produced several reports dealing with climate change and its related issues. The main reports are:

- *National Report to the World Summit on Sustainable Development*
In July 2002, Belize submitted its First National Report to the World Summit on Sustainable Development in which it identified, among other things, the inadequacy of the current land resource management system within the country. This was especially felt in such areas as land use planning, the application of sound forest management practices, and the

management of the country's biodiversity. In addition, the report identified the threat to the coastal areas and the economy of Belize as a result of climate change, its concomitant rise in sea levels, and accompanying disruption in the established natural processes.

- *First National Communication to the Conference of the Parties of the United Nations Framework Convention on Climate Change (UNFCCC)*

Also in July 2002, the country submitted its First National Communication to the Conference of the Parties of the UNFCCC. This document addressed the anticipated implications to the country of climate change, which includes adverse physical, environmental, and economic impacts and recommended that priority actions be given towards adaptation measures.

The report, however, lamented the lack of specific information on the exact nature of the threat, its severity, and duration cited these as major constraints hampering the design of an appropriate national response. To date Belize still does not have an official national climate change office and therefore for the meantime the functions of the UNFCCC are headquartered at the National Meteorological Service offices.

- *Second National Communication to the United Nations Convention to Combat Desertification (UNCCD)*

Belize is a party to the UNCCD and as such is committed to undertaking actions that are compatible with combating desertification.

Although Belize does not have any of its territory experiencing desertification conditions and droughts are only occasional and mild, it still needs to act on a timely basis to ensure that the worst cases of these phenomena are never manifested locally. In addition, the country is legally and morally bounded to join with the rest of the world community in fighting these scourges that are increasingly affecting humankind. The country has identified land degradation and the loss of biodiversity as important

⁴Los Consejos Municipales lo forman todos los representantes de corregimiento y el Alcalde, todos elegidos por votación popular. Se ubican a nivel distrital de la provincia.

national development issues, which will require sustained and coordinated response. In the context of Belize's contribution to forwarding the goals of the UNCCD therefore, these two issues will become the focus of national activities.

Since Belize submitted its first report to the United Nations Convention to Combat Desertification (UNCCD), there have been tentative action on several fronts, but in the main progress has been slow. The country still does not have a National Action Plan (NAP) or an established National Coordinating Body (NCP) to guide its efforts in the realm of combating desertification and drought. These are critical prerequisites to implementing many of the provisions required by the UNCCD. The lack of a sustainable funding mechanism to carry out the necessary activity is chiefly to blame, but other culprits include frequent staff transfers and the recent spate of natural disasters that has tied up (and dried up) the human and financial resources of the country.

National inventory of greenhouse gases emissions

The country has prepared an inventory of its anthropogenic output of greenhouse gases (GHG) as part of its national commitment under the Convention on Climate Change. Like all non-annex 1 countries, Belize had the option of choosing any of the years from 1990–1994 as the baseline year. The country decided to establish 1994 for the inventory given the greater amounts of data available for that year. The base year calculations will serve as a reference marker against which to compare future inventories. This will help to provide some indication of the country's development trend and in particular its GHG emission levels over time. The 1994 inventory shows that Belize is a net remover of GHG from the atmosphere, sequestering twice as much greenhouse gases as was released into the atmosphere. The inventory showed that the land use and forestry sector was the biggest contributor to GHG emissions (see Table 2), however the nation's forest was also responsible for absorbing all the GHGs that was sequestered in the country.

Table 2
National Greenhouse Gas Emissions
(by sector)

Greenhouse Gases	Gigagrams	Percentage of Total
Energy	617.528	21
Industrial Processes and Solvents	1.735	< 0.1
Agriculture	58.807	2
Land Use Change and Forestry	2056.365	69
Waste	259.66	9
Totals	2994.095	101 +

In terms of overall impacts to global warming, the figures given for the different sectors do not tell the whole story since different gases will contribute to global warming in different ways. Methane for example has a greenhouse warming effect that exceeds carbon dioxide by 24.5 times, but even this

pales when compared to the effects of nitrous oxide, which for an equivalent mass, has an effect 320 times that of carbon dioxide.

With its small industrial base Belize produces very little of the more harmful GHGs such as nitrous

oxide, however it still manages to contribute to global warming because it does produce a substantial amount of methane which has a relatively high global warming potential (GWP). When its annual output is multiplied by its GWP of 24.5 the net effect of methane released into the atmosphere becomes equivalent to 6652.044 gigagrams of CO₂, which alone exceeds the total capacity of the national sinks, which can only sequester about 6 thousand gigagrams per annum (see Table 3). Most of the methane produced in Belize is derived from the decomposition of solid waste with a sizeable proportion coming from centralized and individual septic units. According to

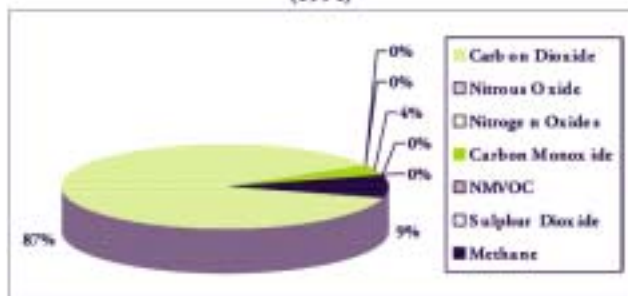
the Population Census (2000), these systems are now being used by approximately one-half of Belizean households (49.9%).

The importance of these gases means that the main sectors in Belize to monitor, mitigate and adapt for reduced GHG emissions are the land use and forestry sector, followed by waste management and energy. Graphic 1 shows the proportion of greenhouse gases produced in the national baseline survey while graphic 2 shows the proportion of carbon stored in woody biomass and soils in different climatic regions.

Table 3
Principal GHG Emission / Reduction by Sector
and Global Warming Potential (GWP)

Activity Sector	Total GHGs (Gg)	Principal Gas (%)	% of Total GHG Emissions	GHG emission converted to GWP Factor
Biomass Stock Change (Forest Growth)	5750.721	CO ₂ (100)	-192	-61
Abandoned Land (Revegetated after Clearance)	415.14	CO ₂ (100)	-14	-4
Forest Conversion to Agriculture	1731.304	CO ₂ (96)	58	18
Fossil Fuel Use Transport	327.919	CO ₂ (95)	11	3
Emissions from Soil after Forest Clearance	325.061	CO ₂ (100)	11	3
Domestic Wastewater (Septic System)	258.537	CH ₄ (100)	9	67
Fossil Fuel Use – Energy Production	139.892	CO ₂ (98)	5	1
Burning Savannas	44.868	CO ₂ (95)	1	<1
Fossil Fuel Use – Manufacturing & Construction	40.11	CO ₂ (99)	1	<1
Field Burning of Agricultural Residue	10.335	CO (90)	<1	N/A
Livestock – enteric Fermentation	2.837	CH ₄ (100)	<1	1
Solid Waste Disposal on Land	1.107	CH ₄ (100)	<1	1

Graphic 1
National Greenhouse Gas Emissions
(1994)



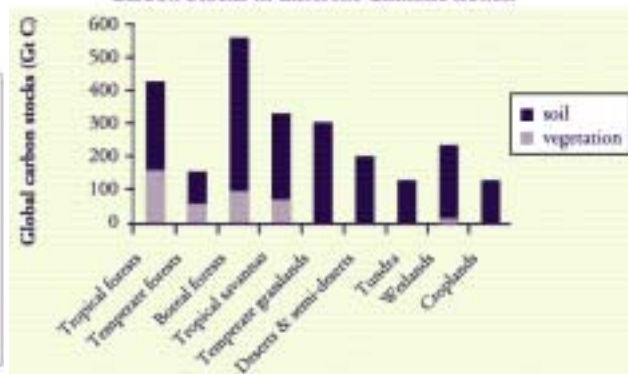
Vulnerability of the country face to the climate change

Because of its extensive low lying coastline and numerous offshore islands, Belize is recognized as one of those countries most vulnerable to climate change. Apart from flooding low lying coastal areas where about 45% of the population lives, climate change and its attendant anticipated increase in sea levels and disruption to the weather patterns will negatively impact key industries such as tourism, agriculture, mariculture, and so forth.

In the forest sector, entire ecosystems may disappear, giving way to new ecosystems. The formation of new ecosystems may not allow enough time for new species to adapt and colonize these areas, hence making certain species vulnerable to extinction if their habitat range is narrow. In addition, since climate change may produce extremes in weather conditions, flooding as well as droughts may become more commonplace, resulting in increased and destructive wildfires, drought, pest, and disease pathogens.

The inundation of the lowlands under the climate change scenario will result in the mass movement of the population away from coastal areas onto higher lands in the interior. These uprooted communities will then need to re-establish themselves on previously forested lands, oftentimes along steep slopes, resulting in mass wasting of topsoil due to erosion and creating ripe conditions for dangerous landslides. There is also the possibility that leakage of fertilizers and agro-chemicals from farms located along these slopes will become commonplace resulting in pollution of watersheds.

Graphic 2
Carbon Stocks in different Climatic Zones.



Climate Change Projects in the Land Use and Forestry Sector

Belize has hosted several climate change projects before, but only one that is specifically geared at addressing climate change within the land use and forestry sector, while another is currently being planned. These projects are:

1) Rio Bravo Carbon Sequestration Project

The Rio Bravo Conservation and Management Area (RBCMA), owned and managed by the NGO called Programme for Belize (PFB), hosted one of the first projects in the pilot phase of Activities Implemented Jointly. The project was launched in 1995 and had the involvement and financing of five American Power Companies. Within the agreement made between the NGO and the power companies, financing would be made available for the PFB to undertake certain forestry related intervention measures to enhance carbon uptake such as silvicultural treatments and an active program of fire suppression. The project also enabled the organization to purchase two large blocks of land that were in danger of deforestation, the first parcel measuring 13,000 ha. and the second measuring approximately 10,935 ha.

The Rio Bravo Carbon Sequestration Project also had an outlay of funding to conservation work including sustainable forest management, training and forestry related research. The research centered on establishing sample plots to measure carbon biomass in the standing vegetation matter, plant litter and soils. The permanent sampling plots continue to be

used and has become a valuable baseline, available nationally to measure carbon biomass under a range of conditions and ecosystems. These inventories were invaluable in preparing Belize's first inventory on sources and sinks that were submitted in the First National Communications.

Under the project effective fire suppression control measures were instituted over the entire property but centering on the vulnerable Old Harry Savannah and the pine ridge area behind San Felipe village in the Orange Walk District.

2) Mountain Pine Ridge Carbon Sequestration Project

It is an initiative to reforest areas devastated in the Mountain Pine Ridge Forest Reserve due to the recent Bark Beetle infestation. This project is in its preliminary stages, but the objective is obtain carbon credits for the reforestation work, with the justification that without this intervention the pine stands would not be able to reestablish themselves naturally in the volumes that were evident before the infestations.

INSTITUTIONAL FRAMEWORK

General institutional framework of the Clean Development Mechanism (CDM)

Projects proposed for funding under the Clean Development Mechanism (CDM) must be approved by various bodies before they will be allowed to proceed. The objective is to ensure that projects meet all the eligibility requirements of the national government and the governing body of the CDM. The groundwork rules and regulations must be followed, however, many of them have yet to be decided upon by the CDM and are in their present form, incomplete.

In addition many countries including Belize, do not have in operation the national institutional structures, which will implement and enforce the rules of the executive body. When these bodies come into operation, it is presumed that they will be incorporated into other existing institutions but under different mechanisms. It will be up to the government of Belize to decide on the national policies and strategies that it wants to have in place to regulate the activities of the CDM nationally. These activities must be in line with the country's developmental priorities and sustainable development policies.

The institutional structure of the CDM will have several layers. The main ones of the operational structure are:

- *The Conference of the Parties (COP)* is the supreme body of the United Nations Framework Convention on Climate Change (UNFCCC) and keeps under regular review the implementation of the Convention and any of the related legal instruments that the COP may adopt. Within its mandate the COP makes the decisions necessary to promote the effective implementation of the UNFCCC. In conformity with the Convention, and in regards to the CDM it "reviews reports submitted by its subsidiary bodies and provides guidance to them" as well as to "promote and guide, in accordance with the objective and provisions of the Convention, the development and periodic refinement of comparative methodologies, to be agreed on by the COP, inter alia, for preparing inventories of greenhouse gas emissions by sources and removals by sinks, and for evaluating the effectiveness of measures to limit the emissions and enhance the removals of these gases".
- *The Executive Board* is expected to play the following main roles in the operation of the CDM:
 - Liaise with the Subsidiary Body for Scientific and Technological Advice (SBSTA) on Land Use, Land Use Change and Forestry (LULUCF) in the CDM.
 - Baseline and monitoring methodologies.
 - Small-scale project activities.
 - Accreditation of operational entities.
 - Maintain a CDM registry.