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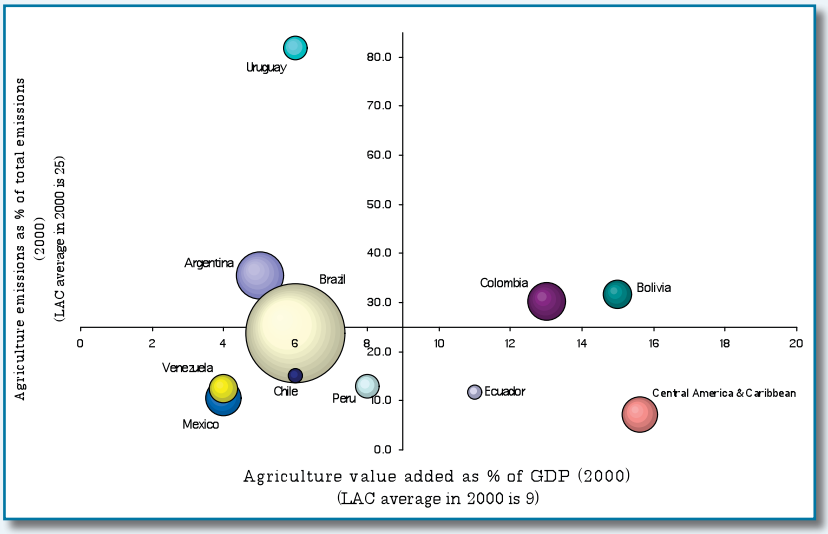
HONDURAS 53794

Country Note on Climate Change Aspects in Agriculture

This Country Note briefly summarizes information relevant to both climate change and agriculture in Honduras, with focus on policy developments (including action plans and programs) and institutional make-up.

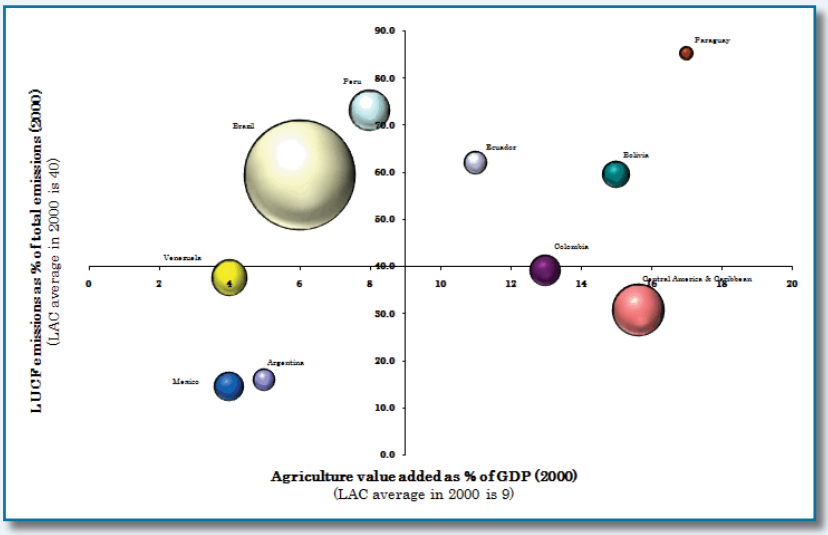
Contribution of agriculture (without LUCF) to the economy and to emissions in LAC countries

(size of bubble in $MTCO_2$ of LUCF emissions; axes cross at LAC average)



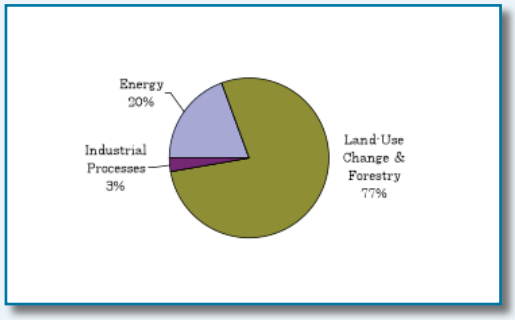
Contribution of agriculture to the economy and of LUCF to emissions in LAC countries

(size of bubble in $MTCO_2$ of LUCF emissions; axes cross at LAC average)



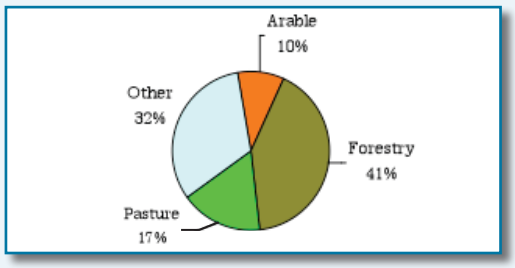
Note: In the first bubble graph, the total emissions for Uruguay do not account for the positive effects of LUCF (i.e. afforestation efforts). If they are considered, agriculture represents 222% of total emissions. Because of afforestation efforts in Uruguay and Chile, land use change and forestry (LUCF) is not a net contributor to emissions; hence the countries do not appear in the second bubble graph, but are considered in the calculation of the average in the vertical axis.

Percent of GHG emissions in CO_2 equivalent, by sector (2000)



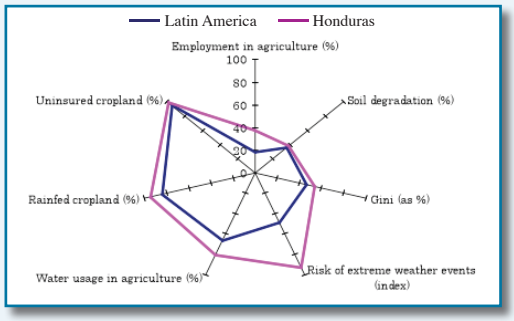
Source: World Resources Institute http://cait.wri.org

Land use (2005)



Source: World Development Indicators

Vulnerability Indicators



Note: Employment in agriculture (% of total employment)*; Rainfed cropland (% of total cropland)*; Gini*; Water usage in agriculture (% of total annual fresh water withdrawals)*; Uninsured cropland (% of total cultivated land area)**; Soil degradation (% of total land)***; Risk of extreme weather events (index; annual average 1997-2006)****

Sources: *World Development Indicators 2007, 2000-2007 average; **IADB, IICA, 2002/2003 figures; ***FAO AGL 2005[1]; ****Germanwatch

[1] http://www.fao.org/landandwater/agll/glasod/glasodmaps.jsp?country=HND&search=Display+map+%21

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Summary

Like most countries in Latin America, Honduras has submitted one national communication to the United Nations Framework Convention on Climate Change (UNFCCC) with a second one under preparation. Land use change and forestry are by far the largest contributors to GHG emissions in the country. The emission reduction potential of the sector is large, but not sufficiently explored. Honduras counts with the largest number of registered CDM projects in Central America – 15 CDM projects, of which 3 are in the agricultural sector. It is estimated that Central America produces less than 0.5% of global carbon emissions, but it is one the most vulnerable regions to climate change related impacts on the planet[2]. In 2004, the United Nations identified Honduras among the first 20 most vulnerable countries in the world in terms of vulnerability to floods and the most vulnerable to hurricanes. Honduras was also identified as the most vulnerable country in Central America by the British Society Maplecroft in their study titled "Vulnerability Index to Climate Change"[3]. Agriculture is highly vulnerable to climate variability and weather extremes, this coupled with problems of land degradation in the country. A greater emphasis on reducing soil degradation, reforestation and developing and applying adequate insurance mechanisms can be placed for better management of public resources in light of natural disasters in the agriculture sector.

Working definitions

Agriculture is defined as a managed system of crops, livestock, soil management, forest resources (productive use, goods & services) and water resources (irrigation), including land use and land use change. **Climate change** encompasses both **mitigation** and adaptation activities within the agricultural sector. On the mitigation side, the focus is on the potential to reduce green house gas emissions by the different sub-sectors. On the **adaptation** side, the focus is on the potential to build resilience to climate and to increase the adaptive capacity through sustainable management of agriculture and other complementary factors (e.g. financial instruments). There is no specific **time frame** used in the country notes. An effort was made to collect the most recent available information on country indicators and policy matters.

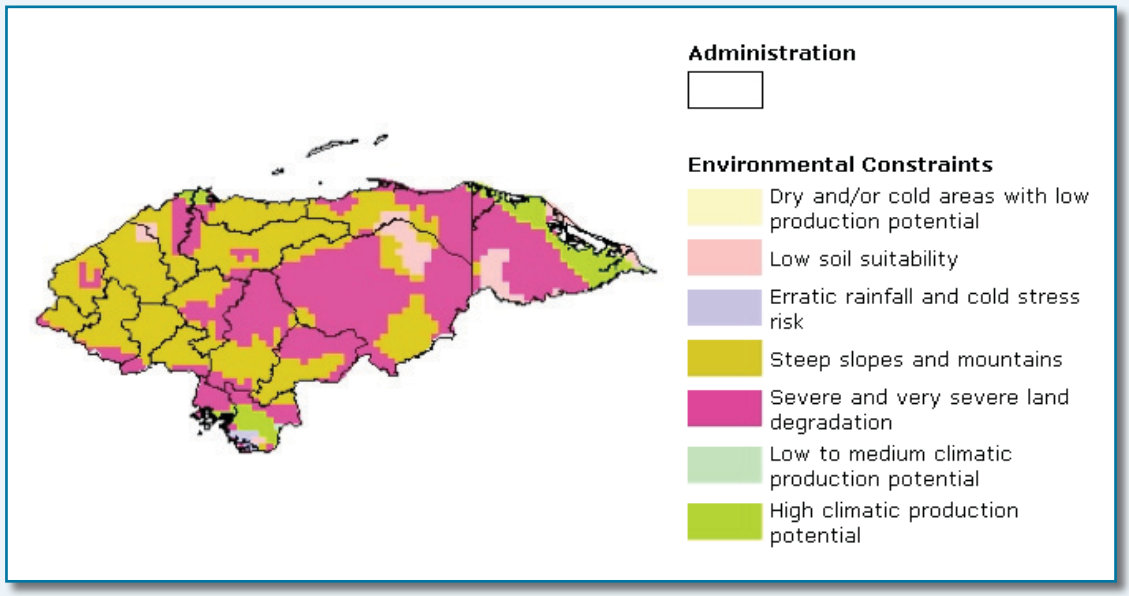
Acknowledgments:
This *Country Note* was produced by a World Bank team of specialists (in agriculture, forestry, social development, risk and knowledge management) from the Latin America and the Caribbean region and other units of the World Bank. The team is very grateful for all the comments and suggestions received from the focal points on climate change and agriculture in many of the countries.

[2] http://www2.ohchr.org/english/issues/climatechange/docs/submissions/Guatemala.pdf, pg.6
[3] http://www.maplecroft.com/climateChangeReport.php

1. The Climate Context

The baseline map provides a visual characterization of Honduras' agricultural potential given current environmental constraints and their regional distribution. Around 27% of Honduras' land is used for agriculture (17% for pasture and 10% for cultivation), with forestry occupying 41% of the land in the country (WDI, 2005).

Baseline map: Current Major Environmental Constraints related to Agricultural Potential



Source: FAO **Note**: For more maps on Honduras and agricultural resources, go to http://www.fao.org/countryprofiles/Maps/HND/04/ec/index.html

1.1. Country Projections

According to the First National Communication, the following future impacts from climate change are to be expected in Honduras:

a) **increases in temperature** – it is probable that the temperature will increase between 0.8°C to 3.3°C in the North and North-West of country, between 0.9°C and 3.7°C in the South and South-West of the country, between 0.8°C and 3.3°C in the East and between 0.6°C and 2.7°C in the North-East part of the country, under a pessimistic scenario. The highest temperature increases will occur during the months of May and June.

b) **reduction in precipitation** – precipitation will probably be reduced by 7-30% in the North and North-West, 8-37% in the South and South-West, 8-36% in the East an 7-28% in the North-East, under the pessimistic scenario. The highest reduction will occur between the months of November and April.

In recent years (between 2001-2007), storms and floods have had the highest human and economic impact in Honduras, with losses for the period 1997-2006 averaging at 0.09% of GDP – 206,821 people have been affected by storms (4 events) with the cost of damages reaching US$ 127 million and 15,000 people have been affected by floods (3 events) with the

cost of damages reaching US$128 million[4]. The South and South-West of the country is the most vulnerable to climate change related events - the area with the highest temperature increase and the highest precipitation reduction.

1.2. Agriculture-Related Impact

The rainfall resulting from Hurricane Mitch, which hit Honduras in 1998, resulted in severe crop losses in the country, affecting more than 29% of the country's arable land. The damage sums up to a destruction of at least 70% of the country's crops, as follows: 58% of the corn output, 24% of sorghum, 14% of rice and 6% of the bean crop. The total crop damage alone was estimated from US$900 million US$1.7 billion. The livestock sector suffered damages as well with the death of 50,000 cattle and the loss of 60% of the poultry population and shrimp production was completely destroyed. Total animals losses amounted to US $300 million[5]. The rain storm that hit Honduras in October 2008 is said to have destroyed some 15,000 hectares of crop with more being predicted to have been affected[6].

2. The Policy Context

Honduras has submitted only one **National Communication**[7] to the **United Nations Framework Convention on Climate Change**[8] (**UNFCCC**) in 1997, laying out the actions that the governments has already taken and the analytical basis for its policy response to climate change and the commitment to take future actions within an official international framework. The Communication established the First National GHG Inventory with 1995 as its base year, it described the strategy to reduce GHG in Honduras, including for the agricultural and forestry sector and it included the results of vulnerability studies to climate change for the water sector.

A **Second National Communication** is in the works and scheduled to be completed by 2010. It aims to propose specific mitigation and adaptation measures to climate change for the various sectors of the economy through a **Program of Mitigation and Adaptation to Climate Change**. It will also include the Second National GHG Inventory with 2000 as its base year.

2.1. National Climate Change Plans, Strategies and Programs

The **National Climate Change Program**[9], developed by **SERNA**, conducted vulnerability studies by economic sector associated to medium and long term phenomenon such as climate change. Its main objective is to facilitate, at the national level, actions, programs and plans designed to meet the commitments of the country to the UNFCCC and to the Kyoto Protocol. It has been directly involved in producing the First National Communication which includes an adaptation and a mitigation plan for the various sectors, including agriculture and forestry, in initiating the preparation of the Second National Inventory and the Second National Communication, in producing a climate change manual with educative purposes as well as in national training in issues of climate change.

As a product of the Second National Communication, a National Climate Change Strategy is being prepared as well as set of policies aimed at generating mitigation and adaptation options at the national and local level for three priority sectors: energy (transportation), land use change and forestry (LUCF) and water resources.

[4] http://www.emdat.be/Database/CountryProfile/countryprofile2.php?disgroup=natural&country=hnd&period=1999$2008
[5] http://en.wikipedia.org/wiki/Hurricane_Mitch#Honduras
[6] http://reliefweb.int/rw/rwb.nsf/db900SID/KSAI-7KQ49A?OpenDocument
[7] http://unfccc.int/resource/docs/natc/honnc1.pdf
[8] www.unfccc.int
[9] http://www.serna.gob.hn/convenios_ambientales/cambio_climatico/Documents/Cambio%20Climático/1-_Informacion_Cambio_Climatico_pagina_web.pdf

2.2. Regional initiatives

Institutions:

The **Central American Commission on Environment and Development**[10] (**CCAD**, Spanish acronym) is a regional institution in charge of the environmental agenda of the region. It counts with an information portal -**Ecoportal**[11]- which includes information on various environmental issues from the region, including information on climate change issues (programs, plans, initiatives) in all the Central American countries.

The **Regional Technical Assistance Unit**[12] (**RUTA**, Spanish acronym) is a common initiative of the governments of the seven Central American countries and seven international development agencies aimed at fostering the sustainable development and reduction of poverty in rural areas of Central America. Amongst its working areas are the environment and natural resources and the Central American agricultural policy.

Projects:

The **Project Forests and Climate Change in Latin America**[13] (**PBCC**, Spanish acronym) financed by the Food and Agriculture Organization (FAO) and the government of the Netherlands with the headquarters in Honduras and realized in coordination with the **Central American Commission on Environment and Development**[14] (**CCAD**, Spanish acronym) was developed with the purpose of helping Central American countries develop the mitigation potential of forests to climate change and to take advantage of the opportunities offered by the Clean Development Mechanism. As part of this, it launched a **Central American Series on Forests and Climate Change**[15] for Belize, Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua and Panama and a regional one. These eight publications describe the mitigation potential of forests and the legal and institutional framework for each Central American country and for the region. It also includes a regional document presenting the overall situation of the region in the Clean Development Mechanism.

The Project on **Capacity building for Stage II adaptation to climate change** (**Costa Rica, Cuba, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama**) is funded through the GEF Trust Fund and is implemented by UNDP. Central America, Mexico and Cuba serve as the pilot region for elaborating and applying an Adaptation Policy Framework for preparing adaptation strategies, policies and measures. The application of this framework will demonstrate how policy for adaptation can be integrated into national sustainable development for at least three human systems: water resources, agriculture and human health. This demonstration project builds upon the Stage I vulnerability and adaptation assessments of the Initial National Communications of the eight participating countries of the region and will prepare them to move onto Stage III Adaptation. The outputs of the project, Stage II adaptation strategies may be used for preparing second National Communications[16].

Programs:

The **Regional Strategic Program for Management of Forest Ecosystems**[17] (**PERFOR**, Spanish acronym) designed for the period 2008-2012 has as a main objective the improvement of forest management in Central America and the Dominican Republic. Among others, it aims to position the forest agenda in the inter-sectoral agenda of the **Regional Agro-environmental**

[10] www.ccad.ws
[11] http://www.ccad.ws/ecoportal/cambio/camnica.html
[12] www.ruta.org
[13] http://www.fao.org/regional/honduras/pbcc/Descripcion.htm
[14] http://www.ccad.ws/
[15] http://www.ccad.ws/forestal/pp_regional.htm
[16] http://unfccc.int/files/adaptation/adverse_effects_and_response_measures_art_48/application/pdf/200609_background_latin_american_wkshp.pdf
[17] http://www.sica.int/ccad/program.aspx?IdEnt=2

Strategy (**ERA**, Spanish acronym), thus contributing to poverty reduction, reduction of vulnerability to climate change events and to mitigation and adaptation to climate change.

A **Regional Climate Change Strategy**[18] **for Central America** is currently in preparation and will include five areas: i) vulnerability and adaptation; ii) mitigation; iii) institutional and capacity development; iv) education, public awareness and v) international management. The initial guidelines for this strategy have been approved in April 25, 2008, an action plan should be completed within six months from the approval of the guidelines and the strategy should be finished within one year. The strategy will represent a key instrument for future climate change adaptation and mitigation actions in the region.

The **Central American Forest Program**[19] (**PROCAFOR**, Spanish acronym), is a program financed by the Finnish Cooperation, aimed at improving the well-being of rural communities through sustainable forest management in the region.

2.3. Agricultural Sector Initiatives

3. The Institutional Context

The **Secretariat of Natural Resources and Environment**[20] (**SERNA**, Spanish acronym) is the national authority on environmental issues in Honduras and also is the Designated National Authority (DNA) on climate change and on Clean Development Mechanism (CDM). It counts with a **Climate Change Unit**, responsible for all activities related to climate change.

3.1. Inter-Sectoral Coordination

The Climate Change Unit of SERNA counts with an Inter-institutional Technical Committee consisting of government institutions, NGOs, academia, private sector and international organizations, as well as a group of experts with whom it coordinates, consults and raises awareness of the different climate change activities, projects and programs that are taking place.

3.2. Agricultural Sector Institutions

The **Secretariaty of Agriculture and Livestock**[21] (SAG, Spanish acronym) is responsible for formulating policies related to the protection of the agriculture and livestock sector, as well as forestry. Some departments or programs executed by SAG, though not directly containing a climate change component, could contribute with actions and projects to the Clean Development Mechanism (such as the **Directorate for Research, Science and Agricultural Technology**, the **National Directorate for Sustainable Rural Development**).

The **National Institute for Forest Conservation and Development of Protected Areas and Wildlife**[22] (**ICF**, Spanish acronym), is the Government authority responsible for the forest sector, according to article 13 of the New Forest Law . It focuses its activities according to the basic principles and objectives of the Forestry Legal Regime, Protected Areas and Wildlife.

3.3. Fostering Capacity to Deal with Climate Change

Emission inventories: To date, Honduras has only one National GHG Inventory with 1995 as its base year with a second one for 2000, as part of the Second National Communication.

[18] http://www.sica.int/ccad/temporal/LINEAMIENTOS.pdf
[19] http://www.elsalvadorforestal.com/nota.php?id=53
[20] www.serna.gob.hn
[21] http://www.sag.gob.hn/
[22] http://www.icf.gob.hn/

The inventory includes data on emissions from agriculture, land-use change and forestry, providing disaggregated data by type of emission and type of agricultural resource.

Studies related to climate change and agriculture: in preparation of the execution of the Central American Project for Climate Change in 1995 and executed by the US Environmental Protection Agency, the country prepared vulnerability studies for water resources, vulnerability of maize crops to climate change and vulnerability of coastal marine resources. A vulnerability study of the agricultural sector is being undertaken and identified mitigation and adaptation measures will be included in the National Climate Change Strategy, which is currently under preparation.

The World Bank published a flagship document for the entire region of Latin America and the Caribbean titled "Low carbon, High Growth: Latin American Responses to Climate Change"[23], encompassing information on climate change impacts in the region, on the potential contribution to mitigation efforts as well as a listing of future low carbon-high growth policies.

4. The Impact of Agriculture on Climate Change - Mitigation Measures

According to the Second Greenhouse Gas Inventory for 2000, agriculture combined with land-use change and forestry account for 30% of total emissions during the year 2000, with land-use change and forestry accounting for 25% of CO_2 emissions. Furthermore, agriculture accounts for 43% of methane emissions in the country, mainly from enteric fermentation from farm animals (95% of total) and for 90% of nitrous oxide mainly from croplands (55% of total) and burning of savannas. Honduras' carbon dioxide emissions per capita in 2004 stand at 1.1t CO_2/capita compared to the Latin America region of 2.6t CO_2/capita and the world at 4.5t CO_2/capita[24].

4.1. Action Frameworks

4.1.1. Forestry and Land Use Change

Land-use change and forestry accounted for 40,383.75 Gg of CO_2 emissions in 2000 with 50,970.79 Gg CO_2 being sequestered by regenerated forests from abandoned agricultural land (53% of total CO_2 absorption). Land-use change and forestry are also responsible for 24% of methane emissions and 5% of nitrous oxide emissions from in-situ burning of forests.

The annual average deforestation rate for Honduras for the period 1990-2005 is 2.5%. This represents an increase from the period 1990-2000 when the deforestation rate stood at 1%[25]. According to the Forestry Sector Analysis in Honduras, "Background Paper for the Preparation of Country Environmental Analysis 2007", the productive activities of agriculture and livestock have been identified as major causes of forest resources loss in the broad leaf forest, while fires and shifting cultivation are the causes of pine tree forest deterioration. Other ecosystems such as mangroves have been reduced substantially by increasing shrimp farm activity especially in the Gulf of Fonseca and the increasing urbanization for tourism on the coast in the Bay Islands. Recent studies reveal that the growing and unregulated process of population growth accompanied by a pattern of scattered settlements, especially in areas of frontier forest, is growing especially as irreversible loss of forested areas. In addition the country has a high dependence on wood as an energy source for poor households.

[23] http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2009/02/27/000334955_20090227082022/Rendered/PDF/476040PUB0Low0101Official0Use0Only1.pdf
[24] http://hdrstats.undp.org/countries/country_fact_sheets/cty_fs_hnd.html
[25] World Development Indicators, 2005

The **Forest Action Plan** (**PLANFOR**, Spanish acronym) in Honduras constitutes a set of priorities for applied forestry research, among which are plantation management, studies of agroforestry and forest grazing systems and the conservation of forest genetic resources. This program doesn't currently have a climate change component, but is an instrument that could be used for the application of GHG emission mitigation measures for this sector. According to the First National Communication, by applying mitigation measures to this sector, thus reducing emissions, the quantity of sequestrated carbon by the year 2015 could be 20% higher than the estimated carbon sequestered by 1995 by sustainable forest management and conservation.

As part of the readiness mechanism of the Forest Carbon Partnership Facility[26] (FCPF), Honduras submitted a **Readiness Plan Idea Note** (**R-PIN**)[27] providing an overview of land use patterns, causes of deforestation, stakeholder consultation processes and potential institutional preparedness in addressing reducing emissions from deforestation and forest degradation (REDD). The FCPF aims to reduce deforestation and forest degradation by compensating developing countries for greenhouse gas emission reductions. The partnership became functionally operational on June 25, 2008.

A new Forestry Law was passed in 2007, creating:

a) Forest Reinvestment Fund for management plans in state forest areas.

b) Plantation Development Fund for the promotion of forest plantations in deforested and degraded areas.

c) Fund for the Municipal Forest Management to finance infrastructure and forestry activities prescribed in the management plans to run in municipal forest areas, and works for social development in communities located in priority areas where the income originated.

d) Fund responsible for the Management of Protected Areas and Wildlife for conservation and management of protected areas and wildlife, according to the guidelines of the National System of Protected Areas of Honduras (SINAP).

The World Bank's BioCarbon Fund is supporting the Pico Bonito Forest Restoration afforestation/reforestation project in Honduras. The project would generate an estimated 850,000 tCO_2e emissions reductions by 2017, while supporting the restoration of degraded forest habitats and establishment of sustainable income generation options, and conserve globally and regionally important biodiversity.

4.1.2. Livestock

Livestock is responsible for 98% of all methane emissions from the agricultural sector, mainly due to enteric fermentation of farm animals (94%), followed by handling of farm manure (4.1%).

The First National Communication identifies the following mitigation measures for the livestock sector; i) improvement of livestock productivity through genetic improvement;

[26] http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/ENVIRONMENT/EXTCARBONFINANCE/0,,contentMDK:21631703~menuPK:5216269~pagePK:64168445~piPK:64168309~theSitePK:4125853,00.html

[27] http://www.forestcarbonpartnership.org/fcp/sites/forestcarbonpartnership.org/files/Documents/PDF/Honduras_R-PIN_Revised_english_Feb_2009.pdf

ii) improvement of animal diet through natural regeneration of pastures and implementation of pastures with legumes for animal feeding, thus improving livestock productivity and food digestibility resulting in less methane emissions and iii) promoting the use of bio-digesters of animal manure in pilot farming communities, thus reducing methane emissions and using the gas as an alternative source of energy.

4.2. Carbon Trading and Agriculture

Under the Clean Development Mechanism (CDM), developed (also referred to as Annex I) countries can implement project activities that reduce emissions in developing (non-Annex I) countries. Though the CDM is expected to generate investment in developing countries, especially from the private sector, and promote the transfer of environmentally-friendly technologies in that direction, the global share of agricultural sector projects (including afforestation and reforestation) is very small (5.71% of total registered projects globally as of December 2009)[28] and the potential is country-specific. Latin America, as a region, currently holds the largest share of registered agricultural projects globally, 61% (75 projects).

As of December 2009, there are 15 registered projects in Honduras. Currently, there are 3 registered CDM projects in agriculture in Honduras, the largest number among Central American countries[29].

The World Bank has mobilized a fund to demonstrate projects that sequester or conserve carbon in forest and agro-ecosystems. The BioCarbon Fund, a public/private initiative administered by the World Bank, aims to deliver cost-effective emission reductions, while promoting biodiversity conservation and poverty alleviation. In principle, the BioCarbon Fund can consider purchasing carbon from a variety of land use and forestry projects; its current portfolio includes Afforestation and Reforestation, Reducing Emissions from Deforestation and Degradation and the Fund is currently exploring innovative approaches to account for agricultural soil carbon.

5. Impact of Climate Change on Agriculture - Adaptation Measures

Past studies in the agricultural sector have shown a reduction in crop yields due to temperature increases and a shortening of the growing period. In addition, the First National Communication identified a National Adaptation Plan with specific adaptation measures for the forestry, water and agricultural sector as a response to climatic variability and natural disasters impacting the country in recent years, and specifically the agricultural sector.

5.1. Action Frameworks

5.1.1. Land Management

The intensity of fertilizer use in Honduras of 87kg/hectare of cropland in 1999 is higher than the Central America and the Caribbean average of 65kg/hectare of cropland[30]. This has shown an increasing trend compared to the situation in 1993 when this intensity (47kg/ha of cropland) was half as high as the region average (92kg/ha of cropland)[31].

5.1.2. Water Use

Agriculture is responsible for 80% of freshwater withdrawal in the country. It is highly reliable on rainfall as only 5.6% of the total cropland is currently under irrigation, compared to the Latin America and the Caribbean average of 11.4%[32].

[28] http://cdm.unfccc.int/Statistics/Registration/RegisteredProjByScopePieChart.html
[29] http://cdm.unfccc.int/Projects/projsearch.html
[30] http://earthtrends.wri.org/pdf_library/country_profiles/agr_cou_340.pdf
[31] World Development Indicators, 2006
[32] World Development Indicators, 2006

Program for Sustainable Agriculture in the Hillsides of Central America[33] (PASOLAC, Spanish acronym) – implemented by the Swiss Inter-cooperation Foundation, it operates in Nicaragua, Honduras and El Salvador in cooperation with national authorities and municipalities and aims to support small and medium hillside agricultural producers by promoting sustainable water and soil management practices.

5.2. Social Aspects and Interventions

Many people in rural areas derive their livelihoods from agriculture and can be disproportionately affected by changes in climate.

Inequality in Honduras is high, with a Gini index score of 53.8. The gaps in equality of income and access to services occur mostly between urban and rural areas. Honduras exhibits the highest rate of rural poverty in Central America (75%) and extreme rural poverty of 63%[34]. The rural population comprises 53.5% of the total population. Agriculture employs about 35% of the country's active population and generates about 75% of all exports.

Family Allowance Program[35] (**PRAF**, Spanish acronym) – initiated in 1990 to compensate the poor for the loss of purchasing power due to macroeconomic adjustment. It was restructured in 1998 to include a conditional cash transfer component in order to promote basic education and health care among families in extreme poverty. It operates in 70 selected municipalities in seven departments of Honduras. Geographic targeting was based on high grades of malnutrition according to the 1997 Height Census of First Grade School Children.

Central American Indigenous and Peasant Coordination Association[36] (**ACICAFOC**, Spanish acronym) – a community-based organization working with rural communities across Central America to exchange information and promote the sustainable use of natural and cultural resources. It works in the following areas: Community forest management; Community management of water and environmental services; Local eco-tourism and agro-ecotourism; Sustainable production and commercialization. Its **Sustainable Watch** project created a network of NGOs and CSOs in Asia, Africa to promote consistent qualitative monitoring of sustainable development within countries and raise emerging issues to national and international attention. Focal points for this project in Central America so far are Guatemala, Nicaragua and El Salvador.

World Bank, ***Nuestras Raíces* Program**[37] (2004-2009) – increasing participation of indigenous and Afro-Honduran groups in local and national development processes. It acts as a mechanism to channel funds to these groups. The program is nation-wide and there is no specific focus on climate change or rural areas.

5.3. Insurance Instruments

Agricultural insurance was first introduced in Honduras in 2000. The Government, through BANADESA (Banco Nacional de Desarrollo Agropecuario), subsidizes 50% of insurance premiums for corn and requires its clients to purchase agriculture insurance in order to access credit. The private insurance sector has been developing a wide variety of insurance products from MPCI to index based.

[33] www.pasolac.org.ni
[34] http://www.ruralpovertyportal.org/english/regions/americas/index.htm
[35] http://www.gob.hn/portal/poder_ejecutivo/desconcentrados/praf/
[36] http://en.acicafoc.org/
[37] http://go.worldbank.org/3A71L91KH0

In terms of regional initiatives aimed to support the development of agricultural insurance in Central America, the **Inter American Federation of Insurance Companies**[38] (**FIDES**, Spanish acronym) groups the different agricultural insurance companies in Latinamerica. They currently provide technical assistance to the private insurance sector of Nicaragua, Guatemala and Honduras for developing agricultural insurance and are being financed by Grants from the World Bank, CABEI and Inter American Development Bank.

The Government of Honduras has two instruments in place that support the agriculture sector in managing climate risks:

a) Premium subsidies for agriculture insurance are provided by BANADESA to corn growers to finance up to 50% of agricultural insurance premium.

b) Agriculture Insurance Committee: the Government recently created a public-private committee to support the development of agriculture insurance in the country. The committee has not yet met.

The following is a list of government entities and donors involved in initiatives relating to climate risk management for agriculture in Honduras:

1. **Public sector:**
   a) BANADESA: The second tier public Bank administers the agriculture insurance subsidy and has been quite innovative in addressing agriculture risk management instruments (such as price hedging for coffee producers).

   b) SAG: The Ministry of Agriculture has been leading the public sector support to the development of agriculture insurance by establishing a committee to develop public policy in support of agricultural insurance development.

2. **Donors:**
   a) The World Bank is supporting several insurance companies in developing agriculture (index-based) insurance contracts.

   b) IADB and CABEI are currently financing work through the association of insurance companies (CAHDA) for strengthening the regulatory framework and information platform for the development of agriculture insurance.

[38] www.fides.com

About *Country Notes on Climate Change Aspects in Agriculture...*

The ***Country Notes*** are a series of country briefs on climate change and agriculture for 19 countries in Latin America and the Caribbean region, with focus on policy developments (action plans and programs), institutional make-up, specific adaptation and mitigation strategies, as well as social aspects and insurance mechanisms to address risk in the sector. The ***Country Notes*** provide a snapshot of key vulnerability indicators and establish a baseline of knowledge on climate change and agriculture in each country. The ***Country Notes*** are the beginning of a process of information gathering on climate change and agriculture. The ***Country Notes*** are "live" documents and are periodically updated.

LATIN AMERICA AND THE CARIBBEAN REGION

AGRICULTURE AND RURAL DEVELOPMENT TEAM

Feedback

For comments and/or suggestions, please contact Svetlana Edmeades at sedmeades@worldbank.org