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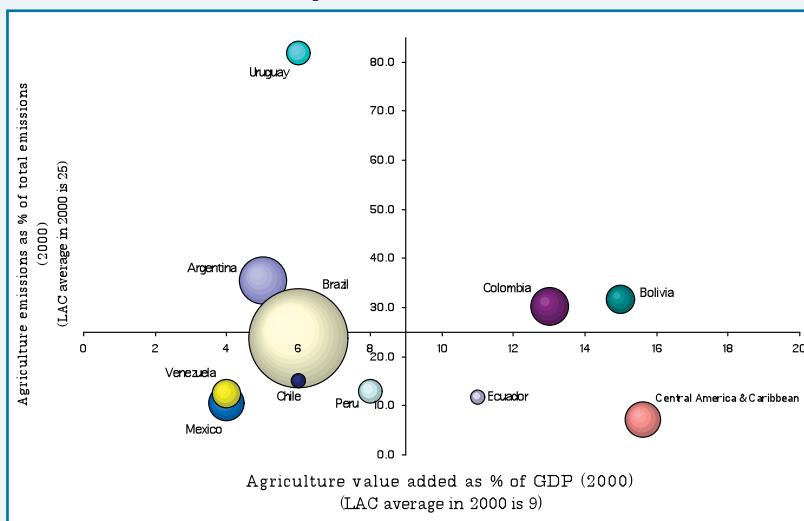
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# DOMINICAN REPUBLIC

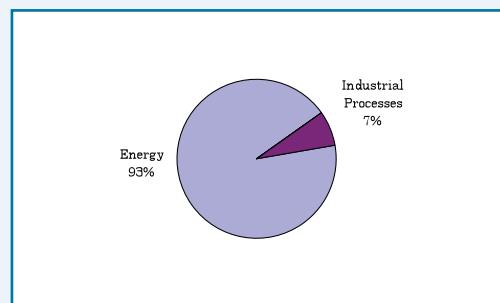
## Country Note on Climate Change Aspects in Agriculture

This Country Note briefly summarizes information relevant to both climate change and agriculture in the Dominican Republic, 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<sub>2</sub> of LUCF emissions; axes cross at LAC average)

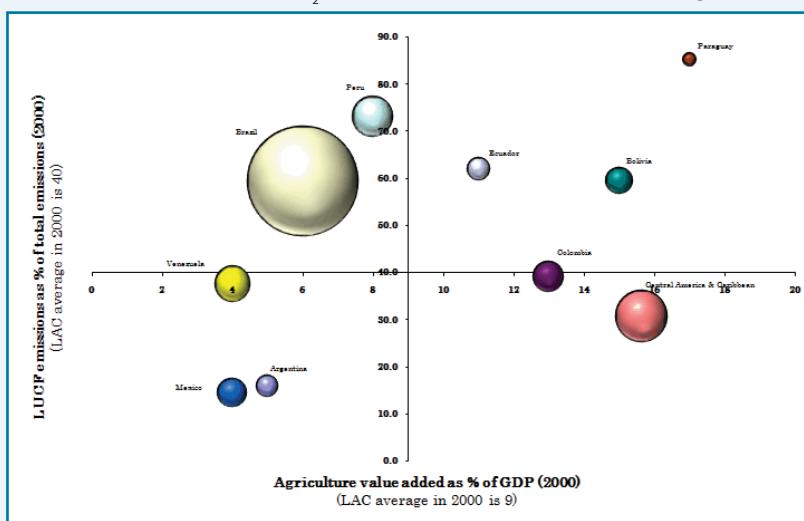


**Percent of GHG emissions in CO<sub>2</sub> equivalent, by sector (2000)**

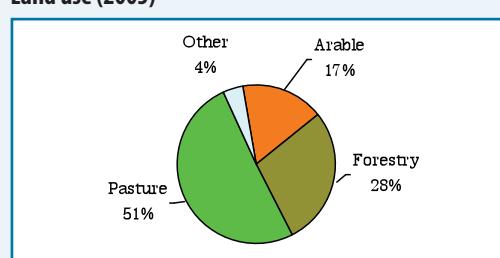


Source: World Resources Institute <http://cait.wri.org>

**Contribution of agriculture to the economy and of LUCF to emissions in LAC countries**  
(size of bubble in MTCO<sub>2</sub> of LUCF emissions; axes cross at LAC average)

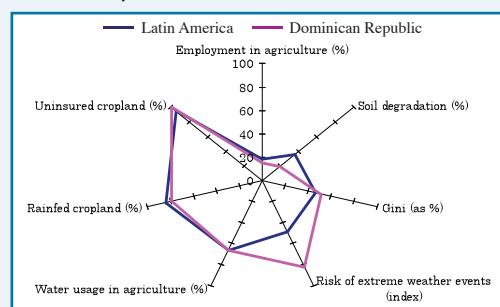


**Land use (2005)**



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†; \*\*\*\*Germanwatch

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.

<sup>1</sup><http://www.fao.org/landandwater/agll/glasod/glasodmaps.jsp?country=DOM&search=Display+map+%21>

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### Summary

Like most countries in Latin America, the Dominican Republic 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 large contributors to GHG emissions within the sector. The emission reduction potential is large and several reforestation programs have been initiated. The Dominican Republic does not count with CDM projects in the agricultural sector, thus carbon trading opportunities can be explored. Agriculture is highly vulnerable to extreme weather events, this coupled with problems of land degradation in the country. A greater emphasis on 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.

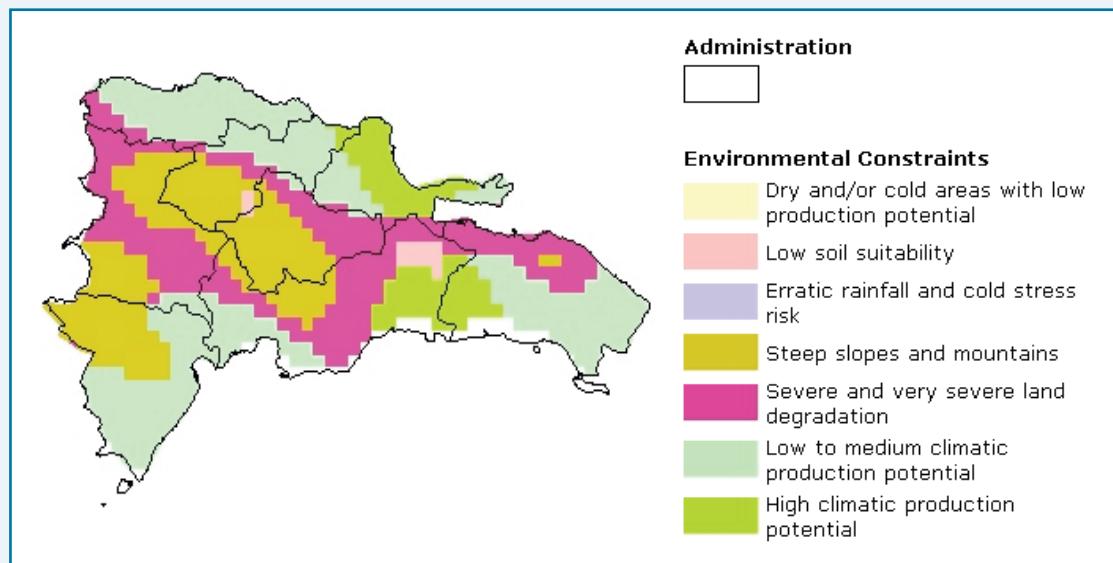
### Acknowledgments:

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.

## 1. The Climate Context

The baseline map provides a visual characterization of the Dominican Republic's agricultural potential given current environmental constraints and their regional distribution. Around 68% of Dominican Republic's land is used for agriculture (51% for pasture and 17% for cultivation), with forestry occupying 28% 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 the Dominican Republic and agricultural resources, go to <http://www.fao.org/countryprofiles/maps.asp?iso3=DOM&lang=env>

### 1.1. Country Projections

According to climate scenarios using general circulation models, prepared for the First National Communication, the following climatic change with relevance for the agricultural sector, are to be expected in the Dominican Republic:

- increases in temperature** – it is probable that the temperature will increase to 26.2°C by 2010, 26.9°C by 2030, to 27.7°C by 2050 and to 29.6°C by 2100;
- decreases in precipitations** – precipitations are expected to decrease to 1137 mm by 2030 (11% decrease from 2010), to 976 mm (23% decrease from 2010) and to 543 mm (57% decrease from 2010).
- sea level increase** – the sea levels are expected to increase between 1.47-13.55cm by 2010, 3.77-26.73 by 2030, between 6.53-47.27cm by 2050 and between 12.71-105.67 by 2100, depending on the scenarios (from the optimistic to the pessimistic).

The increased temperatures, coupled with a reduced precipitation regime will lead to increased evapo-transpiration and an increased water deficit, reflected in a reduction of runoff of up to 95% by 2100 with respect to the baseline, under the most pessimistic scenario. It is also expected to see a transition from the most humid zones of the country to the driest and an expansion of the areas that are historically the driest.

In recent years (between 2001 and 2008), storms and floods have had the highest human and economic impact in the Dominican Republic, with losses for the period 1997-2006 averaging at

0.83% of GDP – 182,344 people have been affected by storms (6 events) with the cost of damages reaching US\$ 459 million and 45,220 people have been affected by floods (4 events) with the cost of damages reaching US\$ 45 million<sup>2</sup>.

## 1.2. Agriculture-Related Impacts

Agriculture is highly vulnerable to weather related events in the Dominican Republic, particularly to storms. Hurricane Mitch which hit the country in 1998, lead to total crop losses totaling US\$ 278 million, where one third of the area planted with crops had been destroyed<sup>3</sup>. Tropical storm Noel, which hit the Dominican Republic's shores in October 2007, is thought to have destroyed the entire plantain and vegetable crops in some areas of the country<sup>4</sup>.

## 2. The Policy Context

**L**ike most countries in the region, the Dominican Republic has submitted only one **National Communication**<sup>5</sup> to the **United Nations Framework Convention on Climate Change**<sup>6</sup> (**UNFCCC**) in March 2004, laying out the actions that the government has already taken and the analytical basis for its policy response to climate change and its commitments to take future actions within an official international framework. The National Communication establishes the national GHG Inventory for 1990 and 1994, it includes vulnerability and adaptation studies to climate change for water resources, coastal area and the agricultural sector and mitigation options for natural disasters as well as for the forestry sector.

The **Second National Communication** is under preparation and scheduled to be completed by 2009. Its goals are to include adaptation measures for the different sectors, a mitigation strategy for the energy sector and a national adaptation plan for the water, forestry and agriculture<sup>7</sup> sectors.

### 2.1. National Climate Change Plans, Strategies and Programs

The **National Climate Change Program**<sup>8</sup> was initiated in 2000 with funding from the Global Environment Facility (GEF) and its direct objective was to be involved in the preparation of the First National Communication.

### 2.2. Regional initiatives

**Caribbean Community Climate Change Center**<sup>9</sup> (**CCCCC**, Spanish acronym): Established in August 2005 as the official coordinating body of the Caribbean response to climate change. It is the official repository for regional climate change data, providing climate change-related policy advice to the Caribbean Community (CARICOM) member states.

**Association of Caribbean States**<sup>10</sup>: Coordinates various projects on disaster preparedness and relief with own and donor funding e.g. a **Database of Financial Mechanisms for Disasters** (a list of all organizations that provide reimbursable and non-reimbursable post-disaster funding), a **Radio Soap Opera on Natural Disasters in the Caribbean**, and assistance to member states in creating **National Post-Disaster Funds**<sup>11</sup>.

**Red Cross-Caribbean**<sup>12</sup>: Prepares training materials and coordinates training campaigns for disaster preparedness and resilience to other climate-change induced risks, including through **Community Based Disaster Risk Management**<sup>13</sup> (**CBDRM**, Spanish acronym).

<sup>2</sup> [http://www.emdat.be/Database/CountryProfile/countryprofile.php?disgroup=natural&country=dom&period=1999\\$2008](http://www.emdat.be/Database/CountryProfile/countryprofile.php?disgroup=natural&country=dom&period=1999$2008)

<sup>3</sup> <http://www.fao.org/DOCREP/MEETING/003/X9178E.HTM>

<sup>4</sup> [http://www.associatedcontent.com/article/433473/tropical\\_storm\\_noel\\_devastates\\_the.html](http://www.associatedcontent.com/article/433473/tropical_storm_noel_devastates_the.html)

<sup>5</sup> <http://unfccc.int/resource/docs/natc/domrepnc1.pdf>

<sup>6</sup> [www.unfccc.int](http://unfccc.int)

<sup>7</sup> [http://pnud.onu.org.do/sites/pnud.onu.org.do/files/prodoc\\_cambio\\_climatico\\_00047173.pdf](http://pnud.onu.org.do/sites/pnud.onu.org.do/files/prodoc_cambio_climatico_00047173.pdf)

<sup>8</sup> [http://www.unccd.int/cop/reports/lac/national/2002/dominican\\_republic-spa.pdf](http://www.unccd.int/cop/reports/lac/national/2002/dominican_republic-spa.pdf), pg. 25

<sup>9</sup> [www.caribbeanelimate.bz](http://www.caribbeanelimate.bz)

<sup>10</sup> <http://www.acs-aec.org/>

<sup>11</sup> <http://www.acs-aec.org/projects/projects.htm>

<sup>12</sup> <http://www.caribbeanredcross.org/what/dm/climatechange/index.htm>

<sup>13</sup> <http://www.caribbeanredcross.org/what/dm/ccws-ppt/cbdrm.pdf>

**OAS/Caribbean Disaster Mitigation Project<sup>14</sup> (CDMP):** in the Dominican Republic it established an NGO that has continued operating beyond the project. It contributes to attract and leverage external resources for community flood mitigation projects, and is used by almost all municipalities. With one exception, all community flood control works withstood flooding from Hurricane George in 1998. This project involves a number of community initiatives.

**Alliance of Small Island States (AOSIS):** is an intergovernmental organization of low-lying coastal and small Island countries. Established in 1990, with the main purpose to consolidate the voices of Small Island Developing States (SIDS) to address global climate change, this organization has been very active, playing a central role in shaping international policy on climate change.

### 2.3. Agricultural Sector Initiatives

## 3. The Institutional Context

The National Council for Climate Change and Clean Development Mechanism<sup>15</sup> (CNCCMDL, Spanish acronym), created in September 2008, is an organizational authority in charge of Climate Change Policies in the Dominican Republic. It is the focal point for the country's commitments to the UNFCCC and other climate change related actions and it represents the Designated National Authority (DNA) for the Clean Development Mechanism (CDM) through its Clean Development Mechanism National Office (ONMDL, Spanish acronyms).

#### 3.1. Inter-Sectoral Coordination

The Council (CNCCMDL, Spanish acronym), serves as a link between the public and the private sector and civil society, with the responsibility to formulate, design and develop policies for mitigation of the GHG emissions and adaptation to climate change adverse effects .

#### 3.2. Agricultural Sector Institutions

The Ministry of Agriculture<sup>16</sup> (SEA, Spanish acronym) is responsible for the formulation and directing of the national agricultural policy, according to the general development plans, it coordinates short- and long term programs of the entities linked and related to it and performs research in the agricultural sector. It has authority over livestock policies through its General Directorate of Livestock<sup>17</sup> (DIGEGA, Spanish acronym).

The National Weather Office<sup>18</sup> (ONAMET, Spanish acronym) offers forecasts on weather variables, useful for the agricultural sector. It also issues monthly climate change reports providing information on temperature and precipitation changes in the context of the last century. It is in the process of creating and **early alert system** issuing forecast for extreme weather events aimed at mitigation of floods and landslides.

The National Institute for Water Resources<sup>19</sup> (INDRHI, Spanish acronym) is responsible for managing water and related resources as well as designing, implementing, monitoring and evaluating programs, projects and activities aimed at controlling and regulating surface and groundwater use. It is also in charge of irrigation systems management in the country.

#### 3.3. Fostering Capacity to Deal with Climate Change

**Emissions inventory:** To date, the Dominican Republic counts with one National GHG Inventory for 1990 and update for 1994. The inventory includes data on agriculture and land-use change and forestry, providing disaggregated information by type of emission and type of agricultural source.

<sup>14</sup> <http://www.oas.org/CDMP/rdom/Homepag.htm> and UNDP and World Bank Colloquium on Microfinance: Disaster Risk Reduction for the Poor, Feb 2002  
[http://www.proventionconsortium.org/themes/default/pdfs/microfin\\_workshop\\_2000\\_proceedings.pdf](http://www.proventionconsortium.org/themes/default/pdfs/microfin_workshop_2000_proceedings.pdf), pg.5

<sup>15</sup> [www.cambioclimatico.gob.do](http://www.cambioclimatico.gob.do)

<sup>16</sup> [www.agricultura.gob.do](http://www.agricultura.gob.do)

<sup>17</sup> <http://www.agricultura.gob.do/SobreNosotros/Dependencias/tabid/290/language/en-US/Default.aspx>

<sup>18</sup> [www.onamet.gov.do](http://www.onamet.gov.do)

<sup>19</sup> [www.indrhi.gov.do](http://www.indrhi.gov.do)

**Studies related to climate change and agriculture:** The Canadian Development Agency (CIDA) and UNDP have published a study on the adaptation to drought for the south-west and north-west of the Dominican Republic<sup>20</sup>. In addition, various vulnerability and adaptation to climate change studies have been completed in preparation for the First National Communication for coastal and water resources, agriculture and forestry. A CDM Market Study for the Dominican Republic supported by the Government of Canada was conducted in 2006. A study for the promotion of CDM Projects in the Dominican Republic was supported by the Japan International Cooperation Agency and is under implementation for the period 2008-2010. A UNDP project "Capacity Development for Policy Makers to Address Climate Change" is implemented in the country addressing three key sectors in the Dominican Republic: energy (mitigation assessment), tourism and water (adaptation assessments).

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"<sup>21</sup>, 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

**A**ccording to the First National Communication, agriculture is responsible for only 1% of total GHG emissions in 1994. Of total methane emissions, 38% can be attributed to agriculture, mainly as a result of enteric fermentation from farm animals. Agriculture is also responsible for 86% of total nitrous oxide emissions from soil used for crop cultivation. Land-use change and forestry is responsible for CO<sub>2</sub> absorption.

### 4.1. Action Frameworks

#### 4.1.1. Forestry and Land Use Change

The forestry and land-use change sector is responsible for the absorption of 6,633.17 Gg CO<sub>2</sub> in 1994, which represents a 17% increase from the absorptions registered in 1990 (5,667.14 Gg CO<sub>2</sub>). These absorptions are due to conversion occurring in forests and pastures. Deforestation activities in the Dominican Republic have showed a sharp decrease since the 1990s due to increased controls of forest fires and of clearing of forests for agricultural purposes. Thus, the average annual deforestation rate for the period 1990-2005 in the country is nil<sup>22</sup>.

The **National Reforestation Program**<sup>23</sup> ("Plan Quisqueya Verde") was created in 1997 and its main objective is to restore degraded areas in the most important water basins with the final aim of improving the well being of populations in the area through maintenance of forest plantations, among others. It consists of five programs: i) Plant Production Program; ii) Reforestation Program; iii) Water Basin Management Program; iv) Forest Management Program and v) Promising Specie Program.

**The Project: Rehabilitation and Community Development of the Artibonito River Basin and other Areas of the Border Region:** reforestation of 11,732 hectares, establishment of 500 hectares of agroforestry plots.

**Management and Conservation of the High Yaque River Basin**<sup>24</sup> (**PROCARYN**, Spanish acronym), initiated in 1999 with the help of the German Development Bank (KfW) and the German

<sup>20</sup> <http://www.globalfoundationdd.org/seminars/cambiosclimaticosII2007/docs/PROYECTORDPDF.pdf>

<sup>21</sup> [http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2009/02/27/000334955\\_20090227082022/Rendered/PDF/476040PUB0Low0101Official0Use0Only1.pdf](http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2009/02/27/000334955_20090227082022/Rendered/PDF/476040PUB0Low0101Official0Use0Only1.pdf)

<sup>22</sup> World Development Indicators, 2007

<sup>23</sup> [http://www.unccd.int/cop/reports/lac/national/2002/dominican\\_republic-spa.pdf](http://www.unccd.int/cop/reports/lac/national/2002/dominican_republic-spa.pdf), pg. 27

<sup>24</sup> [www.procaryn.gov.do](http://www.procaryn.gov.do)

Aid Agency (GTZ) in collaboration with national institutions, is aimed at fostering investments for the promotion of sustainable use of natural resources and increased economic benefits from forest production and agroforestry. It consists of the following activities: management of existing forests, reforestation, agroforestry projects, sustainable agriculture and management of protected areas, among others.

The **Regional Strategic Program for Management of Forest Ecosystems<sup>25</sup>** (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 Strategy (ERA**, Spanish acronym), thus contributing to poverty reduction, reduction of vulnerability to climate change events and to mitigation and adaptation to climate change.

#### **4.1.2. Livestock**

According to the First National Communication, livestock is responsible for 87% of total methane emissions from agriculture in 1994, which represents an increase of 3% from 1990 due to a higher number of livestock in the country. Of these methane emissions, 94% of these are from the enteric fermentation process from farm animals and the rest of 6% from handling of farm manure.

#### **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)<sup>26</sup> 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, the Dominican Republic counts with only 1 registered CDM project, which is not in the agricultural sector, nor it is in the afforestation/reforestation category<sup>27</sup>. The Dominican Republic is the first Caribbean country that joins the Methane to Markets Partnership to address methane emissions in the agriculture and landfills sectors.

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## **5. Impact of Climate Change on Agriculture - Adaptation Measures**

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#### **5.1. Action Frameworks**

##### **5.1.1. Land Management**

Flooded rice fields are responsible for 11% of methane emissions from agriculture in 1994, which represents a decrease from 1990 when these emissions stood at around 14%. In terms of nitrogen based fertilizers, whose intensive use leads to the emission of nitrous oxide in the air, the intensity of use of fertilizers in the Dominican Republic in 1999 is 60kg/hectare of cropland, very close to the Central America and the Caribbean average of 65kg/hectare of cropland<sup>28</sup>.

Some adaptation measures that have been implemented in the country to revert degradation are:

- sustainable agriculture and implementation of organic practices (banana, coffee),

<sup>25</sup> <http://www.sica.int/ccad/program.aspx?IdEnt=2>

<sup>26</sup> <http://cdm.unfccc.int/Statistics/Registration/RegisteredProjByScopePieChart.html>

<sup>27</sup> <http://cdm.unfccc.int/Projects/projsearch.html>

<sup>28</sup> [http://earthtrends.wri.org/pdf\\_library/country\\_profiles/agr\\_cou\\_214.pdf](http://earthtrends.wri.org/pdf_library/country_profiles/agr_cou_214.pdf)

- sustainable agriculture with conservation tillage and improvement of eroded land terrain with slopes,
- sustainable land use and sustainable land management including irrigation,
- implementation of better norms to generate cultivars of crops that can resist to extreme climate conditions.

The following adaptation measures for the agricultural sector are identified in the First National Communication, as a result of a vulnerability study to climate change for potatoes, rice and corn for 2100, showing a decreasing yield of these crops by 2100:

- an increased use by producers of weather services oriented toward agriculture, such as early alert systems capable of forecasting droughts, agricultural fires, plagues and diseases and the necessity to create a forecasting system for crop yields and agricultural production
- national zoning of crops according to the suitability of the available cropland for certain crops
- development of educational programs for farmers on the use of sustainable methods in agriculture
- introduction of sustainable practices of crops aimed at soil and humidity conservation and avoiding of soil salinity
- development of new crop varieties, resistant to high temperatures and more tolerant to lack of humidity in soil
- introduction of crops resistant to drought which affects the country in the south-west and the north-west
- improvement of soil quality in areas struck by drought

A framework for adaptation policy addressing the issue of droughts is under preparation in the Dominican Republic, as well as the implementation of a drought early warning system<sup>29</sup>.

### **5.1.2. Water Use**

In the Dominican Republic, agriculture is responsible for 81% (INDRHI, 2005) of all freshwater withdrawal. Of the total land dedicated to agriculture, 17.2% (280,000 hectares) of it is irrigated, which is higher than the Latin America and the Caribbean average of 11.4%<sup>30</sup>, but it is lower if taken into account just the Central America and the Caribbean average of 19.1%<sup>31</sup>. Public investment in irrigation has been the main driver for the development of the irrigation infrastructure in the country. Surface irrigation represents 96% (270,000 hectares) of total irrigation. Most of the irrigated areas are located in the valleys between the mountain ranges, with a medium to low rainfall and few limitations on its soil such as slope, depth of soil, and in some cases, salinity problems associated with irrigation or the presence of saline groundwater<sup>32</sup>.

The following adaptation measures have been identified in the First National Communication, as a result of a vulnerability study for water resources showing a decrease runoff by 2100 as a result of temperature increases and precipitation decreases in the country:

<sup>29</sup> [http://unfccc.int/files/adaptation/adverse\\_effects\\_and\\_response\\_measures\\_art\\_48/application/pdf/200609\\_background\\_latin\\_american\\_wkshp.pdf](http://unfccc.int/files/adaptation/adverse_effects_and_response_measures_art_48/application/pdf/200609_background_latin_american_wkshp.pdf)

<sup>30</sup> World Development Indicators, 2006

<sup>31</sup> [http://earthtrends.wri.org/pdf\\_library/country\\_profiles/agr\\_cou\\_214.pdf](http://earthtrends.wri.org/pdf_library/country_profiles/agr_cou_214.pdf)

<sup>32</sup> [http://en.wikipedia.org/wiki/Irrigation\\_in\\_the\\_Dominican\\_Republic](http://en.wikipedia.org/wiki/Irrigation_in_the_Dominican_Republic)

- changes in the storing capacity of water
- implementation of methods for increased saving of water
- changes in crop systems and implementation of no-till practices which require less water
- increased efficiency in water management and protection of the resource against contamination, especially for underground water
- installation of shallow water pumps to supplement water extractions in areas not suited for traditional water extraction techniques

Some adaptation measures identified in the south-west and north-west part of the Dominican Republic affected by drought are: i) storing of rainwater; ii) construction of water wells; iii) introduction of crops resistant to drought.

## 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.

The Human Development Report 2009 reports that 5.0% of Dominicans live on less than 1.25\$/day, 15.1% on less than 2\$/day and 44.5 live below the national poverty line. Inequality is relatively high in the Dominican Republic with a Gini coefficient of 0.52. This level of inequality has persisted for the past eight years, despite the economic growth in this period. About 33.2% of the population lives in rural areas. Small-scale and landless farmers in the border region with Haiti, along with seasonal migrant workers from Haiti, are among the poorest and most vulnerable rural residents. Their vulnerability stems mostly from lack of productive assets, scarce social and productive infrastructure, limited employment opportunities, natural disasters (e.g. Hurricane George in 1998) in addition to prejudice and exclusion<sup>33</sup>. The seasonal nature of coffee production (one of the main cash crops in the country) contributes to livelihood insecurity of coffee-producers during the off season; hence support for crop diversification is likely to increase the sustainability of rural livelihoods.

There are several on-going climate change adaptation strategies/projects in the country:

- 1) **IFAD, Social and Economic Development Program for Vulnerable Populations in the Border Provinces**<sup>34</sup> (since 2002) – strengthening organizations of rural poor and their human and social resources, particularly grassroots organizations of people of Haitian origin, through education, legal support to obtain birth certificates and identification documents, and training. The program will finance a long-term, market-oriented economic plan to guide production, business and market support services. (Targets approx. 105,000 people; 35,000 direct beneficiaries of whom 9,000 Dominicans of Haitian origin)
- 2) **IFAD, South Western Region Small Farmers Project Phase II**<sup>35</sup> – aims to generate or improve family income opportunities (on and off farm), improve access of families to financing and microenterprise initiatives, and strengthen the ability of NGOs and grassroots organizations to provide social and productive services. Targets 19 municipalities in the Bahoruco, Independencia and Elías Piña provinces, where 86% of the population lives below the poverty line and 42% live in extreme poverty.

<sup>33</sup> <http://www.ifad.org/operations/projects/regions/PL/des/DO.htm>

<sup>34</sup> <http://www.ifad.org/operations/projects/regions/PL/des/DO.htm>

<sup>35</sup> <http://www.ifad.org/operations/projects/regions/PL/des/DO.htm>

- 3) The **Solidarity Program**<sup>36</sup> – is a conditional cash transfer program established in September 2005 involving food subsidy (electronic debit card to be used in grocery stores throughout the country), health subsidy conditional on performing regular check-ups and vaccinations for children.

### 5.3. Insurance Instruments

Agricultural insurance was first introduced in the Dominican Republic 1984. The Government created AGRODOSA, a public company with private sector participation. The Government provides yearly premium subsidies between 33% to 50% of all agricultural insurance contracts for covering the administrative and operation costs of the company. One of the main channels for offering agricultural insurance is through the public sector Banco Agrícola, which supplies credit lines to farmers.

The Government of the Dominican Republic has one instrument in place that supports the agriculture sector in managing climate risks - Premium subsidies for agriculture insurance are implicitly built into the insurance policies offered by AGRODOSA financing up to 50% of premium costs.

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

- a) **Public sector: AGRODOSA:** The public agriculture insurance company, subsidies by the government to extend agricultural insurance to farmers, in particular linked to credit lines by the Banco Agrícola.
- b) **Donors:** WFP and IFAD: The WFP and IFAD have been discussing the possibility of introducing an index-based insurance coverage for farmers in response to the food crisis to ensure an adequate supply of food products. The proposal is at its pilot stage.

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<sup>36</sup> [http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2007/07/23/000020953\\_20070723103417/Rendered/PDF/362990CORRIGENDUM0R20071015712.pdf](http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2007/07/23/000020953_20070723103417/Rendered/PDF/362990CORRIGENDUM0R20071015712.pdf)



## 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.



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### Feedback

For comments and/or suggestions, please contact Svetlana Edmeades at  
[sedmeades@worldbank.org](mailto:sedmeades@worldbank.org)