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## **Poverty and environment in Guatemala** *– input to the Swedish cooperation strategy*

*The Policy brief was written as a desk study at the request of Sida's Latin America department (att: Björn Holmberg) and Sida NATUR (att: Margareta Nilsson) by Olof Drakenberg and Daniel Slunge at the Environmental Economics Unit (EEU), Department of Economics, Göteborg University<sup>2</sup>. The aim of the policy brief is not to cover all important environmental issues, but to serve as a starting point for a discussion on how environment can be integrated in the Swedish cooperation strategy for Guatemala. The policy brief largely builds on the World Bank “Country Environmental Analysis”, June 22, 2006.*

### **Issues for Sida to consider**

Guatemala is highly dependent on natural resources for growth, employment, exports and subsistence. Air and water pollution account for a significant share of the burden of disease. Furthermore, environmental degradation such as deforestation increase existing vulnerability for natural disasters from extreme weather; hurricanes, droughts and floodings.

-In what sense can environmental degradation and poor management of natural resources jeopardize the outcomes of poverty alleviation efforts in Guatemala?

- How can Swedish development cooperation directly or indirectly contribute to improved management of natural resources?

The term Environment covers a broad range of issues which can not be confined to a specific sector. Both Guate Verde<sup>3</sup> and the recent World Bank study have concluded that mainstreaming of environment in sectors is a top priority.

-What can Sida do within sectors of Swedish interest to support this priority? Can Strategic Environmental Assessments, be used to mainstream environmental issues in different sectors (in line with the commitment in the Paris Declaration<sup>4</sup>)?

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<sup>2</sup> The policy brief has been written as part of Sida-EEU's institutional collaboration on environmental economics and strategic environmental assessment. The views expressed in this policy brief are those of the authors and do not necessarily represent the views of Sida.

<sup>3</sup> Guate Verde is one of the pillars of the national development plan; Vamos Guatemala

<sup>4</sup> Strategic Environmental Assessments (SEA) is increasingly being used to integrate environment in sector strategies and other strategic level decision-making. In the Paris Declaration development agencies and partner countries jointly committed to "...develop and apply common approaches for "strategic environmental assessment" at the sector and national levels. OECD DAC has recently published Guidance on how to apply SEA in development cooperation ([www.seataskteam.net](http://www.seataskteam.net)).

-What does the division of labour within the donor group look like when it comes to supporting environmental management institutions as well as for mainstreaming environment in all sectors? Is there a lead donor?

### **Introduction**

Guatemala is highly dependent on natural resources for growth, employment, exports and subsistence<sup>5</sup>. The country is rich in biodiversity and natural resources which combined with Guatemala's cultural heritage give the country great potential for tourism. Less than 2 percent of the farmers own 70% of the land and the economic potential of land property varies considerably. About 56% of all Guatemalans lived in poverty in 2000. Poverty rates are significantly higher for indigenous groups (76%) and rural residents (75%).

Well functioning eco-systems and access to natural resources (food, fodder, fuels, medicine etc) are critical for the poor with some 87 % of the rural poor being dependent on agriculture. Only 41% of landowner households possess formal title to their land. Secured access to land can improve productivity and use of sustainable farming methods.

The greatest environmental challenges are: water pollution and water scarcity, air emissions, deforestation, soil and land degradation and Guatemala's great vulnerability to natural disasters<sup>6</sup>. See Annex 1 for more information.

### **Deforestation, vulnerability and climate change**

Population growth, poverty and government policies has favoured conversion of forests for agricultural use, livestock etc. Nationally protected areas cover 20% of the territory but illegal logging for timber harvesting and land clearing for agricultural production are reported also from national parks<sup>7</sup>. Guatemala has lost 17 % of its forest area since 1990 and annual losses of forest area are about 1,3 % since 2000 which is significantly higher than the regional average. The situation is most urgent in the densely populated upper, western parts of the country. In upper watersheds 56 % of the land is highly degraded. There are growing conflicts caused by declining natural capital and population pressure.<sup>8</sup>

Deforestation not only threatens biodiversity but also the ecosystems capacity to store water and avoid soil erosion and landslides during heavy rains. The poor are most exposed to natural disasters as they are more prone to live on marginal lands. In 2005 the hurricane Stan destroyed 35 000 homes. Climate change is expected to cause increased frequency of extreme weather events in Central America like hurricanes, rainfall and drought<sup>9</sup>. Increased migration is expected to follow. Regional work is ongoing to map consequences of climate change and make plans for adaptation including improved preparedness to natural disasters.

Globally, deforestation is one of the major causes of carbon dioxide emissions. Thus there are multiple reasons to ensure that Guatemala's forest resources are managed sustainably.

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<sup>5</sup> The agricultural sector accounts for about one-fourth of GDP, two-thirds of exports, and half of the labour force. Coffee, sugar, and bananas are the main products although the agricultural share of exports is declining.

<sup>6</sup> World Bank, 2006

<sup>7</sup> <http://rainforests.mongabay.com/20guatemala.htm>

<sup>8</sup> World Bank, 2006

<sup>9</sup> Global Environment Facility, 2004, It's raining, it's pouring, it's time to be adopting: report from second AIACC regional workshop for Latin America and the Caribbean

## **Health and environment**

Malnutrition rates are among the highest in the world, 57 % of the children in indigenous groups are undernourished. The proportion of undernourished children increased between 1990 and 2003<sup>10</sup>. Access to improved water is high, 95 % of the population, and 61 % have access to improved sanitation<sup>11</sup>. However, water quality is often bad, only 15 of 331 municipalities have treatment plants for potable water in working condition and there is a lack of treatment plants for sewage water<sup>12</sup>. Diarrhoeal illness due to polluted water and water-borne diseases cause 43% of infant mortality. Availability of clean water is also reduced by effluents from industries and municipal or illegal dumps.

Respiratory infections are the leading cause of morbidity and mortality in Guatemala. The major cause of these infections is the burning of firewood for cooking resulting in high concentrations polluted indoor air. In rural areas, 86% use firewood for cooking. Improved ventilation practices can significantly reduce exposure to emissions. Emissions in metropolitan Guatemala City exceed permissible levels mainly due to emissions from vehicles and industries causing respiratory diseases etc. Annual socio-economic health costs due to environmental degradation are estimated to 3% of GDP.<sup>13</sup>

## **Economic development and environment**

After some years of negative per capita growth, Guatemala showed real GDP growth in 2004 and 2005. Backed by the Peace Agreements, *Vamos Guatemala!*, serves as political framework for the country's progress and includes three pillars: Solidarity; Growth/Competitiveness; Environmental Sustainability.

Trade, regional integration and tourism are considered to be the main levers to generate growth in Guatemala<sup>14</sup>. The mining and energy sectors are also expected to grow, and a strong program to improve the infrastructure is planned to facilitate economic growth. An improved national framework for environment and natural resources management is necessary to make this growth sustainable.

The potential for increased natural resource based exports within the framework of DR-CAFTA (agriculture, forestry, mining) can reduce poverty rates but may also result in environmental degradation and increased vulnerability, for instance by pushing poor farmers to convert forests to agriculture. However, it is not trade openness per se but policies and implementation within sectors that determine whether natural resources will be overexploited or not<sup>15</sup>. Better regulations, property rights and incentives targeting poor farmers should be put in place to reduce negative outcomes<sup>16</sup>.

## **Institutional capacity, corruption and environment**

Mainstreaming of environment across sectors is a top priority. The policy framework for environment, Guate Verde, highlights the importance of incorporating environmental concerns in sectoral policies, to decentralize capacity to municipalities for managing environment and natural resources and improving central capacity for monitoring the health

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<sup>10</sup> FAO STAT Food security Statistics Guatemala

<sup>11</sup> World Bank, 2006 Little Green Databook

<sup>12</sup> Agrifor Regional Environmental Profile for Central American Region

<sup>13</sup> World Bank, 2006

<sup>14</sup> World Bank, Country profile

<sup>15</sup> World Bank, 2006

<sup>16</sup> Ibid

of eco-systems. This message is reinforced in a recent World Bank report stating that coordination and integration of environment in sectoral policies is a top priority, more important than up-scaling environmental agencies<sup>17</sup> (see also annex 2).

In 2001, 1,6% of the national budget was allocated to environmental sector out of which 50% was financed through international development cooperation<sup>18</sup>. Despite the passing of many laws to improve the environmental institutions and management of natural resources they remain insufficient in terms of clarity on direction, mandate and resources. Capacity for monitoring and enforcement is weak. Corruption is widespread and the score in Transparency International Corruption Index is 2,5<sup>19</sup>. Corruption creates room for illegal logging, industrial pollution and uncontrolled urban sprawl.

### **Development partners' environment related activities<sup>20</sup>**

#### **World Bank**

- strengthening environmental monitoring and early warning systems to help mitigate the risk of natural disasters
- biodiversity conservation and management of protected areas
- regional disaster management area
- land use planning
- Carbon Development Mecanismos

#### **DGIS**

- Intergrated water management
- capacity building at institutions and NGOs
- biodiversity

#### **IDB**

- sustainable tourism

#### **USAID**

- income generation in protected areas
- sustainable tourism
- certified forests

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<sup>17</sup> World Bank, 2006

<sup>18</sup> Perfil Ambiental, 2004

<sup>19</sup> TI, while this is an improvement compared with last year the score is down compared to five years ago.

<sup>20</sup> This list is far from complete

### Selected Environmental indicators

	Honduras	Guatemala	Nicaragua	Latin America
Agricultural land (%) of land area	26	43	121	36
Forest area (%) of land area	41,5	36,3	42,7	45,6
Annual deforestation (% change, 1990-2005)	2,5	1,1	1,4	0,4
Nationally protected area (%) of total land area	6,4	20,0	17,8	11,1
CO2 emissions per capita (metric tons)	0,9	0,9	0,7	2,4
Particulate matter in air*	46	76	32	43
Rural access to water	82	92	65	69
Urban access to water	99	99	93	96
Rural access to sanitation	52	44	51	44
Urban access to sanitation	89	84	78	84
Under-five mortality rate (per 1000 live births)	41	45	38	31
Population (millions)	7,0	12,3	5,4	546
GNI per capita (\$)	1040	2190	830	3576

\*(urban population weighted average, particulate matter  $\mu\text{g}/\text{cubic meter}$ )

Source: World Bank, The Little Green Databook, 2006

## References

Agrifor Consult, *Regional Environmental Profile for the Central American Region – report to the European Commission*

FAOSTAT, 2004, *Food security statistics*

GTZ, 2005, *Environmental Fiscal Reform and national forest policies*

Krznicar, R, 2005, *The limits on pro-poor agricultural trade in Guatemala: Land, Labour and Political Power- Human Development Report Occasional Paper*

Perfil Ambiental de Guatemala, 2004, <http://www.perfilambiental.org.gt/2004.html>

Simms, A, Reid, H, 2006, *Up in Smoke? Latin America and the Caribbean – the threat from Climate Change to the environment and human development*

World Bank, 2003, *Poverty in Guatemala- poverty assessment*

World Bank, 2005a, *En breve - Understanding the drivers for sustainable rural growth and poverty reduction in Guatemala*

World Bank, 2005b, *Country Assistance Strategy for the Republic of Guatemala*

World Bank, 2006a, *Country Environmental Analysis- Republic of Guatemala*

World Bank, 2006b, *Country Environmental Analysis- Republic of Guatemala- Annex II Cost of Environmental Damage*

World Bank, 2006c, *The little green data book*

World Bank, 2006d, *Program information document- GT DPL II*

## **Annex 1. Environmental challenges**

Exerpt: World Bank, Republic of Guatemala, June 22 2006, Country Environmental Analysis

Guatemala still faces considerable environmental challenges:

- *Over-exploitation of water resources.* Municipalities adjacent to Guatemala City have a 2.5 cubic meter per second water deficit, and between 1970 and 2001 there has been, on average, a 20-25 percent reduction in water flow in the country's rivers.<sup>21</sup>
- *Water pollution.* On average, five children die every day from water-borne diseases. The annual health cost of these diseases — caused by poor quality water, sanitation, and hygiene — is 1.6 percent of GDP.
- *Air pollution (indoor and outdoor).* Acute respiratory infections (ARI) were the leading cause of death and illness in Guatemala between 1970 and 2000. The annual health cost of air pollution is 1.2 percent of GDP (0.95 percent indoor air pollution and 0.25 percent outdoor air pollution).
- *Environmental health in rural areas.* Health-related pollution problems are especially acute in rural areas (home to about 60 percent of the population, where three-quarters fall below the poverty line, and one-quarter live in extreme poverty). The annual cost of water-borne diseases caused by poor quality water, sanitation, and hygiene in rural areas is 0.97 percent of GDP; and the annual cost of indoor air pollution-related illnesses in rural areas is 0.7 percent of GDP.
- *Deforestation.* The annual rate of deforestation is 1.7 percent (more than three times the average rate in Latin America and the Caribbean).<sup>22</sup>
- *Soil and land degradation.* About 10 percent of land is highly degraded and 63 percent could become highly degraded in the near future. The annual cost of soil and land degradation amounts to 0.55 percent of GDP.
- *Vulnerability to natural disasters.* Because of its geographic location, Guatemala is highly vulnerable to natural disasters such as droughts, floods, volcanic eruptions, and earthquakes. This environmental vulnerability is greatest in the upper parts of the three main watersheds, which are also the most densely populated. These areas have shrinking natural forests, high rainfall, and steep topography, characteristics that increase the vulnerability of people in the middle and lower parts of the water basins, which suffer the greatest damage from natural events that can easily become disasters. The average annual cost of natural disasters is 0.57 percent of GDP.

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<sup>21</sup>. UNEP. GEO Centroamerica Perspectivas del Medio Ambiente 2004.

<sup>22</sup>. UNEP 2003.

## **Annex 2. Needs within the environmental institutional framework**

Exerpt: World Bank, Republic of Guatemala, June 22 2006, Country Environmental Analysis

In terms of the institutional framework, Guatemala needs:

- *A clear statement of policy priorities and goals.* Environmental policies lack sufficient clarity for implementation.
- *Stronger capacity for coordination.* Mainstream environmental considerations into sectoral policies of the executive power and coordinate environmental policy interventions with municipalities.
- *More detailed technical regulations.* These are especially needed for discharges to air, soil, and water.
- *A more efficient and effective licensing process.* Add new environmental management instruments and delegate functions to municipalities and environmental units of other ministries.
- *Increase emphasis on compliance.* Ensure that regulations are applicable and decriminalize the approach to compliance and enforcement (laws and regulations rely almost exclusively on command-and-control measures to address non-compliance rather than providing a complete set of more flexible mechanisms to foster compliance, complemented by coercive measures).
- *Increase involvement of citizens and civil society in environmental issues.* Strengthen social accountability mechanisms by enhancing the capacity of ordinary citizens to obtain information, voice their needs, and demand accountability.

Perhaps the main challenge for environmental management in Guatemala is to improve the institutional framework of organizations (especially MARN). Guatemala can learn from international experience and steer MARN toward performing and concentrating on key functions for sustainable development rather than diluting its efforts with too many activities. Key functions include:

- Pick up signals about needs and problems, particularly from the fringes. Generate information, use it to establish policy priorities, give citizens a voice, and respond to feedback. There is evidence that Guatemalan environmental organizations are not effectively identifying and addressing some of the highest-priority environmental issues such as serious environmental health problems caused by air and water pollution.
- Balance interests by forging agreements with other sectoral authorities (to mainstream environmental considerations) and by providing rules and incentives that will guide behavior on environmental issues. The study found that there is plenty of room to improve the mainstreaming of environmental considerations into sectoral policies.
- *Execute* and implement sectoral and inter-sectoral agreements by following through and promoting compliance and enforcement to lend credibility to environmental policies and avoid commercial disputes (especially in light of DR-CAFTA).