FOCALI COUNTRY BRIEF - **GUYANA**

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Forest, climate & livelihood research network

Focali - Forest, Climate and Livelihood research network - is a Swedish knowledge-based network aiming to ensure Sida and other Swedish authorities access to scientific knowledge in order to effectively use forestry measures to reach climate and poverty objectives. Focali also aims to increase the flow of relevant information between academia, government authorities, and civil society.

Focali is a part of the **Forest Initiative** which is a strategic partnership between Sida, the Swedish Forest Agency and the Swedish Forestry Association. Sida provides funding for Focali. Focali currently consists of representatives from **University of Gothenburg**: Departments of Earth Sciences, Human and Economic Geography, Plant and Environmental Sciences, Economics, School of Global Studies; **Chalmers:** Division of Physical Resource Theory; **Linköping University:** Centre for Climate Science and Policy Research; **Swedish University of Agricultural Sciences:** Department of Forest Ecology and Management, Swedbio. The Focali secretariat is placed at the Environmental Economics Unit at the **School of Business, Economics and Law**, University of Gothenburg.

This brief is part of a series of publications within three themes that Focali is undertaking. Responsibility for its contents rests entirely with the author(s).

Theme I *"Assessment of existing global monitoring and financial instruments for carbon sinks in forest ecosystems."* – Theme leader Madelene Ostwald, Linköping University

Theme II *"Making REDD work for the poor"* - Theme leader: Robin Biddulph, University of Gothenburg

Theme III *"Climate assessed Sustainable Forest Management"* – Theme leader: Göran Wallin, University of Gothenburg

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The **Forest Initiative** is a strategic partnership between **Sida**, **the Swedish Forest Agency** and **the Swedish Forestry Association**. The overall objective of the Initiative is poverty reduction through promotion of sustainable management and administration of forest resources within Swedish development cooperation. Sida is the main donor of the Forest Initiative, which is based on the belief that forests play an important role for poor people and can contribute to economic and social development as well as a better environment.

This document has been financed through the Forest Initiative and does not necessarily reflect the view of the three main partners of the Initiative. Responsibility for its contents rests entirely with the author(s).

The Forest Initiative Partnership

SKOGSSTYRELSEN
SWEDISH FOREST AGENCY

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THE SWEDISH FORESTRY ASSOCIATION

Sida

FOCALI COUNTRY BRIEF: GUYANA

Country profile – background information

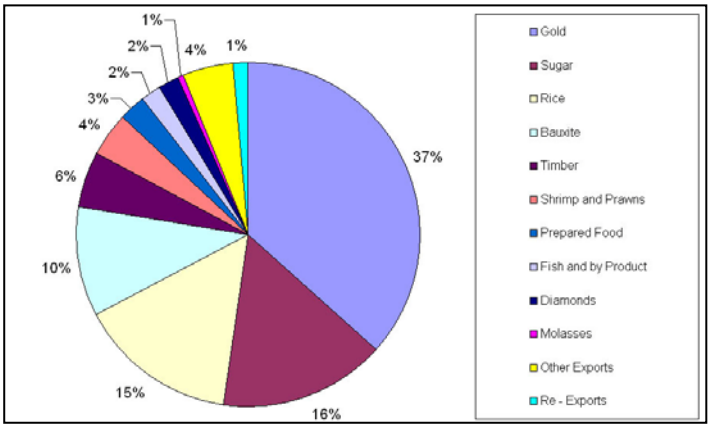
The Cooperative Republic of Guyana…

- … is an English speaking, tropical country at the northern coast of South America.
- Borders with Suriname, Venezuela, and Brazil
- Land surface: 215 000 km^2
- Population: 750 000 (in 2002)
- Main commercial and production zone is a narrow strip along the coast, where >90% of population lives and capital Georgetown is located

Figure 1: Guyana's location on the world map. (Source: Graphic Maps 2010)

Economy

- Among the poorest countries in South America
- Economy based on production and export of natural resources and primary commodities: agriculture, forestry, mining.
- Main export goods: gold, sugar, rice, bauxite and raw and processed timber.
- Tourism has recently been identified as a potential source of revenue, and is expected to be a major contributor to the economy in the future.



- Import-dependent, especially fossil fuels to meet energy needs: secondary fuels accounted for 25% of imports in 2009
- The value of Guyana's imports is normally higher than the value of its exports, which reached a mere 65% of total import value in 2009. (All numbers: National Bureau of Statistics, 2010)

Emissions profile

According to Guyana's Initial National Communication to the UNFCCC (Government of Guyana, 2002), the country's total emissions of carbon dioxide (CO_2), nitrous oxide (N_2O) and methane (CH_4) amounted to 1.5 Megatons[1] CO_2 equivalents ($MtCO_2e$) in the reference year 1994, with fuel combustion identified as the major emissions source. CO_2 was the principal greenhouse gas (GHG) emitted (Government of Guyana, 2002). This is due to the country's high dependence on fossil fuels used in power-generating utilities, transport, agriculture, fishing, manufacturing, commerce, residences and tourism as well as international aviation and the marine sector. Fuel combustion, mainly for the industry and energy sectors, was responsible for 100% of CO_2 emissions and as much as 96.5% of total emissions (Government of Guyana, 2002). These emissions are counteracted by the land-use, land-use change and forestry (LULUCF) sector with its large-scale forest resources, which were estimated to sequester a total of 26.7 Mt CO_2e in 1994. This means that Guyana is a net GHG sink with an emissions balance of -25.2 $MtCO_2e$ for 1994.

However, the government acknowledges that it faced significant gaps in data collection, capacity and resources for the elaboration of the Initial National Communication. Because of this, the reported figures represent "*crude estimates […] due to inadequate data*" and are affected by high uncertainties (Government of Guyana, 2002, p. 5). Indeed, the World Resource Institute's (WRI) Climate Analysis Indicator Tool (CAIT) provides a very different emissions profile for Guyana. According to CAIT data[2], the main part of the country's emissions comes from agricultural production and processing, with CH_4 and N_2O emissions constituting 72% of total emissions (WRI, 2010), compared to 3.5% reported by the Government (2002). According to the WRI, emissions of CO_2, CH_4 and N_2O reach 1.5, 1.7, and 2.5 MtCO2e/yr respectively, amounting to a total of 5.6 Mt CO_2e (WRI, 2010). This can be compared to the 1.5 $MtCO_2e$ reported by the Government of Guyana (2002) (taking note of the fact that CAIT data is for 1995, and the base year for the National Communication is 1994). For the base year 2000, which will be the starting point of Guyana's Second National Communication to the UNFCCC, WRI reports emissions of 1.6, 1.1, and 2.5 $MtCO_2e$ for CO_2, CH_4 and N_2O, respectively, and a total of 5.2 $MtCO_2e$, and 2005 data for the same gases add up to 1.5, 1.3, and 2.5 MtCO2e, amounting to a total of 5.3 $MtCO_2e$.

Comparing these numbers, WRI numbers more than triple the amount of emissions reported for Guyana, reflecting the importance of the agricultural sector much better than the data provided in the Initial National Communication, which reports that emissions come almost exclusively from the energy sector. As the Government itself admits, the data quality from its Initial National Communication is inadequate, and the emissions information provided is therefore not very reliable (Government of Guyana, 2002).

The role of forests

Guyana is a country with an extensive forest cover, although the absolute forest area is reported slightly differently by different sources: numbers range from 140 000km^2 (or 65% of country territory) (ter Steege, 1995), over 151 040km^2 (or 70%) (FAO, 2005) up to 164 500km^2 (or 75%) (Government of Guyana, 2002). Forest types include swamp and mangrove forests along the coast, as well as rainforest, seasonal forest and dry evergreen forest in the interior (ter Steege, 1995). According to the Food and Agricultural Organization (FAO) (2005), a total of 5.8 million hectares or 38% of Guyana's forest area has been allocated for commercial use; however, deforestation rates in Guyana have been very low in the past (ter Steege, 1995, 1998; FAO, 2005), mainly due to low population density (ter Steege, 1995). According to

[1] 1 megaton = 1 million tons

[2] The CAIT database is based several different sources. See http://cait.wri.org for details

FAO (2005), there was no change in forest cover between the years 1990 and 2000, nor between 2000 and 2005, and over 60% of the forest area is reported to be undisturbed by human interference, qualifying as pristine rainforest.

FAO (2005) estimates the average amount of above-ground biomass per hectare to 121-230 tons, depending on forest type, which results in a weighted average of 126 tons carbon per hectare (tC/ha), whereas Conservation International[3] (2009) report values of 198-211 tC/ha for above-ground carbon. These different numbers amount to a total forest carbon stock ranging from 1.8 to 2.1 Gigatons of carbon (GtC)[4] or 2.8 to 3.5 GtC depending on the assumed carbon per hectare and forest cover estimates. It becomes obvious that there are great uncertainties in the actual carbon stock in the Guyana forest ecosystem. The different estimates for Guyana's total forest carbon content above ground can be compared in Table 1 below.

Table 1: Above-ground carbon in Guyana's forests, resulting from different data sources (in GtC)

Forest area / **Carbon content**	ter Steege (1995) 14 million ha	FAO (2005) 15.1 million ha	Government of Guyana (2009) 16.4 million ha
FAO (2005) 126 tC/ha	**1.8**	**1.9**	**2.1**
Conservation International (2009) 198-211 tC/ha	**2.8-3.0**	**3.0-3.2**	**3.2-3.5**

The characteristics of Guyana's forest sector allow classifying it into a group of 11 developing countries with high forest cover and low rates of deforestation (HFLD) (da Fonseca et al., 2007). HFLD countries are countries with a forest cover over 50% in 2005 and average annual deforestation rates lower than 0.22% (the global average for 1990-2000). They are estimated to store 18% of the world's tropical forest carbon (da Fonseca et al., 2007), and even though deforestation rates are low at present, it is possible that these countries could increase logging in order to spur economic growth and development. Thus, there is a chance that Guyana's current low rates of deforestation and degradation may increase over the next years due to several factors. One factor is the expansion of agricultural activities projected by the Low Carbon Development Strategy (LCDS), currently the most prominent scenarios discussed (Office of the President, Republic of Guyana, 2009). Another is the project of upgrading the existing unpaved road that connects Georgetown with Brazil, running through Guyana's forested hinterlands (Conservation International, 2009).

The first scenario has been produced by the Government of Guyana in their LCDS and is based on the assumption that practically all of Guyana's forest area is suitable for agriculture and is thus threatened by conversion into agricultural cropland. The government calls this scenario an "*economically rational development path*" and assumes that Guyana's deforestation rates will in consequence boost from 0% to 4.2% annually in the near future (Office of the President, Republic of Guyana, 2009, p 15), which would mean a forest area loss of 634 000 ha and 80 (130) MtC (or emissions of 293 (476) $MtCO_2$) every year[5]. This would be a so far unprecedented acceleration in deforestation rates to a level which is magnitudes higher than the annual rates of high deforestation in countries such as the DR Congo (0.38%) or Brazil

[3] Compiling data and information from several sources
[4] 1 Gigaton=1 billion tons
[5] Using FAO (2005) forest area and C/ha, and (using Conservation International (2009) average tC/ha); compare Table 1

(0.52%) for the years 1990-2000 (FAO, 2005). The assumptions of the LCDS can therefore be considered to be at the extreme top end of options for future deforestation scenarios, and the numbers should be regarded with care.

The second scenario on the other hand has been described and well quantified by Conservation International (2009) in a report for the Inter-American Development Bank. This scenario concentrates on the area along the currently unpaved Georgetown-Lethem Transport Corridor (GLTC), connecting Georgetown with Brazil, whose upgrade (paving and expansion) is part of the Initiative for the Integration of Regional Infrastructure in South America (IIRSA). The road leads through Guyana's so far undisturbed and remote hinterland, which is expected to become much better accessible through road paving, most likely leading to expansion of economic activities and settlement along the transport corridor (Conservation International, 2009). Conservation International (2009) have quantified the resulting threat to the forest and developed different deforestation scenarios, with the most conservative (highest deforestation scenario) assuming a deforestation rate of 0.5%[6]. This would correspond to a deforested area of 75 500 ha and emissions of 34.9 (65.6) $MtCO_2e$ per year (FAO, 2005; Conservation International, 2009). According to Conservation International (2009) these numbers are the high end of possible emissions, whereas their lower estimates of deforestation rates of 0.1% reflect effective REDD and policy scenarios. It is interesting to note that even in an effective REDD scenario, deforestation rates in Guyana would slightly increase due to the infrastructure upgrade, whereas maintenance of the business as usual status (no deforestation) is considered to be unlikely, as economic development is one of the country's top priorities (Conservation International, 2009).

Guyana and REDD

Already ten years ago ter Steege (1998) saw Guyana at a crossroads between forest conservation and its utilization for economic development. Nowadays this situation is the basis for Guyana's Low Carbon Development Strategy (LCDS) that aims to ensure economic development while preserving the country's forest resource and its carbon stocks for national and global benefit. Guyana has realized that the forest is its most valuable asset in today's climate change discussions (Office of the President, Republic of Guyana, 2009), and in consequence actively participates in the shaping of a future REDD-regime, which would compensate forest nations not only for reducing deforestation rates, but also for protecting, enhancing and sustainably managing existing carbon stocks (REDD+). As HFLD country, the REDD+ concept including compensation for preservation of existing carbon stocks could prove very beneficial for Guyana, as it would not benefit much from a pure REDD approach to reduce (historical) emissions from deforestation and degradation (da Fonseca et al., 2007; Conservation International, 2009). In order to forward its position as country with valuable forest carbon resources, Guyana participates in the World Bank Forest Carbon Partnership Facility (FCPF), and in addition has signed a bilateral agreement with Norway which will provide the main funding for implementing the LCDS.

Low Carbon Development Strategy (LDCS)

Guyana's LCDS, launched in June 2009, seeks to address the government's priority of attracting resources for national economic grow and development while contributing to reductions of global carbon emissions through the use of Guyana's forest resources as the country's major asset (Office of the President, Republic of Guyana, 2009). The LCDS outlines a range of expected future compensation payments for forest conservation, and defines how these payments will help to realign the country's development path

[6] 0.5% also being the average deforestation rate in Brazilian states with agricultural frontier where paved highways have been established (CI et al 2009)

towards low carbon intensity, enhanced use of renewable resources such as hydropower, and improved adaptation infrastructure. While not specifying a detailed source of funding, the LCDS provides a framework into which REDD, Readiness Planning, and other initiatives such as bilateral agreements will fit (Office of the President, Republic of Guyana, 2009). So far the main funding the LCDS implementation comes from the agreement with Norway; however other institutions such as the World Bank, the Clinton Climate Initiative, and McKinsey and Company are supporting Guyana's (ESRI, 2010).

Memorandum of Understanding between Norway and Guyana

The Memorandum of Understanding (MoU) between Guyana and Norway is a first-of-its-kind bilateral contract aimed at cooperation between the two countries in the fields of climate change, biodiversity and sustainable, low carbon development. The main part of the agreement is comprised by performance-based payments of US$30 million in 2010 and potentially up to a total of US$250 million by 2015 in compensation for Guyana's accelerated efforts to limit forest-based greenhouse gas emissions and establish appropriate institutions to achieve this objective (Government of Guyana & Government of Norway, 2009b). The support will finance both the implementation of Guyana's Low Carbon Development Strategy, and Guyana's capacity building efforts for REDD+ and the LCDS (Gov. of Guyana & Gov. of Norway, 2009a). However, as this is a pioneer agreement without precedence cases so far, and as Guyana has been notorious for corruption in the past, there are a number of safeguards that need to be fulfilled before payments are made. There are seven main criteria specified in the Joint Concept Note (Gov. of Guyana & Gov. of Norway, 2009a), which provides the framework for implementation of the MoU:

1. **Framework:** A strategic, internationally recognized framework is required for a consistent development of Guyana's REDD+ efforts, such as UN REDD or the WB FCPF (Guyana is member of the latter).
2. **Stakeholders:** An institutionalized, systematic, transparent and externally monitored process of multi-stakeholder consultation will be ensured, enabling participation of all potentially affected and interested stakeholders at all stages of the REDD+/LCDS process; especially of indigenous and forest-dependent communities.
3. **Governance:** Development of a transparent, rules-based, inclusive forest governance, accountability and enforcement system, based on findings from international assessments of Guyana (e.g. CIFOR), to be integrated in the LCDS.
4. **Financial mechanism:** Payments will be channeled through a financial mechanism, executed by the Ministry of Finance and run by a reputable international organization, which will ensure full national and international oversight of financial flows. The mechanism must be operational before any contributions can be disbursed from Norway.
5. **MRV:** A road map for a national MRV-system will be developed according to IPCC Good Practice Guidance, providing a sound basis for emissions reporting. First priority for the system is the establishment of a baseline database of Guyana's forest sector, including historical and current deforestation rates, by October 2010 the latest[7].
6. **Rights:** The rights of indigenous peoples and forest based communities will be respected and protected throughout Guyana's REDD+ and LCDS efforts, and a mechanism will be created to enable the effective participation of these groups in planning and implementation of REDD+.
7. **Annual assessment and verification:** Independent overall assessments will be conducted of Guyana's performance according to these indicators. The assessments will be done every year by neutral expert organizations, appointed jointly by Guyana and Norway.

These so-called enabling criteria set a robust quality framework for the development and implementation of Guyana's REDD and LCDS action plans, ensuring independent third party verification of all important

[7] This system is currently being developed by ESRI (ESRI 2010).

steps and outcomes, government-external administration of funds, as well as an emphasis on and respect for indigenous groups, stakeholders, and their rights. A more critical part of the agreement are a range of preliminary REDD+ performance indicators specified in the Joint Concept Note which will be used to assess Guyana's performance and Norway's corresponding financial contributions, until a sound and credible MRV accounting framework is established:

- ➔ A reference annual deforestation rate of 0.45%[8]
- ➔ A carbon content of 100 tC/ha or 367tCO_2/ha for avoided deforestation
- ➔ A carbon density of 400 tC/ha for forest degradation
- ➔ A preliminary carbon price of USD 5/ton CO_2

All these preliminary indicators will be replaced once better data and/or a functioning MRV system is available. In the meantime they are used for annual performance assessments. While the carbon estimates per hectare are very conservative compared to the data compiled in Table 1, and carbon prices are realistic compared to present voluntary market prices for forestry projects (Hamilton et al., 2009), the most critical point here is the methodology to define the reference level of 0.45%. The implication of the chosen reference level approach is that Guyana will actually be allowed to increase its emissions until the 0.45% reference level is met. Depending on different estimates of current deforestation rates this means a *compensated increase* of between 0.15 and 0.45%, compared to current deforestation rates of 0.3% (Word Bank Forest Carbon Partnership Facility, 2009) and 0% (FAO, 2005) respectively. Although the Joint Concept Note states that this reference level will be recalculated by October 2010 the latest, it is still used for calculating financial contributions for the first year of the MoU. Considering the attention that this agreement will receive for being one of the first of its kind, this point could be expected to be highly contentious and harmful to the public perception of the REDD concept. A country receiving payments for an actual increase in deforestation, especially under one of the first bilateral REDD+ agreements, might potentially aggravate the situation of HFLD countries that in general have difficulties defining credible reference scenarios due to low historical deforestation rates.

Nevertheless, in many of its conditions, the MoU actually meets its objective of providing "*the world with a relevant, replicable model for how [REDD+] can align the development objectives of forest countries with the world's need to combat climate change*" (Gov. of Guyana & Gov. of Norway, 2009b, p. 2). It can serve as an example for future REDD+ agreements in absence of a UNFCCC-agreed process, and is open to adjustment and refinement of its conditions whenever a new international framework is agreed upon.

Conclusions and research implications

Guyana as a typical High Forest cover, Low Deforestation (HFLD) country is an interesting object for studying the applicability and application of the REDD+ concept on the ground. While the political ground for the inclusion of forest stock conservation is laid with the expansion of "REDD" to "REDD+", HFLD countries will in practice still struggle to define a credible reference scenario and prove the additionality of their activities. Guyana actively participates in UNFCCC negotiations on that issue. However the country has realized that UN processes are slow and can encounter a deadlock. Therefore, the country has taken a proactive step with this bilateral agreement to advance the accountability and capitalisation of its forest carbon stocks in climate change mitigation, outside the somewhat slowed-down UNFCCC-REDD process.

[8] The methodology used gives equal weight to national and collective tropical deforestation rates; the former set at 0.3% according to Guyana's FCPF Readiness Plan and the latter at 0.6% as reported by FAO 2005

In terms of research, it would be interesting to investigate whether bilateral agreements of this kind really benefit the global climate, or primarily further the development aspirations of forest-rich countries. In the case of Guyana, the country's development in the REDD+ process should be accompanied by scientific assessment; besides observing the performance of the MoU with Norway, the formulation and implementation of a national REDD strategy, and a sound and credible MRV system, the role of this MoU as model for other countries should be assessed in further detail. The indicators specified in the Joint Concept Note should be scrutinized and their performance scientifically accompanied and the overall applicability of the methods used here should be critically tested. In particular the method for defining the initial reference level should be assessed for its usefulness in other HFLD countries.

Guyana as a FCPF member country will be study object under ongoing FOCALI research as well as a current PhD project on HFLD countries.

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