



The European Union's programme on Tropical Forests and other
Forests in Developing Countries

**Developing alternatives for illegal chainsaw milling through multi-
stakeholder dialogue in Ghana and Guyana**

*Report on the Regional Workshop on Chainsaw
Lumbering in the Guiana Shield/Caribbean*

held at the Regency Suites/Hotel, Georgetown, July 8-9, 2009



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A collaborative project of Tropenbos International, Forestry Training Centre Inc.
and Iwokrama International Center of Rainforest Conservation and Development.

Developing alternatives for illegal chainsaw lumbering through multi-stakeholder dialogue in Ghana and Guyana

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1. Introduction

This report seeks to give an account of the **Workshop on Chainsaw Lumbering in the Guiana Shield/Caribbean** held at the Regency Suites/Hotel, Georgetown, Guyana during the period July 8-9, 2009.

The report is structured in the following manner:

1. Introduction
2. Background to the workshop
3. Proceedings of the Regional Workshop on Chainsaw Milling in the Guiana Shield/Caribbean
4. Annexes
 - Annex 1. Agenda
 - Annex 2. Speeches at the opening ceremony
 - Annex 3. List of participant
 - Annex 4. Photographs of the workshop

2. Background to the Workshop

The workshop on **Chainsaw Lumbering in the Guiana Shield/Caribbean** was organized by the Project Management Team of the Chainsaw Milling Project in Guyana within the framework of the EU financed project “**Developing alternatives for illegal chainsaw lumbering through multi-stakeholder dialogue in Ghana and Guyana**”. This workshop was the second of two regional workshops (the first was held in Ghana for West African countries) organized by the project and provided a forum for decision makers and scientists in the region to present and review issues and options for regulating chainsaw lumbering/milling in their respective countries.

The Chainsaw Milling Project

The Chainsaw Milling Project focuses on the broad theme of forest governance in Ghana and Guyana which are countries with high incidence of chainsaw lumbering.

Chainsaw lumbering refers to on-site conversion of logs into lumber using chainsaws. This practice offers livelihood opportunities to many people in both rural and urban areas in Ghana and Guyana. One advantage of chainsaw lumbering is that it pairs low capital requirements with high labour input making it relatively easy for small scale operatives in rural areas to produce timber. Chainsaw lumbering affords jobs to people in rural areas and in addition, the price of chainsaw lumber is generally within the means of poorer sections of the population.

Chainsaw lumbering was banned in Ghana in 1998, but the practice is widespread despite measures put in place by government to enforce the ban. Several factors have promoted the widespread illegal chainsaw lumbering in Ghana. Some of the key factors are: high demand for chainsaw lumber due to relatively cheap prices, failure of the sawmills to supply 20% of their lumber products to the domestic market as required by law, strong support of some local communities for illegal chainsaw operations and connivance of some law enforcement personnel and Forest Services Division staff with illegal chainsaw operators. The illegal chainsaw activities contribute to forest degradation and conflict with several other stakeholder groups like the government, traditional sawmill owners, conservationists and other owners of trees and forest resources.

In Guyana, chainsaw lumbering is permitted and regulated by the Guyana Forestry Commission. However, although the Guyana Forestry Commission has developed and implemented a number of measures to improve the management of chainsaw milling operations, there is still the opportunity to review the practice to align it more with national initiatives on reduced impact logging, sustainable rural livelihoods and poverty alleviation.

In 2008, the project embarked on research into the causes and consequences of chainsaw lumbering, to better understand the phenomenon in the two countries. The research is being compiled into case studies.

Aims and Objectives of the Regional Workshop

One of the expected results of the project (result 2) is to determine international best practice for policies to address illegal chainsaw lumbering. This will be done through sharing of experiences and approaches for policies from decision makers within the forest authorities around the world.

The first step in this result is the organization of two regional meetings to identify the main issues in West Africa and the Guiana Shield/Caribbean region. The case studies of Ghana and Guyana will serve as input to these regional meetings. The experiences from the regional meetings will be summarized in a synthesis paper that will be discussed and refined during an e-conference with participation from experts around the globe. The outputs of these exercises will be documented in a publication of the European Tropical Forest Research Network (ETFRN) News and distributed through this network.

The regional workshop for Guiana Shield/Caribbean will target decision makers and scientists in the region where chainsaw lumbering activities occur to present issues and options for regulating chainsaw lumbering.

The objectives of the workshop were to:

- Present the case studies of Ghana and Guyana to a wider audience;
- Share and learn lessons from international experiences and approaches for options, and models that address chainsaw lumbering;
- Discuss the issues and agree on possible policy options for aligning the practice with sustainable forest management and rural livelihoods; and
- Broaden the understanding of the practical perspectives gained in the case studies.

Expected Outputs

The expected outputs of the workshop were:

- An understanding of the shared issues related to chainsaw lumbering and policy options taken by neighboring countries to address these issues, and their impacts on the sub-sector;
- Recommendations for addressing the negative aspects of chainsaw lumbering issues while maintaining or enhancing the socio-economic benefits;
- General workshop proceedings that captures lessons learnt; and
- A Synthesis paper (issues and options), produced jointly with the results from the West African and Guiana Shield/Caribbean workshops.

Participants

The workshop involved the following participants:

- 1) Representatives from Government Agencies responsible for Forest Management from the Guiana Shield/Caribbean countries of Belize, Dominica, St. Vincent, St. Lucia, Trinidad, and Suriname;
- 2) A post-doctoral researcher from the Netherlands presenting the Bolivia Case Study;
- 3) A representative from the Ghana Chainsaw Milling Project;
- 4) Representatives from Tropenbos International Netherlands and Suriname;
- 5) Representatives from the Caricom Secretariat in Guyana;
- 6) A Representative from the US Forest Service;
- 7) Representatives from the natural resources management (regulatory) agencies in Guyana;
- 8) Representatives from the Chainsaw lumbering industry in Guyana and other local stakeholders; and
- 9) The Chainsaw Milling Project staff in Guyana.

Forum Structure

The first day of the workshop focused on presentation of country case studies and reports on chainsaw lumbering while the second day focused on group discussions of prepared questions, followed by plenary presentations and discussions. The workshop culminated with a synopsis of country issues and options presented by Dr. Paulette Bynoe, Director (ag.) of the School of Earth and Environmental Science, University of Guyana.

3. Proceedings of the Workshop

This section provides an overview of the activities for the workshop.

3.1 Opening Ceremony

The workshop was officially opened by Dr. Raquel Thomas, Director of Resource Management and Training of Iwokrama International Centre who welcomed distinguished guests and participants. Dr. Thomas also chaired the Opening Ceremony of the workshop.

The welcome remarks was followed by the showing of a video documentary on chainsaw lumbering in Guyana produced by the project, and speeches by Dr. Roderick Zagt, Programme Coordinator of Tropenbos International, Mr. Edward Goberdhan, Deputy Commissioner of Forests on behalf of the Guyana Forestry Commission, and Ambassador Geert Heikens, Head of the European Commission Delegation in Guyana. The Honourable Minister Robert Persaud, MBA, M.P. Minister of Agriculture with responsibility for Forestry, offered the feature address. *See Annex 2 for full speeches made at the opening ceremony of the workshop.*

Summary of the Speeches at the Opening Ceremony

Speech by Dr. Roderick Zagt, Programmed Coordinator, Tropenbos International

Dr. Zagt in his speech informed the gathering that this workshop followed on the heels of another regional workshop held in West Africa by the project. This indicated that chainsaw milling is a global phenomenon and many countries share problems and opportunities similar to Guyana. It is hoped that the project and regional workshops would provide increased understanding of the commonalities and differences between countries and issues that surround chainsaw milling and to explain and analyze what were successful policies and what were failures, and why policies fail. After the workshop, the information gathered at both workshops would be expanded through internet discussions into a global analysis of issues and options for sustainable chainsaw milling, of which the information is meant for forestry decision makers in the region and worldwide to guide successful policy that harness the potential of chainsaw milling to improve rural livelihoods while addressing its negative aspects and saving forests.

He commended the significant strides made by Guyana in capturing the potential of chainsaw logging as a way of developing community livelihoods, setting an example for many countries that struggle with the same problem.

He noted however, that even though the policies of the Government of Guyana have mitigated many of the immediate challenges related to chainsaw milling, some longer term challenges still needs consideration.

Evidence suggests that chainsaw milling is a key economic activity for the nation. In spite of its significance chainsaw milling is only mentioned once in the new forest bill and as many times in the national forest plan. Given the significance of chainsaw milling to the local economy, wouldn't the sub-sector be in need of a specific approach, policies and set of rules such as a tailor made code of practice and specific representation in forums where forest policies are shaped?

The fact that chainsaw operators incur so many fines may imply that they tend to err on the wrong side of the law but it may also demonstrate that the current set of rules and regulation that may not be totally compatible with the specific features of the sub-sector.

Some key questions to ask, according to Dr. Zagt, are:

1. What will be the status of chainsaw milling and the condition of the small scale forest sector in five or ten year's time?

2. Is chainsaw milling seen as an unavoidable but temporary step in the development of hinterland communities, bound to disappear as more appropriate technologies or livelihoods emerge and/or the resources get exhausted? Or will chainsaw milling remain with us for years and years to come – and if so, to what extent are current practices, current resource allocations and current production volumes sustainable?
3. Even though forests cover 76% of the country, most of them, particularly the accessible ones suitable for community forestry, are located on fragile lands. Where are the forests to sustain the growth of that sector and support hinterland development?
4. There are numerous new developments that raise hopes that Guyana's intact forests can contribute to income to the nation. But who will pay a REDD cent for chainsaw logging?
5. Guyana's Low Carbon Development Strategy "will not stop existing economic activities or threaten the employment of those already working in the forest, *providing those activities are in accordance with internationally accepted practices*". Is chainsaw milling a threatened livelihood?

These questions and dilemmas, he pointed out, can only be addressed if all stakeholders jointly identify the drivers and impacts of chainsaw milling, generate options, discuss future scenarios and agree on actions to be taken to ensure appropriate forms of community forestry as sustainable livelihoods, or agree on alternatives to chainsaw milling. The actions should address both the short-term practical improvement of the functioning of chainsaw communities and small loggers associations, and the longer term strategic issues confronting the nation, including the relative importance of small scale forestry, large scale forestry and forests for climate mitigation.

The results of this workshop, he informed, the experiences of different countries in addressing the same problems, along with specific studies already conducted and the viewpoints of different stakeholders, will serve as an input in multi-stakeholder dialogue about chainsaw milling which is organized under the Chainsaw Milling Project.

Tropenbos International role is to contribute to the better use and governance of tropical forests for the benefit of people, conservation and sustainable development.

Dr. Zagt concluded by wishing participants a fruitful workshop.

Speech by Mr. Edward Goberdhan, Deputy Commissioner of Forests, on behalf of the Commissioner of Forests, Guyana Forestry Commission

Mr. Goberdhan, representing the Commissioner of Forests, also underscored the Guyana Forestry Commission's (GFC) tremendous positive advances in the regularization and regulation of chainsaw milling in Guyana. These advances, he noted, did not occur overnight but rather they were the result of a very collaborative process with chainsaw millers over the years.

The GFC, he said, is happy to report that compliance of the chainsaw millers with the GFC guidelines has evolved to the point where it was now considered to be satisfactory. He however pointed out that the GFC need to strive continuously for improvement in that respect (compliance).

Mr. Goberdhan indicated that the GFC expects that the results of the workshop would provide valuable information to both upgrade the regulatory framework, and to contribute more to the policy formulation process. He said it was GFC's fervent hope that whilst there is focus on the environmental issues, the fact that Guyana is covered with tropical rainforests, this asset must contribute to the socioeconomic improvement of the livelihoods of hinterland residents: the stakeholder group that is most involved in the chainsaw milling activity, and this must be kept in mind.

In closing, he made the commitment to full participation and collaboration with all other parties present, on behalf of the GFC.

Speech by Ambassador Geert Heikens, Head of EC Delegation in Guyana

The EC Ambassador, in his speech, informed the workshop that the Chainsaw Milling Project is part of the overall effort of the EU towards the preservation and sustainable use of the environment.

The European Commission adopted in 2001 an “Environment Integration Strategy” which laid down how to integrate environment in development cooperation efforts. The EU, he said, has since taken the lead in reaching international agreement on environmental commitments (such as the UN Convention on Biological Diversity, the UN Convention to Combat Desertification and the Kyoto Protocol) and has been promoting the need to help developing countries fulfill their resulting obligations.

The European Consensus on Development (adopted in 2005) commits the EU to providing more and better aid and sets the pursuit of the MDGs as the primary objective of the EU development cooperation. Environmental sustainability in specific is enshrined in MDG 7. Ambassador Heikens highlighted that in this respect the EC is providing significant support to the environmental sector in Guyana in the form of three environmental projects under implementation, a) the Guyana Shield Initiative implemented by UNDP which adopted Iwokrama as a pilot site, b) the Forestry Research Network aiming to establish an international network of institutions to implement applied research in Forestry management and that benefits directly Iwokrama and c) the project “Developing alternatives for illegal chainsaw lumbering through multi-stakeholders dialogue in Ghana and Guyana” that was hosting the event.

He also noted that the pilot cases of the two countries are particularly interesting as the two countries adopted different strategies: Ghana outlawed chainsaw lumbering in 1996 whilst Guyana on the other hand, did not ban it but progressively introduced increased controls. Clearly both countries share the concern that legality applies to both the external and internal markets and give priority to a system that enhances dialogue and ease the level of tension between and within communities.

Ambassador Heikens also pointed out that there is today the issue all across the world of “legal wood” and an effort of the world-wide community towards a system of “wood traceability”. This of course should include wood for exports and wood for the internal market in which there is no dual system and double standards of legality.

The Ambassador took the opportunity to commend the Government of Guyana for its well known efforts to contribute to better environmental care in the framework of climate change and encouraged Tropenbos and its local partners to continue their efforts for the successful implementation of the Chainsaw Milling Project with the hope that it will contribute to better forest governance to the benefit of the local communities and by extension, the global communities.

Feature Address by Hon. Robert M. Persaud, MBA, MP, Minister of Agriculture with responsibility for Forestry

Minister Robert Persaud outlined that chainsaw milling has been an activity which has been addressed at several levels in terms of policy and operational aspects in Guyana, and which remains very important to forest resources planning and utilization especially at the level of small and medium size operators. He informed the meeting that chainsaw milling is allowed in Guyana and its existence is supported by the necessary institutional framework to permit and regulate its use. This framework, he said, will continue to be reviewed.

Minister Persaud outlined that the policy objective of chainsaw milling is to ensure a working framework where the goal of attaining economic and social benefits does not lead to environmental sustainability and sound forest management being compromised.

He noted also that one cannot ignore the fact that the chainsaw milling sector in Guyana faces several challenges despite past efforts in capacity building. Some of these challenges included lower than expected recovery rates, the need for capacity building in the use and maintenance of chainsaws, and the implementation of effective health and safety standards to protect operators. He also pointed out that

despite the small size of the operation more can be done in shifting the existing marketing paradigm to forward plan conversion activities so maximum benefits can be gained.

The dialogue on chainsaw milling, he posited, is even more important now given Guyana's thrust of finalizing a Low Carbon Development Strategy, which will be advancing for wide international support, as this type of forest activity has significant bearing on the Strategy since it supports rural and hinterland livelihoods for many and, at the same time, can have various environmental and social impacts.

Notwithstanding these advances, Minister Persaud emphasized the importance of proper practice by chainsaw milling operators. He emphasized that it is vital for the standards and guidelines of the GFC and the EPA to be complied with closely as the benefits of chainsaw milling will not be realized.

He noted that he expected that the issues raised and others will be examined further as the experiences of various countries represented are assessed at the workshop and hope that lessons can be learnt from each other's successes and approaches.

Minister Persaud concluded the feature address by underscoring that the Government of Guyana welcomed this most timely dialogue and looked forward to the results of the two day sessions.

The opening ceremony was followed by a 15 minutes coffee break.

3.2 Workshop

3.2.1 Introduction of participants

After the coffee break, participants were asked to introduce themselves briefly. The workshop was attended by 81 participants comprising 16 foreign delegates and 65 local stakeholders. Please see Annex 3 for a list of participants who attended the workshop.

3.2.2 Case Study and Country presentations

Case study presentations were made by the participating countries in the Chainsaw Milling Project: firstly by Guyana represented by Mr. Godfrey Marshall, Director of the Forestry Training Centre Inc. and then secondly by Ghana represented by Ms. Mercy Owusu Ansah, Facilitator of the Chainsaw Milling Project on behalf of Dr. Emmanuel Marfo, Research Scientist of the Forest Research Institute of Ghana.

The case study presentations were then followed by country presentations for Belize, Suriname, Dominica, Trinidad and Tobago, Dominica, St. Lucia, St. Vincent and the Grenadines. Dr. Charlotte Benneker also presented a case study of Bolivia.

Guyana Case Study

presented by Mr. Godfrey Marshall

Guyana Statistics

Land area	214,970 square km
Forest Cover	186,000 square km
Population	750,000
State Forests	13.8 million ha (64% Forests)
Deforestation rate	<1% (FAO)
Protected areas	2% (including Iwokrama)
Annual Timber Production	400,000-500,000 cubic metres
Chainsawn Lumber Production 2008	67,000 cubic metres
Forestry contribution to GDP	4% (considering primary timber products only)

Competing land uses for forests are mining, hydropower, development, agriculture, ecotourism, infrastructure, Amerindian interests.

Access to forest resources for logging

- There were always small loggers in Guyana. However, access to forest resources for logging purposes was legally permitted through a licensing system initiated in 1923 (Vieira, 1980).
- Today access to forest resources are granted through:
 - Forest concession agreements which stipulates duration, area, and terms negotiable
 - State forest permits for small loggers which has a duration of less than or equal to two years, with area and terms prescribed.
 - Agricultural leases where commercial use of timber is subject to forestry legislation
 - Private lands where removal from property and conveyance on public roads are regulated.

Profile of small loggers (prior to chainsaw milling)

- Small loggers produced about 1000 cubic metres per year.
- The operations were made up of 2-3 man partnerships, families or cooperatives
- They produced mainly round logs for sawmillers and small quantities of split wood, posts, sawn timber, firewood and charcoal.
- Their main clients were sawmillers, match factory, boat builders, and bakeries.
- Difficult and hazardous work.
- 3-6 week production cycle.

The emergence of chainsaw milling in Guyana

Chainsaws were introduced in 1967. Somewhere between 1967 and the early 1970s, small loggers started ripping of logs into lumber.

Farfan and Mendes Ltd. has been very responsive by developing people's skills in the technology (type of chains etc), to facilitate the ripping process.

Chainsaw lumbering started simply to facilitate building of camps, simple bridges and culverts but then real money in the business began to take hold. The easy technology along with short production cycle (one week), support from loggers, timber dealers, vendors of chainsaw equipment and other business men (truckers, vendors of groceries, fuel, etc), and good internal markets for rough sawn timber (piers, bridges, revetment, pens, fences, etc) regardless of the quality of timber produced encouraged the practice. Then suddenly chainsaw milling exploded with new entrants into the subsector as a result of:

- a) contraction in the bauxite industry,
- b) massive retrenchment in the public service in the late 1970s,
- c) few opportunities for retrenched workers in other sectors,
- d) opening up of 65 miles road in intact forests between Linden and Mabura,
- e) the start of a building boom in the country, and
- f) the easy access to chainsaws (affordability).

Issues and challenges that resulted from the explosion of chainsaw lumbering

- Involvement of entire communities and heavy dependence on chainsaw milling.
- Resentment from established sawmillers who virtually lost control of a huge segment of the internal market.
- Difficulty in monitoring all chainsaw operations because of its easy portability.
- Poor compliance with national guidelines leading to irresponsible attitudes to forest conservation.
- Opportunities for illegal activities.
- Increase in the number of stakeholders involved along the production chain.
- Relatively small profit margin for small loggers and communities reported.
- Transporters and vendors of fuel and rations garner a significant portion of the revenue generated from chainsaw milling operations.

- Inability of chainsaw operators to produce lumber of good quality and/or obtain fair prices for lumber
- Internal conflicts sap the collective entrepreneurial capacity of loggers' associations and communities (too much bickering, poor internal communication procedures)
- Poor record keeping leading to poor accountability for the implementation of GFC's procedures
- Limited understanding of policy/legal requirements/obligations

Summary of core violations by chainsaw operators (ITTO, 2004) using FAO's definition for illegality:

- a. Lack of documentation or expired documentation
- b. Cutting of undersized trees
- c. Poaching
- d. Harvesting protected species
- e. False declaration of harvested volumes

- Issues of waste, especially in cases of illegal harvesting.
- Issues with occupational safety and health.

Policy responses:

1. Training provided by the Forestry Training Centre Inc. for the subsector in:
 - a. New technologies such as the frame and helping people understand the benefits of new technologies.
 - b. Tree identification.
 - c. Chainsaw use and maintenance.
 - d. Tree selection, directional felling.
2. At the level of the Guyana Forestry Commission, the following interventions were made:
 - a. Training in forest management, forest inventory, forest laws, the basics of marketing.
 - b. Collaboration with UNDP, WWF, BHC to foster training.
 - c. Studies on lesser used species.
 - d. More punitive measures persons not in compliance with law.
 - e. More intensive monitoring activities.
 - f. Technical support for loggers' associations.
 - g. Discussions on better technology, i.e. portable mills.
3. Chainsaw Milling Project has also been part of the policy response as well and has targeted:
 - a. Forestry extension fostering value adding through partnerships.
 - b. Forestry extension targeting wider SFM training and awareness to improve opportunities for alternative revenue generating options (eco-system services, tourism, ntfps etc)
 - c. More consultations with stakeholders

Expectations of the Chainsaw Milling Project include:

- a. 'bottom up' policy responses and initiatives to chainsaw milling and related livelihood opportunities.
- b. maintenance of the Multi-stakeholder Platform to offer an effective means for solving problems and striving for solutions on a regular basis.

What happens with chainsaw milling in the future will depend on:

- compatibility with other forest resource based initiatives/land use;
- viable alternative business options to chainsaw milling; and
- resource availability.

Ghana case study

by Mercy Owusu Ansah presenting on behalf of Dr. Emanuel Marfo

The case study on chainsaw milling in Ghana is part of the European Commission Chainsaw Milling Project, being implemented by the Forestry Research Institute and Forestry Commission of Ghana.

The case study looked at:

- Evolution of policy and structure of CSM enterprises;
- Compared investment, jobs & recoveries of CSM and other improved milling techniques
- Identified the Drivers of chainsaw milling
- Review of consistency of policy and legal framework
- Assessed social, economic and environmental impacts

Methodology/key activities for the research:

- Build on earlier studies (e.g. Adam et al)
- Studies in 8 pilot Districts of the Project
- National FSD survey
- Expert round table meeting on CSM law (ban)
- Recovery studies: comparing the recovery from chainsaw milling and other improved technologies like the sawmill, the logosol and the woodmizer
- Impact analysis of some the key issues coming from the studies

Ghana Statistics

Land area	238,500 square km
Forest Cover	1.6 million ha (16,000 square km)
Population	22.5 million
Off-reserve forest area	400,000 ha
Annual Allowable Cut	2 million m ³ per annum (0.5 million m ³ in forest reserves 1.5 million in off-reserve forests)
Installed production capacity	5 million m ³ per annum
Production	3.3-4.4 million m ³ per annum
Local lumber production	450,000 – 1.3 million m ³ per annum
Deforestation rate	65,000 ha per year
Forestry contribution to GDP	6%

Emergence of Chainsaw Milling in Ghana

Chainsaw milling was introduced in Ghana in the early 1980s and during that time though it was recognised, there was very little control of chainsaw milling. Until after 10 years, between 1991 and 1994, there was recognition with indirect management control by the Forestry Department, and through the District Assemblies by issuing permits to fell trees, and with controls of the Forest Product Inspection Bureau.

From 1994 when the current Forest and Wildlife Policy was promulgated to 1997, chainsaw milling became a very big issue in Ghana due to the realization that forests are being lost a very fast rate. At that time there was a lot of control being implemented by the Forestry Commission where they developed procedures for logging with chainsawing and then also involving multi-stakeholders in the control and management of chainsawing through the formation of a task force and then a lot of control to Chiefs and Traditional Authorities.

Between 1997-1998 there was a complete ban on chainsaw milling in Ghana: nobody can use the chainsaw to convert logs into lumber for commercial purposes.

An analysis of the policy and legal aspects of chainsaw milling identified that the policy was unrealistic with respect to the domestic market. The law also proposed a number of structures to ensure that the domestic market is fed with lumber for the Ghanaian people, for example, by putting a quota that the regular millers should provide 20% of production to the domestic market. However, the Forestry Commission could not put in force monitoring strategies very well that would ensure this quota is kept by the sawmillers, and as a result the domestic markets were suffering.

In addition, ambiguities in the law included:

1. Questions on whether the chainsaw lumber produced can be used for own use. The law is silent on this issue and hence has led to a lot of interpretations.
2. Though CSM is outlawed in Ghana, when chainsaw lumber is being transported to various destinations, there are taxes that are paid to the government in the form of waybills on a commodity which has been criminalised.

Drivers of chainsaw milling in Ghana

1. There is a high demand for chainsaw lumber in Ghana, although illegal.
2. Prices are relatively cheaper by about 40% for chainsaw lumber compared to sawmill lumber
3. It comes with a very low investment with pre-financing facilities from dealers who are big businessmen living in the urban centres, providing all the necessary logistics to chainsaw millers in the rural communities.
4. Creation of jobs: there are many people engaged along the supply chain.

Chainsaw milling and the domestic market

The volume of trees felled in a year by chainsaw millers is about 2.4 million m³ and the lumber from these trees is about 908,000 – 1.3 million m³.

There are 27 of the key species that are felled by chainsaw millers with 4 of them very dominant on the domestic market: Dahoma, Ofram, Wawa and Mahogany.

They cut the lumber into various dimension (about 25 different dimensions)

86% of the local dealers (suppliers) indicated that they obtain their supplies mainly for chainsaw millers.

Social impact of chainsaw milling

- Creation of jobs
- Associated with a lot of conflict, esp with the Forestry Commission, Farmers whose trees are felled and with the regular sawmills.
- There is 59% compensation by chainsaw millers because they negotiated directly with farmers for crops that are damaged.
- High cost to the Forestry Commission.

Economic impact of chainsaw milling

- Rural communities benefit in several ways:
 - Provides a lot of services
 - Opening the farm area
 - Provide them with fuelwood (firewood and charcoal)
 - Main source of lumber for community development and
 - Though illegal some communities earn some taxes on chainsaw milling
 - Some kind of benefit for the community
 - Employment is about 84.3% of the rural economy
 - The revenue generated from chainsaw milling is also distributed along the chain of stakeholders with the lumber merchant earning the most. FSD also benefiting from some of the revenue although illegal.
- The Forestry Commission of Ghana is losing about US\$18 million in stumpage revenue because it is not regularized and the chainsaw operator is getting the trees almost free. This is almost twice 2000-2003 average collected stumpage by FC

- CSM pay US\$7 million to farmer and communities (38% of potential stumpage). This approx. expected 40% off-reserve stumpage revenue to the FC

Environmental impacts from chainsaw milling

- Logging intensity can be as high as 7 trees/ha
- Evidence of significant invasion in globally significant biological areas/convalescent areas
- No directional felling
- Felling below limits observed
- Recovery efficiencies for chainsaw milling are the lowest (43.5%) but not too far from the main sawmill conversion efficiencies.
 - Some sawmills conversion rates are as low as 28%.
 - Logosol had the best deviation from mean recovery (41-62%).
 - Chainsaw performed better than sawmills in terms of range of deviation (32-57%)

Enforcing the ban

The ban has been very ineffective because

- It is driven by market forces
- There is corruption among FSD officials & law enforcement agencies
- There is high rate of rural unemployment
- There is low political will to enforce the ban
- When people are arrested there is a lot of political interference, particularly chiefs and local politicians.

Overview of enforcement data

- 98% of Operators say they had ever been arrested, implying high monitoring
- Only 18% of DF say they keep verifiable records on chainsaw offences
- Avg of 2 cases reported per week
- Avg. of 5 cases reported per month
- Avg. of 4 trucks arrested FD per year (116 in total)
- 7,900 cubic meters of wood confiscated between 2007/08 in 22 Districts
- 85% of cases were said to be reported to the police
- 55% of reported cases were said to be prosecuted; 45% ended at the police station
- At least half of DM have at least one court case still pending
- Avg. official time spent in court is 2 hours/sitting
- Avg. days for processing a court case was 61 days
- FSD wins 80% of chainsaw-related court cases
- DM admit to political interference in at least 50% of cases
- Chiefs and local politicians are the main culprits

Dealing with the ban

- 80% of District Stakeholders agree-strongly agree to regularising the operation
 - GTMO failed to participate
- At least 50% of FSD DM say they want the ban reviewed

Researchers' perspective

Enforcing the ban is challenging unless 3 critical conditions are met

1. Industrial supply to domestic market guaranteed
2. FSD procedures were revised to cater for non-commercial use of timber using registered chainsaw or improved versions e.g. Logosol
3. A real commitment to deal with corruption in FSD, law enforcement agencies and secure genuine political will
4. How do we contain social impacts?

Regularisation? unresolved questions; no rush but hard rush!!!

- How to address request for timber by individuals in communities?
- What specific provisions are needed in the MOP to address this?
- What capacity (personnel & logistics) needed under a regularised regime?
- How can payment of equitable economic rent be secured?
- What is the future of a VPA regime without addressing legality of domestic timber supply
- What are the impacts on the resource base and how does it relate to plantation development and conservation?

The way forward: an urgent and open minded dialogue though a multi stakeholder approach

- The social, political, economic and environment ramifications are complex
- A multi-stakeholder approach is needed to evolve innovative policy
- Some change seems to be needed; it may come with some costs but it must come anyway

The dialogue is urgent but must be very pragmatic and needs the commitment of all stakeholders.

Questions and Answers on the Case Studies

Question 1:

1. How is ownership of chainsaws regulated in Ghana and Guyana? For example in St. Lucia a chainsaw miller must have a permit from the Forestry Department to own a chainsaw.

Answers

In Guyana, a sawpit license is required by the Forestry Commission to work in a particular area.

In Ghana, chainsaws are to be registered with the District Assembly and the Forestry Commission that keeps a record of the intended use. The chainsaws are usually used for farming purposes and is not an illegal commodity. As such the machine is not illegal unless engaged in chainsaw lumbering.

Question/View 2:

One view is that there should be incentives to do the right thing rather with less regulating as regulation comes with a cost and more difficult to manage.

Question 3:

Is there any measure in place to control the quality of lumber produced by chainsaw milling? It is now hard to distinguish between that coming from sawmill and chainsaw operators by customers and now causing bad image to be casted on sawmillers.

Question/View 4:

Production figures as reported by the GFC may include production by local mills (mobile) and should be checked.

Question/View 5:

Ghana should look at the Guyana example in regulating chainsaw through the formation of Community Logging Association.

Question/View 6:

Chainsaw operations have a lot of good parts and bad parts, i.e. income to the operators and concessionaires. On the negative side the operators suffer tremendously as there are high rates of rejects for lumber, and because of lack of finance to take back the produce have to sell at less than what was expected. The repercussion is a domino effect in that the chainsaw operators pay is cut back. Buyers/sawmillers also issue delayed and bounced cheques, or part payment.

Country presentation: Belize

By Wilber Sabido

Belize is in the central America mainland. The main language is English with Spanish spoken widely. Ecosystems are diverse with over 65 terrestrial, mangrove and freshwater vegetation types and 14 marine types. Belize has the second largest living barrier reef in this hemisphere.

Regionally, Belize is part of the Maya Forest and shares historical, cultural and biological base with Mexico and Guatemala. The history and perspective of forest management in Belize is however unique in Central America. This divergence is based on past colonial policy which favoured the utilization of a small select range of timber species and the discouragement of extensive agriculture. The result is an extensive relatively diverse forests that include healthy populations of species that are threatened or extinct elsewhere in the region. Today there are external and internal pressures to convert forest land to other uses. Forests are being high degraded - stripped of all marketable species leaving behind less valuable species, leaving the argument of forest being cleared for other purposes, especially agriculture.

Belize Statistics

Land area	22,200 km ² land area 56, 230 km ² total area
Forest Cover	55% of land area (approx 12000 ha) Forests are classified according to their legal status: <ul style="list-style-type: none"> • Forests in Protected Areas • Forests on National Land • Forests on Private Land
Population	350,000
Forestry contribution to GDP	About 1% in 2008 from about 80% in the period 1922-1940

Forest law and policy

- Dates to 1920s
- Forest Policy to 1950s
- Forest Act
 - Forest Estate
 - Forest Reserves
 - Private Forests
 - National lands

The Forest Law and policy has been revised and presented the Belize Parliament for ratification.

The Forest Department, falls within the Ministry of Natural Resources and Environment and is responsible for several areas of focus, i.e. protected areas, forest reserve, wildlife and biodiversity, and as a consequence the focal point for a number of UN Conventions.

Logging in Belize

- To do logging in Belize you need a license/concession from the Government.
- There is a process of due diligence to be completed before the GOB can issue a license.
- This process checks the capacity of the applicant and the capacity of the forest to sustain the logging

Types of logging licenses

- Short-term (1-2 years) 'regular' – Minimum Cutting Diameter (MCD) only
- Long-term (20-40 years) 'sustained yield' – MCD, Ecology and Growth Dynamics
- Salvage Permits are issued for land clearing (clear cuts)
- Licenses award rights for timber to private entities (GOB does not log)

The principle behind the long term licenses and short term licenses are:

- Long-term logging licenses are designed to practice SFM
- Short-term logging licenses incorporate principles of Best Management Practices within the contractual agreement of the license.

Chainsaw use in Belize

Presently, there are provisions in the Forest Regulations, Subsidiary Laws of Belize, Revised Edition 2003 for the issuance of Chainsaw Permits:

Section 5: No person to whom a permit is granted in pursuance of Regulation 3 above shall convert any species of primary hardwoods, secondary hardwoods or softwoods into lumber by using chainsaws or any of its modifications.

Provided that the Chief Forest Officer may, in special cases, permit the use of chainsaws or any of its modifications in converting small quantities of the aforesaid trees into lumber.

Because this law is open for interpretation it has led to the widespread use of chainsaws for conversion of lumber as described below:

Chainsaw permits are not necessarily linked to a license. If a person wishes to cut lumber they may apply for a chainsaw permit from the Forestry Department and go out in the forest and harvest lumber.

Chainsaw use was mostly focused on tree cutting and for home construction. Chainsaw use spread after the onslaught of Hurricane Iris in 2001 which affected over 50,000 acres of forests in Southern Belize. As a consequence the Forest Department issued chainsaw permits to persons who were interested in salvaging this forest. However, the timber for salvage was exhausted and investment in the chainsaw remained with market demand for certain species very high, hence chainsaw use started to prevail throughout the country.

The Chainsaw use represents a substantial and sometimes unaccounted volume of timber extracted from forests. (There is a segment of operators that applies for permit whilst there is another segment that does not apply for permit and harvest illegally).

Chainsaw users are limited exclusively to areas of the country where large tracts of forest remain. In Belize, the Toledo District is associated with the largest tracts of forest and high poverty and indigent rates. At the same time, it is the District where the majority of logging activity occurs and where over 50% of the chainsaw permits are issued annually. The Toledo District is also home to the largest population of indigenous people in Belize.

The trend in permits show a peak with 1306 permits issued by the Forestry Department in 2007 that allowed up to any value of \$50 or 5 trees each being extracted. In 2007, immediately following an assessment the Government of Belize issued a moratorium on chainsaw lumbering with an exception for persons who would want to use the lumber only for private purposes. The moratorium was coupled with strict law enforcement and monitoring. The number of permits was therefore reduced to 126 in 2008 and 122 in 2009.

However, because high valued commercial species are sought after

- Illegal logging occurs all over the country in unprotected and protected areas wherever a chainsaw can go and where the authorities can't be at the time
- Mahogany, Cedar, Rosewood, Yemeri, Salmwood and other high demand species are targeted for construction in the local industry.
- Chainsaws are used without guides to cut timber into lumber for sale to lumber yards.
- Lumber is rough cut and uneven, thereby requiring additional dressing for sale.
- Chainsaw lumber irrespective of the species, fetches and is sold at low prices at the lumber yard.
- There is a low value attached to the timber, however it represents a quick source of income.

The way forward: Some actions in place already

- Provision to limit the logging season to eight (8) months in the year to allow pre-harvest and post-harvest assessments of the areas, to enable better monitoring and enforcement, and at the request of the MoA and farmers because logging impact on the same roads used by the farmers, especially in the rainy season.
- Moratorium on chainsaw use.
- Revising the Forest Regulations (awaiting ratification by parliament) to include provisions for:
 - Issuing chainsaw permits to community forestry initiatives
 - Allowing conversion for household/personal use
 - Allowing conversion when topography is a constraint (license required)
 - A stronger penalty-fine system
 - Provision for the registration of chainsaws, which was not there before.
- Promote and pilot community forestry activities especially in southern Belize where the majority of forests are concentrated and based on extensive forest inventory done with the support of donors:
 - Two communities have management plans for their communal forests endorsed by the Forestry Department.
 - Two more are being developed.
- Revision and re-drafting of a National Forest Policy (through the National Forest Programme Facility managed by the FAO).
- Establishment of a Compliance and Monitoring Unit to conduct M & E of forestry-related activities.

Many options can be explored: the pilot community initiatives test different technologies, for instance with guides/attachments to the chainsaw machine versus introducing portable sawmills. The urgency is to take concrete steps in demonstrating to the community people who depend on the forests that the Government is interested and committed in looking after their livelihood. The key message is that policies and laws are good, but there needs to be concerted efforts on the ground.

Country presentation: Suriname

by Dr. Rudi van Kanten in collaboration with SBB, CELOS and Tropenbos International Suriname

Suriname Statistics

Land area	16.4 mil ha (164,000 sq km)
Forest Cover	14.8 mil ha (85% of land area) Temporary maintained – 57% Protected forests – 13% Production forests – 30% (no concession issued below 4° N latitude)
Population	520,000 15% Javanese 4% Amerindian 12% Maroon who mainly live in the forest 85% pop. live on the coastland
Production	Avg. 160,000 m ³ of logs between 1999-2008 (of which part is chainsaw lumber)
Local lumber production (chainsaw)	9,322 (2007)
Forestry contribution to GDP	2%
GDP	US\$2,377 mil (2007)

Timber cutting licenses are allocated on commercial and community forests:

- 1.5 million ha is allocated to commercial concessions representing 85 licenses
- 0.5 million ha allocated to Community Forests for about ± 35 communities

There are four types of timber harvesting licenses, area and duration in Suriname:

License	area (ha)	duration	renewal [#]
Short term	< 5000	5 yr	5 yr
Middle long term	5001 < < 50000	5 yr	5 yr
Long term	50001 < < 150000	10 yr	10 yr
Community logging	On average 3000 - 4000	undetermined	Not relevant

[#] renewal is only for one period

Source: SBB 2008

Forest charges:

- Exploration fee, SRD 0.01/ha /year
- Area fee on concessions is between SRD 0.03 – 0.10 ha yr⁻¹ (US\$ 1.00 = SRD 2.80)
 - 25,000 ha @ SRD 0.05/ha = US\$ 450 yr⁻¹
- Retribution US\$ 5.50 – 6.00 per m³
- Grading fee SRD 0.10/m³ export timber
- Export fee 15 – 20% of the export value

Note: US\$1=SRD2.8 (2009)

With respect to the forestry and wood industry

- 70 sawmills mainly in the coastal area
- 1 Plywood factory
- Transport of timber logs to sawmills
 - 30-40% by River,
 - 70-60% by roads
- 200 loggers comprising of companies or (groups of) individual(s)

Policy and legislation with respect to chainsaw lumber production

The legislation is based on the Forest Management Act of 1992 (currently under revision). In addition, the framework includes:

- 2003 National Forest Policy.
- 2009 Strategic action plan
- Code of practice in process of development
 - in collaboration with FAO National Forest Program Facility & Tropenbos International Suriname
 - more on-field research data needed
- No direct articles refer to a prohibition of Chainsaw Lumbering (CSL)
- There are also no restrictions of chainsaw lumbering of privately owned trees.
- The Government still has to make policy on CSL
- There is no control over purchasing of chainsaws / mobile mills and no taxes or fees are applied or registration

The distribution, marketing and organization of chainsaw lumbering trade

Traditionally people in the hinterlands have always been using timber for their needs. In the 1990s (1992) CSL became an evident factor, during the process of reconstruction of Maroon villages damaged during the internal armed conflict (1986-1992). Soon Amerindian villages and outsiders followed the example. The lumber produced by CSL is used for people in forest dependent livelihoods; small scale gold mining sector; commercial timber for furniture wood and small timber markets (no statistics at hand).

The Forest Service SBB is not allowed to inspect container trucks which transport lumber (they are only allowed to inspect open trucks when it is transported) unless accompanied by the Police, hence it is a way of transporting illegally especially on national holidays.

The owners of traditional Sawmills claim unfair competition from CSL timber.

The main limitation in CSL is the uncertainty of operations: hit and run character of the CSL business and generally there is no long term and/or secure access to forest resources.

Changes in production methods over the years

- The Practice of CSL is used in:
 - Forest dependent communities
 - Shifting cultivation agriculture
 - Small scale gold mining
- No registration of chainsaws and mobile mills
 - Noticeable trend towards purchase of mobile mills
- CSL is mostly practiced by people who have working experience with lumber companies
- Method of free hand sawing adopted from the people from Guyana
- SBB maintains registration of sawn wood production
- Unregistered production is estimated at 20% of annual timber production volume
- Conversion rate for chainsaw lumbering is about 50% for timber for the furniture industry.

The SBB plans to make the sector visible, stop illegal logging, bring current producers under control and to upgrade the forest management and control under a new Forest and Nature Management Authority (BOSNAS). The time for this path for the establishment of this institution, however, is not clear.

Social, economic and environmental impact of chainsaw lumbering

- Definitely CSL is an important source of income for forest dependent livelihoods;
- It is a development opportunity with low initial capital investments;
- The Government is in process to transform Communal Cutting Licenses into Community Forestry licenses. As a result, the community members are expected to have better benefits and job security;
- CSL is not considered as a threat to the forest;
- At present people who practice CSL often do not have legal access to the forest
 - Village Captains handle license as their own
 - CSL people enter state forest land
- Illegal produced timber
- Roundwood crossing the western border to Guyana
- Competing with legal sawmills in the local market

The future of chainsaw lumbering

Despite the fact that statistics are not yet clear it is to be expected that CSL will increase in volume. However, if conducted well, within a Forest Management plan CSL can be a development opportunity for the interior also with benefits for other people involved, i.e. loggers from other areas; transporters; lumber markets & wood processing industries.

The ministry of Physical Planning, Land and Forest management plans to regulate the activity of CSL. JSOOC training institute is offering training in chainsaw operation & forest management planning and FAO national forest programme Facility launched in 2009, administrated by SBB, can also be of help.

Country presentation: Dominica

by Albert Gallion

Dominica is part of the Organisation of Eastern Caribbean States (OECS) countries, located between Guadeloupe and Martinique. 65% of the island is considered natural vegetation. The climate is humid and

tropical with high rainfall. It is 16 miles wide and 25 miles long and less than 5% of the land is considered flat and the remaining mountainous with very rugged terrain.

Dominica Statistics

Land area	750 square km
Forest	65.7% of land
Population	71,000 – 80,000
State Forests	9,224 ha declared forest reserves and 5,369 ha uncommitted under the jurisdiction of the Lands & Surveys Department. Of this figure 4,679 ha of declared forest reserves and 3410 ha of uncommitted lands are considered operable due to considerations for soil and slope, water catchment, land use and wildlife habitat.
Protected areas and National Parks	20.5% of total land area

Vegetation types include:

Vegetation Type	Area (ac)	% of Landmass
<i>Coastal Swamp</i>	74.13	0.1
<i>Littoral woodland</i>	345.94	0.2
<i>Dry scrub woodland</i>	15,419.04	7.9
<i>Deciduous/Semi-evergreen forest</i>	17,717.07	9.1
<i>Rain forest</i>	82,931.18	42.5
<i>Montane Rain Forest</i>	10,971.24	5.6
<i>Elfin woodland</i>	420.07	0.3
TOTAL	127,878.67	65.7

Most of the lumbering occurs in the rainforest and to a certain extent in the dry scrub woodland for charcoal and round wood production for the construction industry.

Emergence of chainsaw lumbering

Historically, the commercial exploitation of Dominica's forests has proven to be very challenging. These challenges ranged from the levels of initial capital investments, accessibility, available volumes, skilled personnel and a combination of local edaphic and climatic factors.

During the early days the Pit-saws was the only piece of equipment used for lumbering.

Following the devastation of Hurricane David (in 1979), the chainsaw was brought in to speed up the salvaging of fallen trees and to produce much needed lumber to satisfy housing requirements for the populace. These chainsaws were used either free-hand or with the newly acquired Alaskan Mills and as a result pit sawing virtually went out of existence. With the advent of the chainsaws the utilization of timber resources increased tremendously.

Chainsaw lumber industry

Chainsaw operators could be classified into two distinct groups: those individual operators who functioned on **either private lands** or, **purchased trees from State Lands** or, those who were associated with the Cottage Forest Industry Group (CFI).

Those associated with CFI would also operate off private lands or, if on state lands sought concession arrangements. From a Governmental management perspective, dealing with a single group is preferable than with a mass of individuals.

Single Chain Sawyers

Individual chains sawyers pose the greatest challenge as they are generally not environmentally friendly.

On private land:

Individual chain sawyers normally operate on an "order basis", ie, when a request is made by a client. If the client is a land owner then the arrangements is on a share basis. If the Chain Sawyer provides the petrol then the arrangement is 70% /30 % whereas if the land owner provides the petrol the reverse is applied. There are times when the Operator only requires money compensation; this is particularly applicable when the client purchases the tree(s) from State Lands. A Skilled Chainsaw (free-hand) Operator rate is between \$EC150-180/day.

On state land:

Trees can also be purchased from either Uncommitted State Lands or Forest Reserve; sale being effected by the Forester I or Forester II for the particular Forest Range. Not more than five (5) trees are sold at a time.

The process for selling trees on State Lands is as prescribed by the ***Royalty Rates for Timber and Minor Forest Produce***, a 1987 publication of the Forestry, Wildlife & Parks Division. These royalty rates are in need of revision.

One of the **issues** of concern for the Forestry Division with Individual Chainsaw Operators is the **wastage of the timber resource** due to the fact that after satisfying the particular order from a client, the balance of the logs remain in the forest; these operators do not have reliable and adequate storage space for the sawn lumber which may be one reason why utilizable logs are left behind.

Government may introduce chainsaw licensing if a real need for this is identified, however, this extension of the bureaucracy would require strong justifications to be acceptable. It does not appear to be necessary at this time but should be nevertheless be reviewed at regular intervals at it may become necessary to protect a diminishing forest resource base.

Why the Cottage Forest Industries Group failed?

While this is was a desirable option for the Forestry Division, it suffered from practical difficulties. Government policies were supportive of this group but eventual success depended on their own management structure and dynamics.

The absence of a trained forester and the type of demands that were expected of the individual members whose primary objective was to provide income to themselves posed serious challenges to the operations of that cooperative.

The intent of the group was basically to provide a combined marketing ability resulting in continuity of supply and price to benefit both operators and consumer. With this combined output, the potential for value added operations such as drying, dressing and processing was to be exploited.

Added to these were was a conservation philosophy directed towards a broad area that included sustainable yield harvest based on Timber Stand Improvement (TSI) operations, contributions towards a reforestation fund, production of nursery stock, encouragement of tree planting schemes, school talks and other public education activities.

The group purchased sawn lumber from individual members at a fixed price utilizing a US\$20,000 roll over fund provided by Weyerhaeuser. This would guarantee a stock holding of the order of 18000 BF or around 40 m³; payment was made immediately upon delivery with the deduction of four cents/ BF for the reforestation fund. Obvious defects were not paid for and measurements were based on apparent utilizable dimensions. These measurements were not precise and did not really reflect sawing quality-it did not provide any premium for accurate sawing.

Forestry Division supported a case to grant (a) concession forest on state lands for logging purposes in the interior of the island and (b) another area for the operations of an Air Drying lumber yard facility. The Division even attended the general meetings of the group in order to provide additional technical

assistance; three of the group's members were trained as para-foresters by the Division. Assistance was also given in the form of carrying out timber inventory and marking of marketable species in the concession forest of Bwa Diabie.

As previously stated, these challenges with inherent issues that developed, negatively impacted on the daily operations of that group which eventually resulted with members gradually dropping out and the cooperative folding up.

Why Mechanized Logging (extracting by skyline) also failed

Given that road access is one of the primary challenges for high end logging and one kilometer of road costs approximately US\$140,000 (EC\$ 378,000), an initial expenditure the mechanized (skyline) extracting enterprise was expected to bear fruit even before harvesting began.

However, the scattered volumes over rugged terrain, the skidding operations to haul out the logs from the forests, sensitiveness of hauling on slopes that converge into water catchments and wildlife habitat all impacted on the effective harvesting operations of mechanized logging coupled with the extremely dangerous method causing at least 2 deaths, this operation also eventually folded up.

Socio-economic Impacts of Chainsaw Logging

The practice of forestry primarily impacts on the rural communities to which the contributions of the logging sector demonstrate this vividly.

The Woodwork industry which comprises of the Furniture, Construction, Funeral Homes Charcoal makers and Boat-building depends on the activities of the chain sawyers.

As the number of chain sawyers started to dwindle the furniture makers were affected. This reduction in the availability of lumber along with the introduction of importation of furniture through COURTS company, the demise of the furniture makers.

There have been second and third generations of families whose livelihoods were integrally engaged in logging.

In 1984, Dominica imported 1351m³ Sawn Lumber. The following year, that figure shot up to 1928m³, but fell to 1475m³ in 1986. In 1989 the statistics recorded 6124 m³. For the same period in 1989, the local production of sawn lumber reached 3248m³ but dropped down to 1073m³. A cursory examination of the data revealed that the drop in imports coincided with the peak production period of locally produced during the period 1981 to 1986.

Therefore, the impact on scarce foreign exchange could be appreciated.

Current Status

However due to the national priority on the Tourism sector and to a lesser extent the misguided perceptions of "political environmentalists", the logging sector is not given the type of attention it deserves.

At one time there were approximately 144 Chain Sawyers fully engaged in that sector unfortunately, the numbers have dwindled by about two-third. Some of these operators have sought gainful employment in the tourism sector.

The Division's small Forest Utilization unit, which comprises of only two Highly-skilled Chainsaw Operators and two Assistants cannot produce sufficient lumber for the furniture makers; these lumber are produced from existing forest plantations.

The Division utilizes the Alaskan Mill for its operations. This rig attachment placed onto an appropriate size chainsaw significantly enhances the efficiency and quality of the final sawn lumber product. The Division has been promoting the use of this attachment to other Chain sawyers.

Almost on a daily basis the Forestry Division receives many inquiries on the availability of locally sawn lumber.

This means that demand for lumber for heavy construction and furniture cannot be met even from the few chainsaw operators who are still operating.

The number of medium to large scale Wood Workshops has also been reduced drastically to the extent that most workshops are manned by one or two individuals.

The demand for local lumber and local furniture is still evident.

One peculiar indicator is evident when some these consumers are willing to purchase the sawn lumber green indicating they will take care of the seasoning of the product themselves.

Support for the current chain sawyers by the Forest Department

The Forest Department is also supporting the chain sawyers to address issues of occupational health and safety addressed through public education and by providing training in the proper use and maintenance of chainsaws.

Country presentation: Trinidad and Tobago

by Barry Mahabir

Trinidad and Tobago Statistics

Land area	512,800 ha (5128 sq km)
Forest Cover	248,000 ha (48% of land area)
Population	
State Forests	192,000 ha (74.4% of forest cover)
Private forests	56,000 ha (22.6% of forest cover)
Plantation forests*	15,500 ha

Notes:

* Most important plantation species being Teak and Caribbean Pine

Chainsaw milling/board milling is considered **illegal** in Trinidad and Tobago.

Forest Policy of 1942, revised 1981 and 1999 for approval

To sustainably manage our forest resources for optimum output of their productive, protective, recreational, aesthetic, scientific and educational values, for the benefit of the public.

Utilization and Forest Industries

- Roundwood is produced from the natural forest and the plantations (Teak and Pine) for the sawmilling industry. This raw material supports the sixty-five (65) registered sawmills in Trinidad.
- The demand for local wood in the construction industry has been affected by the importation of foreign lumber, especially Pine. The state of the economic climate has also taken its toll.
- Exploitation from local forest resources continues to be hampered by high labour costs and poor access.

Harvesting and Sales

Harvesting from natural forests

- Divisional control is exercised in the exploitation of timber resources from the natural forest.

Licenses issued/required are:

1. Sawmillers license

2. Licenses for Small operators and board millers
 3. License of large companies
- An estimated fifty percent (50%) of the forest produce was harvested by mechanical skidders and crawler – type tractors, forty percent (40%) by peg– wheeled and/or low flotation rubber – wheeled farm tractors and ten percent (10%) by animals.

Harvesting on private lands

- Timber harvested on Private Lands are subjected to a Private Removal Permit which is a procedure conducted by the Forestry Division (Species listed in the 2nd schedule).
- All logs, if permit granted, must be hauled to its desired registered sawmill and cut.

Sales

There are three (3) major systems of the sale of forest produce:

- Sales to registered licensees
- Sales by concession to Oil and Utility Companies

Sawmill constraints

The major problems encountered by the Sawmillers have been

- The depressed market conditions for local lumber
- The apparent lack of skilled employees
- High energy cost /predial larceny

Portable sawmills/chainsaw mills

- Portable sawmills or boardmills are equipment used to convert logs into boards at any location desired.
- The device comprises of a chainsaw and as specially designed rack used to obtain the various dimensions of the boards.
- The use of portable mills are prohibited on both state and private lands since it would be considered contrary to Chap. 66:02 of the Sawmill Act which states:
- **“Sawmill” includes every sawmill compound and every breakdown saw or mill designed and used to break down and convert logs into boards, planks or scantlings or to re-saw the boards, planks or scantlings into boards , planks or scantlings of small dimensions.**
- The actual use of boardmills are then considered Operating a Sawmill without a licence.
- Such licenses cannot be obtained since there is no policy or legislation governing the use of portable sawmill.
- Hence the conflicts exist since the mills are sold openly and imported on the market.
- Seminars held with the Officers of the North East Conservancy highlighting the issues surrounding the boardmills.
- Common concerns by the officers indicated that the boardmills were responsible for several offences both on Private and State lands which were taken to court.
- Several boardmills and boards have seized and stored at the Melajo Compound. The North East, Conservancy have pending court matters from both Private and State Lands over the past years.
- Forest Officers pursued individuals in court for the offence of operating a sawmill without a licence on both private and state lands and found the offenders guilty.
- Demonstration of the portable mill was also given to show officers the capability of the sawmill.
- Officers indicated that if properly legalized the portable mill can be beneficial to both the public and Forestry Division.
- The board mill show low environmental impact when harvesting.
- It can facilitate woodworkers that cannot afford equipment and the cost to cut logs at sawmills.

Recommendations for controlling illegal chainsaw lumbering

- Individuals willing to purchase a boardmill must acquire a pro-forma invoice from the distributor indicating the specifications and serial number of the mill.
- This invoice will be taken to the Forestry Division where a License will be issued based on the directive and conditions of the Conservator of Forests.

- The license will then be used as a criteria to purchase the mill at the distributor mentioned.

Conclusion

- With the current review of the existing forestry policy (2009) sawmilling activities will be address taking into consideration the board/chainsaw millers.
- The division has revised its strategic plan will address more efficient administration and staffing constraints.
- Legislative amendments are required to harmonize conflicts between forest acts and the trade acts.
- Staff training at all levels is required.
- A Community Forestry Unit has been sanctioned for community outreach and public education.
- Regional cooperation and networking is essential to the success of the industry.

Questions & Answer /Comments:

1. Noting the theme of the project “Developing alternatives for illegal chainsaw lumbering”: Is chainsaw lumbering a sustainable livelihood activity? In the context of sustainable livelihoods we consider different type of assets, i.e. ecological assets and whether the activity is maintaining the ecological integrity of natural systems.
2. Can CSM become a sustainable livelihood activity? Need for synergies between rural development programmes, poverty reduction programmes, and what is happening at the community level.
3. How can it become a sustainable livelihood activity? In doing this there is need to do a SWOT analysis, and how can we look at institutions (organization, legislation and policies) who are the culprits that enable or constrain persons from achieving sustainable livelihoods.

Answers to question 1-3:

Guyana: The social programme at the GFC is geared towards enabling the people to make decisions regarding chainsaw issues.

The chainsaw milling project can make recommendations to feed into the national framework on the livelihood question.

Suriname: One should look at the forest resources in relation to the country, for example, in the case of Suriname where there is abundant forest resource, the question is what is the legislative system and if you have the mechanism to comply with this and you fit in chainsaw lumbering in a forest management plan, it can be a way of sustainably development of the livelihood.

4. One crucial factor is the vertical integration and adding value to chainsaw lumber. This project can contribute greatly to vertical integration of the commodity chain through its work at the community level.
5. Annai District has recognized the need for sustainably managing their communal forest and has decided to allocate production forest, making rules to harvest and forming a company Makushi Yemekun Forest Management Inc. to manage the production forests. Vertical integration and the use of waste wood which was previously left in the forest were also addressed though the use of the end pieces to make craft and other products. Illegal lumbering was also taken into check by monitoring limiting the issuance of permits to harvest lumber.

Country report St. Lucia

by Alfred Prospere

St. Lucia Statistics

Land area	238 sq miles (616.41 sq km)
Forest Cover	31,000 ha ?
Population	160,000
Natural Forests	15,500 ha
Private forests	5,500 ha

Plantation forests*	500 ha (mahogany and blue maho)
Forest Reserve	9,500 ha (13% of the island)
Timber production 2002	Approx. 300 cu. ft

In St. Lucia, there are presently **1,000 chainsaws** registered with the Forestry Department (FD). Of the 1,000 chainsaws only about 60 are involved in timber production. Most of the other chainsaws are used by farmers for pruning of cocoa. There is one company importing chainsaws in St. Lucia, which has to obtain permission from the Forestry Department to import chainsaws into the island.

Local timber production was very high prior to the mid-1990s, because there was a banana (which remain their main export) boom in St. Lucia causing the private land owners to clear forests to plant banana. At that time there were two government sawmills in operation, the FD was responsible for supplying those sawmills with specific dimension of trees (60cm and up). There was also a very vibrant furniture industry and an increase in production of bananas due to the high price they were receiving. Also at that time because of the existence of the sawmills, there was also easy access to forest resources by the citizens, as the FD invited chainsaw and non-chainsaw owners to purchase trees from the forests.

During mid-1990s, however, local timber production in St. Lucia declined due to:

- Economic decline in St. Lucia as result of a decline in demand for bananas;
- High cost of processing chainsaw lumber by furniture makers;
- Increased importation of wood by COURTS because furniture makers were very slow at delivering furniture to the company; and
- High extraction costs of timber because the island is very mountainous.

Impacts of chainsaw lumbering:

Positive:

- FD: Revenue generated from sale of trees, removal permits and licenses
- High profit margin for chainsaw owners: there is no price structure, the price is based on the the quality of lumber
- Employment for labourers, operators and truckers

Negative:

- Damage to trees during felling and conversion
- Indiscriminate litter disposal (oil, plastic, etc)
- Clogging of streams and rivers with trees fell into waterways

Regulatory framework

- Forest, Soil and Water Conservation Act of 1946
- Chainsaw regulations specify who should have a chainsaw (only persons who have forested lands are permitted to have a chainsaw, and chainsaw must be registered every year.)
- Wood cutting license in Forest Reserve
- Removal permit required to transport timber
- Permits to purchase chainsaw and parts

Methods of production

- Traditional method: Pit sawing
- Chainsaw machine introduced in the late 1960s

Issues and challenges

- Poor record keeping (removal permits)
- High wastage
- Late renewal of license
- Poor quality lumber
- Lack of proper monitoring of removals

- High importation of lumber (furniture sector)
- Lack of proper drying facilities
- Lack of safety equipment

The way forward

Because most of the wood is from the forest reserve, the FD need to

- restructure and revitalize the timber industry, to have more benefit from chainsaw lumbering.
- Implement new methods of production.
- Provide easier access to timber resources.
- Introduce new extraction methods

Country presentation: St. Vincent and the Grenadines

by Anthony Simon

Located in the Eastern Caribbean, St. Vincent and the Grenadines is a multiple island nation consisting of 32 islands and Cays. The total land area is approximately 389 square kilometers or 38.694 hectares with St. Vincent being the largest and main island with a size of 344 square kilometers or 34.462 hectares. Average annual rainfall ranges from 1200mm on the dry coast to 7000 mm in the wet central mountains. In contrast, the Grenadines may experience as little as 460mm rainfall per annum (Simmons and Associates Inc., 2000).

Land area	389 sq km (38,900 ha)
Forest Cover	12,700 ha tropical forests
Population	110,000
Deforestation rate	3% annually (estimated) as a result of clearing for illegal ganja cultivation

Forestry and wood industry

Most of the natural forest of the country is on steep, rugged terrain, the forest has high water production and soil conservation values which may outweigh any hypothetical benefits of its exploitation for timber.

St Vincent also has a system of forest plantations which started to be established on public lands in the 1950's. In the later part of the 1980's up to early 90's there was a greater shift towards plantation forest with one of the aim being to increase wood production under the CEDIA project.

Logging and log processing operations was carried out in the Natural forest, for the most part regarded as very primitive and basic using pit saws, which as timely and labour intensive.

Under the forest conservation Act of 1992, the Forestry Division exercises control of all forest utilization activities in natural forest.

At present all of the conversion is done in forest plantations using Alaskan mill and mobile band saw. In all cases conversion is done on site.

Policy

To manage the crown estate by:

- The regulation of activities of persons and corporation who cut, harvest, transport, mill, and sell timber and other produce on crown lands.
- The issuance of licenses and permits for the harvesting of timber and other forest produce.

Legislation

- The Forest Resources Conservation Act, No 47 of 1992, provides the legislative authority to issue licenses and permits for control of chainsaws and milling equipment, according to section 39b part VIII of the Forest Resource Conservation Act;
- The minister may in writing authorize the Director of Forestry to issue licenses and permits for the control of chainsaws and milling equipment.

The licensing system is the same as St. Lucia and there is registration of between 100-200 chainsaws annually.

Impacts (economic and environmental)

- Chainsaw lumber operation provides valuable income to a small percentage of the rural poor communities (For a five person team there is the potential to earn \$20,000 to \$300,000 annually. The sale of trees generates a small percentage of government revenue on an annual basis.
- Lumber production in St. Vincent and the Grenadines results in significant erosion (due mainly to over story removal), sedimentation of streams and it also negatively affects aesthetics in areas which also have an ecotourism component.

The main problem with chainsaw is related to persons using the chainsaw equipment to clearing of forests/land for illegal ganja production.

The future of chainsaw lumber

As we go forward, there are needs for:

- A wood utilization research in order to assess its cost-effectiveness from a national standpoint.
- The need for training in business development and marketing.
- Also the need for the promotion and adoption of sound utilization methods including appropriate old and new products, equipment, materials, procedures (reduce impact logging) and species.
- Improve the management of forest plantation (thinning methods) with the aim of increasing the level of production.

Case study on Bolivia

by Dr. Charlotte Benneker

The effects of the 1996 Forest Law on illegal logging practices and chain saw milling in Bolivia

Objective: To show how a process of policy change aimed to address illegal logging actually enhanced illegal logging practices in Bolivia

The conclusion is that the Policy that Bolivia implemented did not consider existing practices.

Bolivia is a landlocked country in Latin America. It has 53 million hectares of forests which are found mostly in the low lands and its population is 9 million but still the lowland is not very populated although there is increasing migration to that area.

Timber extraction before 1996

Before 1996 the only actors that could legally extract timber were the timber enterprises which were allocated timber extraction rights of over 20 million hectares of forest in the lowlands. These timber extraction rights overlapped with communities and indigenous territories resulting in the farmers and indigenous peoples not having any legal right for sell timber or any other forest product, except for subsistence purposes.

Characteristics of the timber market before 1996

- Rural population, however, were strongly involved in timber extraction:
 - Negotiation of benefits with timber enterprises
 - Independent (illegal) timber extraction
 - Working for enterprises

- Timber sale from communal or agricultural land
- Very dynamic (illegal) market:
 - Lots of people involved Different types of enterprises
 - People of all kind of profession and economic background
 - Involve entire forest sector (also state and concessionaires)
- The timber (chainsaw lumber) market produced not for local production only also for export

Changes in land and forestry laws

Agrarian reform 1996:

- Regularization of land right: all indigenous communities, farmer communities, farmers and private land owners went through a process of regularizing their titles, so now there is much more land legally in the hands of indigenous people and farmer communities..
- The implementation of this law, however is not easy.

Forest law 1996:

- **Exclusive** commercial forest user rights to **all** landowners
- However, a forest Management plan required, if they wanted to extract timber for commercial purposes.
- Non commercial use = free
- Choice to implement FM = free choice; they can also use the land for agriculture and other purpose.

The objective forest law of 1996 was to democratize the access to benefits from forest resources and not only those enterprises but also people that owned the land, and to sustainably manage the forests.

There were many new actors created by this law:

- Social local groups (ASL) - public land, municipal: This allowed 20 more persons who were previously involved in illegal logging to organize and ask the municipalities for forest concessions.
- Indigenous people - collectively log private land legally
- Farmers - collective and individual private land
- (Big) private landowners can also engage in selling timber

Concessionaires (public state land): ended up being the big losers with less 4 million ha.

The Social Local Associations (ASL)

By the end of 2006 ASLs were managing 650,000 ha of forests and there were 24 of them registered.

This partly success and also partly failure because about 80 of these groups initially registered to be able to do so but because of bureaucratic problems getting the rights according to the laws.

The ones that have been able to go through the process assisted by NGOs have been able to set up successful forest enterprises to varying degrees.

Indigenous people (devolution)

Indigenous people is almost the same story as the ASLs

- They have access (claimed) over 30 million ha of land, mostly forest in the lowlands.
- Potential area for timber production 9 million ha.
- Up to now together they manage about 1 mil ha.
- Commercial logging with Forest Management Plan
- Collective land rights -> collective user rights
- > 70 indigenous CFEs have forest management plan > 200 ha.
- Only those that have been assisted by NGOs were able to establish successful forest enterprises
- There is another 8 million ha of forest that could be managed sustainably

Farmer communities (devolution)

- The law did not have any interest in farmer communities. Farmers were supposed to have individual land rights and not communal land rights. By 2006 there were about 30 farmer groups engaged in forest management of land area of about +/- 500.000 ha.
- There are many more farmer communities but they are not involved in forest management because they have not been assisted or informed.
- Commercial logging requires Forest Management Plan.
- No specific regulations for farmers

In total, the number of communities managing forests has increased, and is still increasing, reaching 100 in 2006. However, after 2006, no information has been given out by the government, so it is difficult to say exactly what the numbers are.

Major drawback = costly regulation

The communities and the social local associations were only able to draw up a management plan with assistance from NGOS mainly because drawing up a management plan is very costly (about US\$1 per ha). On average indigenous communities have between 20,000 ha – 90,000 ha and these communities do not have that kind of money (US\$20,000-US\$90,000) except with assistance from NGOs.

Harvesting regulations: people can not use chainsaws at all, instead they are asked to use capital intensive heavy machines (skidders, make roads, etc) which is very expensive and moreover there are no machines available to hire or buy in Bolivia. So it is very difficult to comply with the regulations and these types of harvesting.

Because of all these regulations there were also many people that were left out in this new forest law and they do search for alternatives. The people left out were these enterprises that use to work in the different region but also carpenters that use to buy illegal timber. In the beginning people were angry because the government did not give them alternatives. However, in the end they discovered that they could negotiate with land owners instead of the Forest Service, and this is how they re-establish the previous very dynamic market in another way, using small scale logging permissions which the government is also giving out.

The small scale logging concessions are cheaper to obtain because management plans are not required and they could be obtained easily. There is no control of the small scale concessions by the Forestry Service because of the difficulty to control so many small individual logging practices.

In the end, there are two types for forest user rights in Bolivia: 1. the **concessions**; and 2. the **land owners**.

The **concessions** can be either by the central state which are the private enterprises, or they can be given out by the municipalities which comprise the social local groups. These are all large scale forest concessions that require management plans and it is assumed that they are sustainable.

The **land owners** have two options:

- a. collective with farmer communities or indigenous communities which have management plans and are considered to be a sustainable way of forest management; or
- b. individual rights which is small scale logging which the government has given several options to do so, i.e. 3 ha logging plans, or 200 ha forest management plans, or permission for forest conversion into agricultural land, or for domestic use. These small scale logging options have been captured by the dynamic market to extract timber from private lands, and this what is used mostly in Bolivia to log timber as show in the figures for small scale management plans exceeding the large scale management plans

Where does illegal logging enter?

Small scale is not necessarily illegal, but they do give a lot of options to arrange things, so what happens is people extract more timber than they are allowed to extract, they use bigger areas than they are allowed to extract from, and the species they extract are different from they are allowed to do, resulting in

a lot of illegality within these legal permissions for small scale logging. They do this by overestimating the volume of timber available within the area to obtain more transportation certificates from the FS

Chainsaw milling is illegal but that does not mean that lumber that comes from chainsaw milling is not legalized on the way by being reprocessed in the other sawmills and then it is even being exported (sometimes as certified timber e.g, mahogany).

So what is legal, legalized/semi-legal or illegal is very difficult to know. Studies on Bolivia now show that almost every actor in the forest sector is involved in illegal logging.

An estimation of legal, semi-legal and illegal activities show:

Those engaged in legal activities (100-70% legal)

Origin:

- Private forest concessions
- Community & indigenous lands

Actors:

- (Certified) private enterprises
- Community Forest Enterprises
- Industrial processing plants
- Exporting enterprises

Legal instruments:

>200 ha FMP

Those engaged in semi-legal activities (70-30% legalized)

Origin: all forests

Actors:

- Private timber enterprises / ASL
- Indiv. farmers & communities
- Forest consultants / Service providers
- Timber traders / Processing plants
- Carpentries
- Exporting enterprises

Legal instruments:

- <200 ha FMP / > 200 ha FMP
- 3 ha logging plans
- Domestic forest use

Forest conversion permits

Those engaged in illegal activities (70-100% illegal)

Origin:

- National parks
- Inaccessible forest
- Border forests

Actors:

- **Chainsaw milling**
- Small processing plants
- Carpentries (rural & urban)

Legal instruments:

- Domestic forest use

Even though by law chainsaw milling is illegal, there is the problem of being able to access other equipment to process lumber, so persons are forced to do so because there is not other equipment they can buy.

However, at this time there is no official information on chainsaw milling (or any forest activity) in Bolivia, but it is much bigger and growing bigger every year.

What is interesting to see is that when you discuss illegal logging, most of the times it is all policy measures that should be taken that are being oriented toward the people who own or manage the resources. In Bolivia, it is the market pressure to sell is very high and there is a very big competition between the all kinds of traders and intermediaries that push people to sell the trees on the land. So it is not local community members but the market that enhance illegal logging. This market actually provides very nice service packages, i.e. they offer the farmers to arrange all their permission and everything where to stay, to fell and extract the trees, they pay for the trees, and they give individual benefits to the farmers. The only thing the farmers have to do is to give his signature that they can extract the timber and timber traders arrange everything else, so it is a very easy way of earning money. But normally the farmers or indigenous peoples are not by themselves involved in the activity (usually but not always).

Discussion

This new regulation in Bolivia is totally directed towards proving timber for the industry and not for the local timber market and not including those people that have been working in the local timber market and it is very capital intensive. Apparently this was the only way that people thought that forest could be managed sustainably and they have not given any room for alternatives logging and management methods. They've also forgotten to consider that there is very hardly anybody in the forest sector that has the capacity to invest in this kind of capital intensive systems, or the government did not give any credit either.

In the end, the farmers do profit from selling their trees but they can not refuse because somebody will log it anyway. If the farmers want to conserve their forest then they have to protect it actively and even then it is impossible prevent logging from taking place.

Conclusion

The new forest law generated a much bigger room for an expanding local market for timber, for example in some region where there used to be 4 sawmills there are now 30 sawmills, and everyone is engaged in timber logging at the moment. It also included many new people as well, not only those traditionally involved. It is not always bad for the forests but there are some areas where forests are being degraded. There is the question whether it can be regularized at the moment? Enforcement is impossible at the moment as the government does not have the capacity in standing up against all these economic interest of people involved in the forest sector and also it is very difficult as well as they are sometimes carrying firearms. As such, enforcement will not work, but you can include these people in new systems, by multi-stakeholder consultations and rural people can be involved in making the system more sustainable. The only way out is finding consensus between actors in regions

Questions/comments

1. Are we geared towards the direction of sustainability (ecological and economic)? We need to set up proper training programmes geared towards sustainability and training chainsaw operators in sustainable forest management. For people to say that they turn to the forest because there are no other livelihood options is not an excuse.
2. There are communities such as Ituni where 85% of the population depend on the forest for a livelihood and have very few livelihood options.
3. Lots of chainsaw millers have benefited from training in sustainable forest management from the Forestry Training Centre Inc, and from other programmes funded by GFC, and other funded projects.
4. It is the opinion that chainsaw logging is more eco-friendly, as the remains are left in the forest as natural fertilizers.
5. It must be recognized that chainsaw lumbering is a way of helping poor people to survive.
6. In relation to the Government of Guyana LCDS, there should be a programme for replanting of trees.

End of Day 1.

A cocktail reception was hosted by the Project in the evening of Day 1, at the Georgetown Club to allow participants to network and share discuss further issues pertaining to chainsaw milling.

3.3 Group Work

Day 2 focused on group work and presentations by four groups of the following prepared guiding questions:

1. Policies on Chainsaw Milling

1. What policies and administrative measures are in place to manage chainsaw milling operations
 - What considerations might have informed these policies
 - How are forest resources allocated to or designated for chainsaw milling operations
 - How is access to resources managed
 - What are the key challenges with managing chainsaw milling operations
2. What measures are in place to manage other stakeholders' concerns about chainsaw milling
3. How do policy makers see chainsaw milling in the future? Should it be eliminated eventually? Should it be encouraged? Is it firmly aligned with other development goals? Are there enough resources available for all stakeholders?

2. Monitoring of Chainsaw Milling

4. What monitoring mechanisms have been implemented under a legal regime to contain the mobility problems associated with chainsaw milling?
5. What problems are associated with compliance (how are they enforced)
6. What measures are in place to limit chainsaw millers to a specific area or scope of operation?
7. Are there any special incentives for operators engaged in chainsaw milling? Who grants such incentives?

3. Benefits & social issues around Chainsaw Milling

8. What is the relative importance of CSM for rural people's livelihoods?
9. Do chainsaw millers depend exclusively on the timber sector or is chainsaw milling simply one of several economic activities on which chainsaw millers depend?
10. Do operatives engaged in chainsaw milling garner more than 50% of income derived from chainsaw milling? If not, why not?
11. What technologies have been used to improve the processing efficiency of chainsaw milling?
12. What constraints exist for the adoption of improved technologies?
13. Can you cite a success story or a positive outcome from chainsaw milling operations? What led to the success story?

4. Managing Conflicts based on or arising from Chainsaw Milling practices

14. What major conflicts exist with CSM (which stakeholders complain the most? Over what?).
15. What mechanisms exist to ensure that the grievances of chainsaw millers get the attention of policy makers?
16. What conflict management mechanism exists to handle chainsaw related conflicts, especially with local communities, officials and large scale commercial loggers?
 - What are the common complaints?
 - Who complains to whom
 - Who eventually intervenes to resolve issues?
17. Is there evidence that chainsaw millers are responsive to interventions by policy-makers?
18. Is there evidence that chainsaw millers are responsive to national guidelines? Training? New Technologies?

3.3.1 Presentation: Group Kabukalli

What policies and administrative measures are in place to manage chainsaw milling operations?

Before persons get into chainsaw milling they must:

- Comply with Forestry Laws & Code of Practice
- Obtain a State Forest Permission which is usually a two years concession.
- Obtain a Saw Pit Licence where all the saws must be registered for that concession

In Guyana, it is recommend that:

- 70% of a log must be cut 2 inches and above & 30% cut at 1 inch
- Before approval is given for conversion to 1 inch board contractual agreements between parties must be submitted to Forestry for review and approval

In Suriname:

- Chainsaw milling is legal on village lands, but if timber used for commercial purpose taxes must be paid for that lumber
- The size of the tree must be a minimum of 35cm dbh

In the Caribbean:

- Chainsaw milling is done completely in plantation forest because the natural forest is reserved for watershed and soil conservation
- Timber is classified into classes based on the commercial value and each class has minimum felling dbh (on state land)
- Persons must apply for wood cutting licence
- When logs converted the produce cannot be removed until inspected by a forest officer

What considerations might have informed these policies?

- Livelihood for rural communities
- Sustainability of CM Practice
- Excessive wastage from cutting system

How are forest resources allocated to or designated for chainsaw milling operations?

In order to access forest resources in Guyana you must have a State Forest Permission (SFP) based on criteria set out by the Guyana Forestry Commission.

For the Caribbean Islands access is based on the silvicultural schedule in the plantation where they would select trees that should be cut.

In Suriname there are Community license (indefinite) & Individual licence which can be for a duration of 5 or 20 years.

What are the key challenges with managing chainsaw milling operations?

- Marketing
- Quality control
- Human resources
- Lack of good technology
- Lack of training and education
- Transportation of product
- Depletion of commercial species in certain areas
- Tenure issues: period of SFPs too short to ensure sustainability

The future of chainsaw milling

CSM will replace sawmills in the area of primary processing of logs. However, this depends on sustainability (Community forest management plans and improved technologies), and its compatibility with the LCDS, on the condition that it is practiced sustainably

Stakeholders' concerns about chainsaw milling

Guyana: large scale and small scale loggers operate on different areas

St. Vincent: formal consultations with other interests, like tourism department and water bodies

Monitoring of chainsaw milling

Guyana: two levels of monitoring:

- Registration of chainsaws
- Log tracking system (tags) to correspond the tree to the lumber

Guyana: SFPs are liable to monitor their own operation

Caribbean Islands: monitoring is easier, because of the smaller scale of operations (mainly plantations: timeline given for operations, chainsaw immediately heard)

Suriname: logs may only be transported after inspection and certifications by FC

Compliance

Guyana

- Suspicious lumber is detained and GFC verifies origin
- fines and seizure of operation

Constraints:

- Inadequate human capacity
- Limited resources

Importance of chainsaw milling

- Main source of income (livelihood activity) for rural communities
- Community development
- 22% Revenue (Moruca area) -> village captains.
 - Part of revenue is used to maintain roads **and clear blocked creeks**

Technologies

- Guidebars (logosol, Alaska frame, etc) to improve efficiency and quality of lumber produced
- Constraints:
 - Finance for production and maintenance;
 - refusal of chainsaw operators to do training in CSM

Success story

There is a high potential to become a success story, i.e. Kwebana Forest Producers Association received a support in developing a Sustainable Community Forest Management Plan which will look at harvesting over the years to come and they will be employing the low impact harvesting system.

Some of the **Conflicts** are:

- Marketing and pricing: need for agreement
- Quality of produce differentiation depending on the technology being used
- Large scale loggers vs. small scale loggers

Mediation

- Not officially organised
- Within SLAs conflicts need to be addressed to make them stronger on the market

Responsiveness to guidelines

- Community management plans help to harvest timber sustainably
- New technologies are being applied by CSM would increase and allow for greater processing efficiency.

Other issues

- St Vincent: better emphasis on improved quality/standards of produce
- Suriname: regulation and rules for CSM to maximise sustainability
- Dominica: refining of products to improve market standards
- Guyana:
 - review of freehand sawing
 - Compulsory training for CS operators
 - Emphasis on quality control to have a standard accepted by the market
 - Addition for CSM operations in Code of Practice
 - Health & Safety is important to reduce injuries from chainsaw milling
 - etc.

Questions/Comments

1. Chainsaw lumbering is allowed in other areas such as Amerindian reservation, agricultural lands etc, in Guyana and not only in State Forest Permissions.
2. How do you see the future for other Small Island States?
 - Chainsaw lumbering in Small Island States is not on a large scale but is dealt with as the need arises, so there were no projections for these island states.

3.3.2 Presentation: Group Kakaralli

Monitoring

- Monitoring is done through licensing/ registration for permission to use chainsaws, saw pits, mobile mills - in assigned/restricted areas
- Issues with compliance include lack of information/training about the laws governing chainsaw licensing/ use between mill owners and chainsaw millers
- Measures in place to limit millers include allotted saw pit areas, licensing limitations, permitting and monitoring by forest rangers, stump and tagging systems and checkpoints and written contracts overseen by GFC

Challenges

- Limited human, financial and technological resources for compliance e.g. Guyana and Suriname have an issue of a lack of rangers per hectare of forest
- Misunderstanding of national guidelines

Benefits of chainsaw milling

- Income generation
- Subsistence farming from clearing of area
- Charcoal production in Suriname
- Affordability of chainsaws make them accessible to the lower income groups (from COURTS or other hire purchase business)
- It is important because there is a lack of other employment opportunities in some communities
- The percentage of revenue can range from 10-35%, in the case of Suriname less, this is dependent on costs of transportation, extraction, fuel and rations
- Improved technologies include the board mills/ frames

Constraints

- Constraints include the high production cost, slower production, lack of training and adaptation and no financial incentive for improved quality

Success story

- Ituni Village was a success story because it was established because of Bauxite Mining and when this industry pulled out of the community, chainsaw milling became a major source of income

Conflicts

- Major conflicts of CSM include: illegal logging due to easy mobility; trespassing boundaries since boundaries are not properly established; poor returns because production is based on purchaser sizes; and no standardization of pricing based by regulatory body resulting in changes during transactions.
- There is conflict with the regulatory bodies, communities, buyers and between legal and illegal loggers.
- Operators have the greatest complaints over the costs of the investment and breaches in contracts and payment agreements.

Conflict management

- Mechanisms which exist for conflict resolution include community leaders e.g. councils or associations and GFC.
- Common complaints include breach of payment agreements, rejection of quality wood, illegal harvesting, breaking regulatory laws.
- Forest Services eventually resolves issues.

Response to National Guidelines

- Chainsaw millers have been responsive with the use of new technologies, implementation of training, the establishment of organized groups and fines for non-compliance have been hefty.

Policies

- In Guyana the policy is that chainsaw millers have to acquire licensing, legal acquisition of lands, quota systems, tagging, removal permits and monitoring by GFC.
- In Suriname forestry concessions have to be granted; there no licensing regarding chainsaw milling but there must be compliance with concession rules.
- The need for community development informed these policies and to fulfill the need for accountability and compliance.
- The allocation of resources depends on the availability of land, slash and burn agriculture, the formation of associations or groups or individuals who can acquire permits.
- Access to resources is managed by the major stakeholders including Forest Services, associations, etc.

Key challenges include lack of adequate extraction equipment, transportation constraints, high wear and tear of equipment and lack of proper training and use of safety gear resulting in injury, weather, unfair pricing, and lack of quality control in production.

The Future

- For some there is no future in chainsaw milling in light of other policy e.g. Low Carbon Development Strategy of Guyana
- Increased regulation and control policy
- Will be reduced to a very small scale industry
- In Suriname growth is expected due to granting of small concessions
- Increase in Board Mill use possibly because quality demands or policy concessions
- Creation of alternative industry such as non timber forest products

Managing stakeholders concerns

- Concerns may be managed through workshops, associations, working with Forest Services

Chainsaw milling and other development goals

- Replanting of forests
- Agro- Forestry
- Creating compliance with other industry such as mining

Other issues

- Monitoring of ecological impacts of chainsaw milling
- Vertical integration of industry to include increased community benefits

- Increased communication between stakeholders
- Insurance (life and health) for operators

3.3.3 Presentation: Group Krokrodua

Benefits and social issues around chainsaw milling

Relative importance for local livelihoods

- Primary/principal source of income/employment (Guyana)
 - 85% population of **Ituni** and 60-65% **Hururu** depend on CSM
 - 300 of a population of 5000 are chainsaw operators in **Kwakwani**
- Ancillary employment – spare parts dealers, truckers, choker-men, fuel suppliers
- Majority of CSM operators are illegal immigrants; it is growing (Suriname)
- Source of additional income to subsistence activities (Bolivia)

% revenue for chainsaw milling operators

- Average per individual 20,000 BM a month to make a profit, 10,000 BM only covers expenses (Guyana), this make it difficult for everyone in communities to harvest a volume that is profitable.
- Advantage is that larger % of revenue which goes towards operating costs remains within the community or the country of origin.
- Increase in market demand observed but % revenue not yet determined (Suriname)
- Profit margins are highly dependent on quantity of harvest/size of operation, species harvested, markets and efficiency level of the operation (rate of recovery)

Reason

- CSM not as efficient as larger operators

Technologies to improve efficiency

- Efforts to introduce and encourage the use of chainsaw frames and recognise advantages of using the portable mills.

Constraints to adoption

- Loggers perceive use of new technology slows production rate. Resistance to new technology.
- No incentives to improve quality and reduce wastage (royalty paid on recovered and not standing volume).
- Still need for more training and awareness (skills improvement).
- Adoption must be based on operator interest.
- Market demand and driven: improved quality of product maximises recovery
- Need for grading system for CSL
- Need for policy change on chainsaw milling

Success Stories

- **Kwakwani**
 - change from illegal to legal logging by lobbying for legal forest land;
 - more sustainable livelihood;
 - improved capacity to manage operations through training from fund acquired by various funding agencies, i.e. IDB.
- **Ituni**
 - challenged market by withholding produce and achieved a higher price for their products.

Managing conflicts

Major conflicts

Buyers and producers

- Reneging on contracts (untimely/lack of delivery of produce)
- Failure to follow grading standards that are in place
- Differences in volume assessment between buyers and producers
- Pricing

Operators and land owners

- Access to the resource leading to illegal harvesting/trespassing
 - Road use

Operators and GFC

- Non-compliance with forest legislation

However, it should be noted that with efforts of training, improved knowledge, recognition of the value of regulations, the relationships are improving greatly and quite rapidly between the authorities, the associations and the loggers.

Conflict management mechanism

- Pressure on large enterprises to develop fair trade practices due to threat of loss of access to the resource (Bolivia)
- Need for better understanding of sector by policy makers
- Strengthening in areas of processing and marketing by policy makers to assist institutions in conflict resolution
- Formation of a CSL body (national)

Policies on Chainsaw Milling

Existing policies

- Policy framework for operations exists (Guyana)

Consideration that informed policy

- Regulatory body (GFC) sees CSM as a viable means of livelihood

Management of Access to Resources

- Controlled by the GFC through land allocation system
- Quota system

Key challenges with managing CSM operations

- Limited access to loans/credit due to insecurity of tenure (short term concession ≤ 2 years)
- Marginal lands allocated to CSM limiting resource availability
- Some CSM operators challenged to meet GFC's minimum quotas and hence royalty

Evidence of responsiveness to guidelines

- Adherence to occupational health and safety standards
- Movement from illegal to legal operations

Future of CSM

- Movement from CSM to portable mill
- Limited resource affects sustainability of CSM
- Aim to improve efficiency of operation by use of re-saw mills, planers, training, etc
- Product and market development for utilising wastes, i.e. women involved in utilising waste materials
- Product diversification
- Development of lesser used/known species
- Continued future for CSM for salvage and utilising of areas with lesser commercial species

Measures to manage Stakeholders concern

- Price setting among producers
- Sprinting: large concessionaires offering employment to illegal loggers to avoid losses
- Zoning
- Forest Producers Association (FPA) now recognises and includes CSM operators as viable (success story of conflicts being resolved)

- Kwakwani and Ituni has applied for membership
- Private sector slower than public sector in recognising viability of CSM

Alignment with other developmental goals

- Poverty alleviation

Monitoring Mechanisms

- Legislation in place (Guyana)
- Legislation in process in Suriname
- Log tagging and tracking system (Bolivia, Guyana and Suriname)
- Removal and transport permit (Bolivia, Guyana and Suriname)
- Inspections
 - Suriname only inspects open trucks/containers; - inspection of closed containers only with police enforcement
 - Situation being exploited by illegal loggers
- Check points (Guyana)

Problems with compliance

- Abuse of tracking systems
 - Permits traded between loggers and private property holders (Bolivia)
- Lack of capacity for effective enforcement (Bolivia, Guyana, Suriname)
 - Need to create incentives for industry operators to want to be compliant
 - Need for capacity building of regulatory bodies to enforce forest laws and regulations
- Measures in place to limit CSM to specific area
 - System of land allocation employed by the GFC and Suriname Forest Service

Other issues: Recommendations

- Certification of trained logging operators, recognising CSM as a trade
- Legislation enabling CSM operators to protect their land (independent monitoring).

Question/comments

1. On the statement that the majority chainsaw lumbering is done illegal immigrants in Suriname, it should be noted that this is not yet quantified and as such a conclusion not be made on this.
2. Recovery rates should be discussed based on how (method) the log is ripped and not necessarily the size of the chain used, i.e. sawmills *versus* chainsaw milled lumber, and the value achieved from the lumber.
3. Social commitment in community development of the SLAs should be mentioned as a success story.

Presentation: Group Kastanje

This group focused on chainsaw milling and not chainsaw logging which is a much wider activity.

Managing conflicts

Major stakeholders involved in chainsaw milling

- Chainsaw millers
- Sawmillers (large and small)
- Policy makers
- Regulatory bodies
- Environmentalists
- Local communities
- Goods suppliers

- Buyers
- Public
- Support organisations/NGOs

Major conflicts

- Conflicts will depend on legality of chainsaw milling. Illegal activities will always attract conflicts.
- *Sawmillers complain that*
 - quality of lumber is poor coming from chainsaw milling
 - Lumber is cheaper, competition from chainsaw millers
 - Production cost is lower for chainsaw milling (lower investment)
 - More administrative burden of sawmillers vs. chainsaw millers (level of compliance, pre-planning activities required)
 - Perception that large companies attract more scrutiny, more monitoring than chainsaw millers
 - Perception of damage by large scale operations
 - Reliability of supply to buyers (collect advance with promise to supply). It should be noted that sawmillers do benefit from purchasing chainsaw lumber and reprocessing the product.
 - Level of trust affects long term relationship between buyer and supplier, main aim of chainsaw miller is to make a quick dollar.
 - Legality of the operations. The perception that chainsaw millers normally overstep their boundaries.
 - Policy- (related to the laws, public)-enforcement and public perception and response.
- *Chainsaw millers*
 - regulations are harsher compared to large scale millers
 - Inability to negotiate for higher prices (because of poor handling during transportation)
 - Regulatory body does interfere/intervene
 - Policy should be put in place to protect chainsaw millers
 - Prosecution procedures
- *Policy Makers*
 - Compliance with regulations of chainsaw miller because of the mentality of making fast money.
- *Regulatory Bodies*
 - Political interference
 - Corruption, collusion between officers/chainsaw operators
 - Willingness to undergo training
- *Regulatory bodies (Guyana)*
 - Difficulty to regulate, operations are scattered/spread
 - Monitoring resource (more)
 - Verification of produce
 - Regulation of quality of lumber
 - Compliance with laws, policies/guidelines
 - Enforcement
- *T&T*
 - Time it takes to prosecute
 - Verification
 - Laws are subject to different interpretation (loopholes)
 - Level of training
- *Environmentalist concerns*
 - Habitat destruction/species migration

- Littering (spilling of fuel)/ wastage
- Noise pollution
- Credibility of produce
- Compliance with National/ International Requirements/ Programmes
- *Local Communities*
 - Inequitable sharing of benefits
 - Land Allocation constraints/ access to land nearby resulting in possibility of creaming out of land.
 - Transportation
 - Market/ buyers (not satisfied with price)
 - Quality of lumber
- *Buyers*
 - Quality
 - Species
 - Reliability of supply/ quantity
 - Size of cuts available
 - Trees cut are not mature

Responsiveness to national guidelines/training/new technologies

- Training
 - 50-50 ratio and depends on the availability of financial resources
 - Will depend on access to necessary equipment/safety gear
 - Cost of doing retooling and make the more equipped is a challenge
 - Lack of opportunities to apply what is learnt
- National Guidelines
 - General consensus – chainsawmillers follow National guidelines

Conflict management mechanism available

- Guidelines- must gain legal access to resources
- Licences- requires a license to operate
- Tagging system
- Requirement for obtaining these permits will vary from country to country
- Reporting and verification systems- reports to mandated body who acts as a mediator to manage conflicts.
- Training
- Regular monitoring/ response based on actual situation on the ground
- Regular meetings/workshops/social development programmes

Policies on chainsaw milling

How do you see chainsaw milling in the future?

- Will continue, need to put policies in place to make it legal

Questions/comments/answer:

1. Whether considerations would be given for chainsaw millers to be trained and certified before they are granted their licenses in the future?
 - a. There are discussions ongoing on this issue. However, it can not be determined when this would happen. In addition, GFC is already registering chainsaws related to all sawpit license issued.
2. Small scale chainsaw operators are not necessarily small scale in the volume of cash they handle and revenue earned.
3. Is there any impact on chainsaw milling in countries where there is plantation forestry, i.e. Trinidad and Tobago?

- a. There is not much chainsaw milling in T&T, however, there is a huge thrust in replanting and reforestation programme at two levels: 1. the Government level where it is mandated by the Oil companies that remove trees from the natural forests to replant the existing areas in an equivalent area; and 2. The community agro-forestry incentive programme where private farmers are encouraged to get into agro-forestry subsidized (the plants) by the State. Added to that once registered under programme there are other benefits such as subsidizing certain equipment and inputs through no value added tax. The National Watershed and Rehabilitation project is also involved in agro-forestry and are also subsidized by the State.

3.4 Salient aspects of chainsaw milling: A summary of national experiences **by Dr. Paulette Bynoe**

Introduction

Very important are:

- Chainsaw milling underscores the complexity and interdisciplinarity of sustainable development issues. On the one hand there is the need to **protect the integrity of ecological systems**, and on the other there is the **need to create livelihood opportunities**. A balance must therefore be achieved.
- Societies are heterogeneous (for example, geographic and socio-economic settings: the legality (Guyana, Dominica, St. Lucia, St. Vincent and the Grenadines, and Suriname: partly) and illegality (Ghana, Trinidad and Tobago, Bolivia) of chainsaw milling in specific countries; typologies (one persons, two to three persons, a family), growth and development- while it is escalating in Guyana, in other countries this is not so; however there are similarities in some aspects.
- Chainsaw milling is a complex issue that should be studied within a historical, socio-economic, political and cultural context.
- Replication could be a challenge.

What are some of the issues?

Institutional (Policy and Legislative Framework)

- Illegality versus Legality (e.g. State Forest Permission)
- Competing land uses as in the case of Guyana
- Failure to market chainsaw lumber at a price that is sustainable
- Poor compliance and absence of quality control systems/rigid enforcement mechanisms

- Lack of regulation of operations and consequent difficulty in compliance monitoring
- Failure to fully integrate chainsaw milling into forest policy development
- Ambiguity of legislation (are Forest Laws applicable to all forests (State, private, Communal?))

Drivers and driving factors

DRIVING FORCES	High incidence of poverty (particularly employment and income)	Natural disaster or Internal War	High market demand/affordable prices/ construction of homes	Low investment & Pre-financing facilities and technology available	Livelihood Opportunities/ Decline in more formalized economic activities	Absence of enforcement mechanism/ Limited enforcement capability and Low Entry requirements	Increased accessibility to forests through improved infrastructure
COUNTRIES							
BELIZE	x	x	x		x		
BOLIVIA			x		x	x	
DOMINICA		x	x		x	x	x
GHANA	x		x	x	x	x	
GUYANA	x		x	x	x	x	x
SAINT LUCIA	x		x		x	x	
SAINT VINCENT AND THE GRENADINES	x		x		x	x	
SURINAME	x	x		x	x	x	
TRINIDAD AND TOBAGO	NA	NA	NA	NA	NA	NA	NA

The issues

Capability and Empowerment

- Lack of/limited knowledge and understanding of the regulatory framework

- Lack of /limited capacity at individual, organisations and systemic or strategic levels
- Limited community participation in natural resources management
- Lack of training in efficient harvesting techniques
- Lack of training in safe practices

Other

- Conflicts among multiple resource users (land uses) and erosion of social capital (trust, conflicts among stakeholders, particularly in Guyana and Ghana)
- Poor organisational structure (typical of an informal sector activity) and consequently less negotiating power; it weakens the social capital
- Pay royalty on standing volume rather than recovered volume
- Introduction of incentives to encourage compliance

The effects

ISSUES	Cutting of under-sized trees	Generate of waste and poor recovery	Harvesting of protected species/ logging illegal and poaching	Poor Occupational Health and Safety Issues	Revenue Loss to the State	Poor silviculture practices	Invasion of Convalescent or Protective areas
COUNTRIES							
BELIZE		X	X				X
BOLIVIA		X					
DOMINICA		X				X	
GHANA					X	X	X
GUYANA	X	X	X	X		X	
SAINT LUCIA		X		X		X	
SAINT VINCENT AND THE GRENADINES		X		X		X	
SURINAME			X				
TRINIDAD AND TOBAGO	NA	NA	NA	NA	NA	NA	NA

Policy Options (generic and abstract but with more work and be elaborated)

Capacity Building

- Improving the institutional framework (formulate, review, update and adjust legislation, regulation and standards, markets). There is importance of integrating CSM into forest policy development; establishing synergies with other strategies such as Guyana's Low Carbon Development Strategy
- Organisational strengthening for example, establishment of a Compliance Monitoring Unit.
- Awareness building and skills training through public outreach programmes (importers, distributors and operators). Must be on-going.
- Technology development (to optimise benefits and increase efficiencies- doing more with less)
- Action-oriented research to inform policies (sustainable livelihoods, best practices related to increased recovery, etc.)

Legislative

- Limiting logging season
- Enabling appropriate forms of CSM (Code of Practice)
- Banning is NOT an option. Regulation, for example at point of sale of chainsaw mills? Improvement? ...pending on the socio-economic and political context.

Stakeholder Involvement

There is need for a paradigm shift (bottom-up management)

- Promotion of Community Forest Management Plans
- Multi-stakeholder dialogue and conflict resolution
- Shared decision making in forest governance, Community Based Natural Resource Management (CBNRM)

Socio-Economic

- Create other sustainable livelihood opportunities as part of National Poverty Reduction Strategy or National Development Strategies (macro-economic policy interventions)

3.5 The Way Forward

The Overall Coordinator, Ms. Marieke Wit outlined the way forward for the workshop and work of the Chainsaw Milling Project.

She indicated that it has become very clear that chainsaw milling is a widespread activity on which many local livelihoods depend and that satisfies local demand for lumber. Policy responses need to consider existing chainsaw milling practices and build on them. The Government of Guyana has taken this approach and in doing so can serve as an example for many other countries in the world, but there are also challenges of course. The question is, as posed by Dr. Zagt, what will be the status of chainsaw milling in the future, in the light of the recent developments around the Low Carbon Development Strategy of the Government of Guyana? It was very encouraging that the Minister qualified the multi-stakeholder dialogue process of the project as a very timely dialogue that could support Guyana in this strategy. In Ghana, the project is in the process of signing up with the EU's Action Plan for the Forest Law Enforcement, Governance and Trade (FLEGT) and while doing so we try to address the situation of the domestic markets in Ghana which is supplied with more than 80% of illegally produced chainsaw lumber. We might well adopt a similar approach in Guyana for the Low Carbon Development Strategy to address the chainsaw milling issues here.

What will happen after this workshop?

The results of this workshop will be bundled with the results from the regional workshop of the West African countries, and discuss it further on the internet in a managed discussion to get experiences from all over the world regarding chainsaw milling. The results will be published in a publication on Domestic Timber Supply in the European Tropical Forest Research Network (ETFRN), of which Tropenbos International holds the Secretariat.

The information from this workshop can also be used to inform the multi-stakeholder process in Guyana.

Votes of thanks were offered by the Captain of Annai District, Mr. Michael Williams and the Project Coordinator of the Guyana Component of the Chainsaw Milling Project, Ms. Rohini Kerrett.

The workshop was formally closed by Mr. Godfrey Marshall, the chairperson for the day.

Annex 1: Agenda

Wednesday, July 8, 2009

8:30 – 9:00	Arrival and Registration <i>Stacey Whyte</i>
09:00 – 10:00	<p>Opening Ceremony <i>Chairperson: Dr. Raquel Thomas</i></p> <p>Welcome <i>Dr. Raquel Thomas</i></p> <p>Video Documentary on Chainsaw Lumbering in Guyana</p> <p>Tropenbos Role in the Project and Reference Framework for the Regional Workshop <i>Dr. Roderick Zagt</i></p> <p>Address by the Commissioner of Forests, Guyana Forestry Commission <i>Mr. James Singh</i></p> <p>Address by the Ambassador EC Delegation <i>Ambassador Geert Heikens</i></p> <p>Feature address Minister of Agriculture with responsibility for Forestry <i>Hon. Robert M. Persaud</i></p>
10:00 – 10:10	Coffee Break
10:10 – 10:40	<p>Case Study on Chainsaw Lumbering in Guyana <i>Mr. Godfrey Marshall</i> <i>Director, Forestry Training Centre Inc</i></p>
10.45 – 11:15	<p>Case Study on Chainsaw Lumbering in Ghana <i>Mrs. Mercy Owusu Ansa</i> <i>Facilitator, Chainsaw Milling Project, Ghana</i></p>
11:15 – 11:30	Discussion Session: Questions/answers and general discussions
11:30 – 12:00	<p>Country presentation: Belize <i>Mr. Wilber Sabido</i> <i>Chief Forest Officer</i> <i>Forest Department, Belize</i></p>
12:00 – 13:00	Lunch
13:00 – 13:30	<p>Country presentation: Suriname <i>Dr. Rudi van Kantén</i> <i>Programme Team Leader, TBI</i> <i>Suriname</i></p>
13.30 - 14.00	<p>Country presentation: Dominica <i>Mr. Albert Gallion</i> <i>Assistant Forest Officer</i> <i>Ministry of Agriculture, Forest and Wildlife Division</i></p>
14.00 – 14.30	<p>Country presentation: Trinidad & Tobago <i>Mr. Barry Mahabir</i> <i>Assistant Conservator of Forests</i> <i>Forestry Division, Ministry of Agriculture, Land and Marine Resources</i></p>
14.30 - 14.40	Discussion Session: Questions/answers and general discussions
14.40 – 14.50	Coffee Break

AGENDA

Wednesday, July 8, 2009 continued

14.50 – 15.20	Country presentation: St. Lucia	Mr. Alfred Prosper <i>Forest Officer, Forestry Dept Ministry of Agriculture</i>
15.20 – 15.50	Country presentation: St. Vincent and the Grenadines	Mr. Anthony Simon <i>Forestry Officer Forestry Department</i>
15.50 – 16.20	Country presentation: Bolivia	Dr. Charlotte Benneker <i>Post doctoral researcher ITC, The Netherlands</i>
16.20 – 16.30	Discussion Session: Questions/answers and general discussions	
16.30	END	
19.00	Cocktail Reception, Georgetown Club	

Thursday, July 9, 2009

8.30 – 9.00	Registration <i>Stacey Whyte</i>	
09:00 – 09:05	Recap of Day 1 <i>Chairperson: Godfrey Marshall</i>	
09:05 – 10:30	Group Work Identification of issues and options for aligning the practice with sustainable forest management and rural livelihoods	
10:30 – 10.45	Coffee Break	
10.45 – 13.00	Group Presentations/Plenary Session	
13:00 – 14:00	Lunch	
14:00 – 14:30	Synopsis: Recap of issues and options	<i>Dr. Paulette Bynoe</i>
14.30 – 14.45	Closing Remarks	<i>Ms. Marieke Wit (Overall Coordinator) Mr. Glendon Allicock (Pilot Community Representative) Ms. Rohini Kerrett (Project Coordinator, Guyana)</i>
14:45	END/Snacks	

Annex 2: Speeches at Opening Ceremony

A. Opening remarks on behalf of Tropenbos International, by Dr. Roderick Zagt

Workshop on chainsaw milling in the Guiana Shield/Caribbean, July 8 2009, Georgetown

Honourable minister of Minister of Agriculture with responsibility for Forests
Ambassador of the European Commission
Deputy Commissioner of Forests
Country representatives
Participants to the workshop
Ladies and Gentlemen

On behalf of Tropenbos International I would like to thank you for coming to this workshop about chainsaw milling, to share your knowledge, expertise and views on chainsaw milling and domestic timber supply with us.

Many years ago, when I first came to Guyana as a researcher in the Tropenbos Guyana Programme, the forest sector was opening for foreign investment as the country was emerging from long years of economic hardship. At that time, the focus was on developing an export-oriented industry that would create wealth and jobs for the nation. The efforts of all stakeholders focused on addressing the numerous challenges facing the development of the large scale forest industry.

Nobody would have thought that, by the time I left, in 2002, it would be the domestic market and the small scale forest sector that would have taken centre stage in a sometimes fierce debate on the forest sector. Almost unnoticed, numerous small entrepreneurs had seized the opportunities afforded by the improving economic conditions to develop a chainsaw milling subsector that may be small in scale but large in impact. Cheap chainsawn lumber flooded the market and helped fuel Guyana's building boom. Numerous planing mills grew bigger year after year. Guyana became the world's second largest importer of Stihl ripping chains – only surpassed by Indonesia. Entire communities became dependent on chainsaw logging and operated in the margin of the law. The scale of the chainsaw logging subsector grew so big that small loggers spoke out with demands for concessions and leases and support, and thus became direct competitors for the large scale forest sector. Many will remember the scenes of small loggers shaking the gates of the GFC head quarters in Kingston.

The Government of Guyana and the Guyana Forestry Commission must be commended for rising to the many challenges posed by the emergence of the chainsaw subsector. They have set an example to many countries struggling with similar problems.

Significant strides have been made by Guyana in capturing the potential of chainsaw logging as a way of developing community livelihoods. Small Logging Associations have become a way to organize chainsaw loggers, to facilitate communication with the authorities and to open access to support and forest lands. The recognition of Amerindian Lands, now covering 13% of the country, has created opportunities for disadvantaged Amerindian communities to engage into community forestry as a means of local development. The log tagging system has been successful in reducing the extent of illegal logging and in keeping harvesting levels to a level we all hope is sustainable. And GFC has vastly expanded its presence in the field through a network of forest stations and active monitoring.

At the present workshop, experts from nine countries in the Caribbean and from Bolivia and Ghana have gathered to discuss chainsaw milling and the way in which their governments have responded to the challenges posed by this mode of logging. It forms part of a project 'Towards sustainable chainsaw milling in Ghana and Guyana' financed by the European Commission. In Guyana, this project is carried out by

the Forestry Training Centre Incorporated, a subsidiary of the GFC, and the Iwokrama International Centre for Rain Forest Conservation and Development, coordinated by Tropenbos International of the Netherlands.

The workshop follows on the heels of a similar one organized by the project in the West-African region, in May in Accra, Ghana. One of the organizers of that workshop is here to share the African experience with us. That occasion made it clear that **chainsaw milling is a global phenomenon**, and that countries share many of the characteristics around chainsaw milling. Governments everywhere in the world are struggling to find appropriate responses to it. Today, you will hear many examples of that.

What the Chainsaw milling project hopes to achieve in this workshop is to increase our understanding of the commonalities and differences in the issues surrounding chainsaw milling across the range of countries represented here, and to analyse the successes and failures of the policies adopted to address these issues.

After the workshop, we hope to gather the information from both workshops, and expand it through internet discussion into a global analysis of Issues and Options for sustainable chainsaw milling. This information is meant for forestry decision makers in the region and worldwide to guide successful policies that harness the potential of chainsaw milling to improve rural livelihoods while addressing its negative aspects and saving forests. We also hope to provide guidance to the European Commission and governments when designing Voluntary Partnership Agreements in the framework of the EU Forest Law Enforcement, Governance and Trade (FLEGT) initiative.

Let's return to Guyana to discuss the other aim of the workshop.

Even though **the policies of the Government have mitigated many of the immediate challenges related to chainsaw logging, some longer term challenges are still lurking.**

The key question to ask is: what will be the status of chainsaw milling and the condition of the small scale forest sector in five or ten years time?

Is chainsaw milling seen as an unavoidable but temporary step in the development of hinterland communities, bound to disappear as more appropriate technologies or livelihoods emerge and/or the resources get exhausted?

Or will chainsaw milling remain with us for years and years to come – and if so, **to what extent are current practices, current resource allocations and current production volumes sustainable?** Even though forests cover 76% of the country, most of them, particularly the accessible ones suitable for community forestry, are located on fragile lands. Where are the forests to sustain the growth of that sector and support hinterland development?

There are numerous new developments that raise hopes that Guyana's intact forests can contribute to income to the nation. **But who will pay a REDD cent for chainsaw logging?** Guyana's Low Carbon Development Strategy "will not stop existing economic activities or threaten the employment of those already working in the forest, *providing those activities are in accordance with internationally accepted practices*". Is chainsaw milling a threatened livelihood?

Some facts and figures that emerge from the analysis done in the project and in previous studies illustrate some further challenges.

In 2008, Small Logging Associations operated on a mere 3% of all allocated State Production Forests, and State Forest Permissions (the concession form that produces chainsaw lumber) covered 20%. **Yet chainsaw lumber brought in up to 40% of estimated royalties into the GFC coffers**¹. Chainsaw lumber services an estimated 80% of the domestic market. Chainsaw milling is a key economic activity for the Nation.

¹ G. Clarke. Case Study on chainsaw milling in Guyana. Unpublished draft report for the chainsaw milling project, May 2009.

In spite of that importance, the word chainsaw is mentioned only one single time in the recent Forest Bill, as a 'primary conversion plant' and as many times in the 2001 National Forest Plan. **Wouldn't the chainsaw milling subsector be in need of a specific approach, a specific set of policies and specific rules such as a tailor-made Code of Practice, and specific representation at forums where forest policies are shaped?** The fact that chainsaw operators incur so many fines may imply that they tend to err on the wrong side of the law, but it may also show that current sets of rules and regulations are hard to make compatible to the specific features of that subsector.

Again, the key question to ask is: what will be the status of chainsaw milling and the condition of the small scale forest sector in the future? At the project launch in November 2007, the Honourable Minister of Agriculture recognized that the chainsaw will continue to be the primary means of conversion of timber for some time in the future. At the same time, he indicated, the Government is seriously concerned with the better management of the resources including increased efficiency in timber processing. Is this a shared long-term vision among all stakeholders concerned – the Government, the chainsaw dependent communities, the small and medium enterprises that depend on chainsaw milling, the investors in chainsaw milling, the larger concessionaires and sawmillers – about the role of forests in society and the role of chainsaw milling in the forest sector?

Chainsaw-dependent communities need well-stocked and accessible forests located close by their villages. How can that be achieved without harming the legitimate interests of others, such as the large scale forest industry, which is also responsible for thousands of livelihoods? How to organize a 'soft landing' for communities who have exhausted their forestry options?

These questions and dilemmas can only be addressed if **all stakeholders jointly identify the drivers and impacts of chainsaw milling, generate options, discuss future scenarios and agree on actions to be taken to ensure appropriate forms of community forestry as sustainable livelihoods, or agree on alternatives to chainsaw milling.** These actions should address both the **short-term, practical improvement** of the functioning of chainsaw communities and small loggers associations, and the **longer term strategic issues** confronting the nation, including the relative importance of small scale forestry, large scale forestry and forests for climate mitigation.

The results of this workshop, the experiences of different countries in addressing the same problems, along with specific studies already conducted and the viewpoints of different stakeholders, will serve as an input in multi-stakeholder dialogue about chainsaw milling which is organized under this project. Tropenbos International is to contribute to the better use and governance of tropical forests for the benefit of people, conservation and sustainable development. We do that, by making knowledge work for forests and people. I am looking forward to this opportunity to support well-informed decision making for improved management and governance of tropical forests by the sharing of the collective knowledge and wisdom of the participants and I am confident that this will help stakeholders address the challenges of this difficult but important sector.

Thank you very much for your attention and I wish you a fruitful workshop.

B. Remarks on behalf of the GFC, by Mr. Edward Goberdhan

Workshop on chainsaw milling in the Guiana Shield/Caribbean, July 8 2009, Georgetown

Madame Chairperson, Hon. Robert Persaud, Minister of Agriculture with responsibility for Forestry, His Excellency Ambassador Heikens, Dr Roderick Zagt, Mr. Raj Singh Chairman GFC Board of Directors, Representatives of the various countries present today, Staff of Iwokrama, the Forestry Training Centre, the GFC, FPDMC, media, colleagues all- The Guyana Forestry Commission is pleased to have this opportunity to give some brief remarks at this opening ceremony.

Chain saw logging is a vital aspect of the forest sector in Guyana. The GFC as the agency responsible for forest management in Guyana has direct interaction with this component of the sector on a daily basis and we have made tremendous positive advances in both the regularization and regulation of this activity.

These advances did not occur overnight; rather it was the result of a very collaborative process which included continuous dialogue with illegal chainsaw loggers since the late 1990's; providing them with legal access to the resource, working with them to form community forestry associations so that benefits would flow to communities rather than to individuals and then providing highly subsidized training to them in Reduced Impact logging techniques.

The GFC is happy to report that compliance of the chain saw millers with the GFC guidelines has evolved over the years to the point where it is now considered to be satisfactory. We however need to strive continuously for improvement and in that respect; this workshop today is considered to be very important. The GFC has expectations that the results of this workshop will provide valuable information to both upgrade our regulatory framework, and to contribute more to the policy formulation process.

Additionally, it is our fervent hope that whilst we focus on the environmental issues, we also keep in mind the fact that Guyana is covered with tropical rain forests and this asset must contribute to the socio economic improvement of the livelihoods of hinterland residents, the stakeholder group that is most involved in the chainsaw milling activity.

GFC is confident that this workshop will be a resounding success and we commit to full participation and collaboration with all other parties present today.

Thank you.

*C. Address by the EC Delegation in Guyana, Ambassador Geert Heikens
Workshop on chainsaw milling in the Guiana Shield/Caribbean, July 8 2009, Georgetown*

**Project "Developing alternatives for illegal chainsaw lumbering through multi-stakeholder dialogue in Ghana and Guyana"
Regional Workshop July 8 – 9 2009**

Honourable Minister, Robert Persaud
Distinguished:

- Commissioner of Guyana Forestry Commission, Mr. James Singh,
- Director of Resource, Management and Training of Iwokrama, Dr. Raquel Thomas
- Director of the Forestry Training Centre, Mr. Godfrey Marshall
- Representative from the Regional and International Communities
- Team Leader, Tropenbos
- Distinguished guests and representatives of the Media
- Ladies and Gentlemen

It is a pleasure to participate today at the launch of the regional workshop promoted by the Project "Developing alternatives for illegal chainsaw lumbering through multi-stakeholder dialogue in Ghana and Guyana" implemented by Tropenbos International in collaboration with the Forestry Training Centre and Iwokrama.

This Programme which is co-financed by the EU (2,186,000 Euro) for 80% of the total budget (2,732,513 Euro) has made available significant resources for the improvement of forest governance and to address strategic matters of chainsaw milling by local communities in Guyana and Ghana.

The support provided to this initiative for the improvement of the so-called chainsaw lumbering (which refers to the on-site conversion of logs into boards) is part of the overall effort of the EU towards the preservation and sustainable use of the environment.

The European Commission adopted in 2001 an “Environment Integration Strategy” which laid down how to integrate environment in development cooperation efforts.

One of the instruments that were activated by the European Commission was a thematic budget line to finance “actions on the environment in developing countries” and “tropical forests and other forests”. This budget line, that provided the funding for the Chainsaw Milling Project, provided in total 249 Mio in support of sustainable forest management and 93 Mio for environmental protection in the period **2000-06**.

At the end of the implementation period of this instrument the Commission proposed in 2006 the creation of a “Thematic programme for environment and sustainable management of natural resources including energy” The proposal acknowledges that two thirds of the planet’s key ecosystems services are being degraded or used unsustainably and present an obstacle to achieving the MDGs, as demonstrated by the recent Millennium Ecosystem Assessment.

The “Thematic Programme for Environment and Sustainable Management of Natural Resources including Energy” sets aside an indicative amount of 804 million Euro for the period 2007-2013; while the indicative amount for the period 2007-2010 is 469,7 Mln.

This include 85,5 Mln for two new initiatives related to Climate Change.

The EU has taken the lead in reaching international agreement on environmental commitments (such as the Convention on Biological Diversity, the Convention to combat desertification and the Kyoto Protocol) and has been promoting the need to help developing countries fulfill their resulting obligations.

The European Consensus on development (adopted in 2005) commits the EU to provide more and better aid and sets the pursuit of the MDGs as the primary objective of the EU development cooperation. Environmental sustainability in specific is enshrined in MDG 7.

I am proud to tell you that the EC is providing significant support to the environmental sector in Guyana: we have at present three environmental projects under implementation, a) the Guyana Shield initiative implemented by UNDP which adopted Iwokrama as a pilot site, b) the Forestry Research Network aiming to establish an international network of institutions to implement applied research in Forestry management and that benefits directly Iwokrama and c) the project “Developing alternatives for illegal chainsaw lumbering through multi-stakeholders dialogue in Ghana and Guyana” that is hosting this event today.

The pilot cases of the two countries are particularly interesting. The two countries adopted different strategies. Ghana outlawed chainsaw lumbering in 1996. Guyana on the other hand, didn’t ban it but progressively introduced increased controls.

Clearly both countries share the concern that legality applies to both the external and internal markets and give priority to a system that enhances dialogue and ease the level of tension between and within communities.

There is today an issue all across the world of “legal wood” and an effort of the world-wide community towards a system of “wood traceability”. This of course should include wood for exports and wood for the internal market. There cannot be a dual system and double standards of legality.

I would like today to commend the Government of Guyana for its well known efforts to contribute to better environmental care in the framework of the Climate change and I would like to encourage Tropenbos and its local partners to continue their efforts for the successful implementation of this project that we hope will contribute to better forest governance to the benefit of the local communities and by extension, the global communities.

D. Feature Address by the Minister of Agriculture with responsibility for Forestry, Hon. Robert M. Persaud, MBA, M.P.

A warm welcome to each of you to this regional workshop on chainsaw milling in the Guiana Shield/Caribbean areas.

Today, I wish to focus on Guyana's experience in chainsaw milling within the context of our internationally proven track record of sound sustainable forest management.

Chainsaw milling has been an activity which has been addressed at several levels, in terms of policy and operational aspects. It is a matter that has been and remains very important to forest resources planning and utilization especially at the level of small and medium size operators, particularly community logging associations. Chainsaw milling, at the policy level, is allowed in Guyana and its existence is supported by the necessary institutional framework to permit and regulate its use. This framework will continue to be reviewed.

This dialogue on chainsaw milling is even more important now given Guyana's thrust of finalizing a Low Carbon Development Strategy, which we will be advancing for wide international support. This type of forest activity has significant bearing on the Strategy since it supports rural and hinterland livelihoods for many and, at the same time, can have various environmental and social impacts.

The importance of regulated chainsaw milling, and allow me to emphasize the term regulated, has long been realized in Guyana. It is an activity that generally presents economic, social and environmental benefits. Chainsaw lumber production in Guyana is a significant part of forest sector production increasing from 28,800m³ in 2000 to 67,000 in 2008. This activity also provides substantial forest sector employment. An important part of the small and medium size operators who are allocated leases are community logging association, of which 27 associations have been established to date and supports thousands of persons, directly.

The policy objective of chainsaw milling is to ensure a working framework where the goal of attaining economic and social benefits does not lead to environmental sustainability and sound forest management being compromised.

We cannot ignore the fact that our chainsaw milling sector faces several challenges. Recovery is overall lower than expected. There is still an identified need for capacity building in the use and maintenance of chainsaws. While some efforts have been made in the past involving the use of guides to enhance recovery, more still needs to be done to increase recovery, execute better practices and decrease the level of wastage generated. And much more needs to be done in implementing effective health and safety standards to protect operators.

At the same time, despite the small size of the operation, more can be done in shifting the existing marketing paradigm to forward plan conversion activities so that milling is done to specific orders, thereby enabling maximum benefits to be gained.

From the operational perspective, we cannot ignore the fact that chainsaw milling offers additional advantages of decreased transportation cost owing to the fact that semi finished products are brought to markets directly from the forest. This practice often offers a level of versatility, since chainsaw milling, once done properly, allows for defects to be avoided and for optimal cuts to be taken from a log, despite low recovery. These benefits support the low capital, low investment characteristic of chainsaw milling operators, to yield maximum benefits to operators in this sub sector.

From the regulatory perspective, having recognized the role that chainsaw milling play in Guyana, a pragmatic and concerted approach has been taken to allow the existence of chainsaw through a workable system of regulatory standards and requirements. The Code of Practice for timber harvesting sets the basis of standards to be maintained in chainsaw logging as well as requirements to allow for the effective

protection of the forest, addressing areas such as protection of buffer zones, and compliance with health and safety standards.

Directly, the Standards for Wood Processing operations cover important issues of efficiency and recovery rates. Together with these standards, monitoring and regulation is done through the GFC's administrative and environmental monitoring programmes. From the administrative perspective, chainsaw use for logging activities has to be approved by GFC through the saw pit licensing process. In monitoring, environmental compliance is tested in chainsaw milling operations and includes detailed assessments of compliance with various categories of environmental requirements. As evident, the approach to chainsaw lumbering in Guyana has been one that is dynamic, constantly looking to improve on the regulation and practice whilst at the same time balancing the requirements of the stakeholders which depend on this activity for their livelihood.

Whilst strengthening of compliance with standards addresses improvement from the regulatory side, the Government has also addressed the needs of stakeholders in building technical capacity through the work of the Forestry Training Centre Inc (FTCI). The FTCI has developed a manual on chainsaw use and maintenance specially tailored for smaller operators, and has executed several courses with a number of communities and groups. Initiatives such as these have assisted stakeholders to be better able to enhance efficiency and achieve compliance with required standards and at the same time earning income and supporting their livelihoods and that of their communities.

The Government's approach has thus been one of regulating whilst facilitating with the interest of all stakeholders in mind, especially Guyana's rural and hinterland population.

As mentioned earlier, the dialogue on chainsaw milling is viewed as coming at an opportune time for Guyana as the implication of this activity on Guyana's Low Carbon Development Strategy is significant. The model on which the draft LCDS is based proposes Guyana's development along a low carbon growth trajectory. It values the opportunity cost of sustainably managing and protecting our forests at US\$580M annually and targets specific strategic economic infrastructure for advancement including hydro power generation, information community and technology through the provision of increased bandwidth, and drainage and irrigation enhancement. Additionally, the LCDS will facilitate high potential low carbon sectors which include fruits and vegetables, aqua culture, and sustainable forestry and wood processing. Without doubt, chainsaw milling is very relevant to this strategy as it represents an important part of the wood processing sector. Regulated chainsaw milling allows in many cases for a smaller carbon footprint to be made in our forests owing to the versatility and size of the operations. The practice, by its very nature, leads to relatively lower clearance owing to limited roads and infrastructural requirements – for example, most chainsaw milling operations use tractors instead of skidders, which allow for reduced clearances from skid roads and pathways.

Additionally, conversion on site allows for a reduction in transportation cost of waste products and thereby reduces the fossil fuel usage of operators. Infrastructure maintenance is also limited and also lends itself to a low carbon operation with relatively low environmental damage. Further, the scale and versatility of chainsaw milling allows for forest extraction activities to be confined to a shorter time thereby enabling the forest area and ecosystems to regenerate faster. Studies have also shown that once properly practiced, the waste remaining from chainsaw logging activities assist in enhancing the soil nutrient composition thereby boosting the capacity of soils to support regeneration.

I wish to reiterate that the draft Low Carbon Development Strategy will not be at the cost to livelihoods or the sustainable development of communities. The Strategy will not in any way threaten the sovereignty of Guyana to chart the path of its own development, not at the community level and not at the national level. In the context of the LCDS, logging activities, including chainsaw milling, and other utilization activities will be able to continue but will have to be done in a sustainable way that is compatible with the provisions that may be required by a LCDS framework.

Importantly, too we are meeting at a time when Guyana has advanced its efforts in preparatory activities through the World Bank's Forest Carbon Partnership Facility. Guyana was one of only three countries to

see its RPlan formally approved by the World Bank's Participants Committee just two weeks ago. This Plan will assist Guyana in developing a monitoring, reporting and verification system that will allow for an effective indicators system to be developed which is necessary to target a forest carbon financing scheme.

Notwithstanding the advances we are making, I again emphasize the importance of proper practice by chainsaw milling operators. It is vital for the standards and guidelines of the GFC and the EPA to be complied with closely as the benefits of chainsaw milling will not be realized.

As we move forward with this dialogue, I expect that the issues I have raised and others will be examined further as we assess the experiences of various countries represented here and learn from each other's successes and approaches.

The Government of Guyana welcomes this most timely dialogue and looks forward to the results of the two-day sessions.

Annex 3: List of Participants

	Country	Participants
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Annex 4: Pictures of the Workshop

