



## 3.6 The chainsaw milling subsector in Guyana

GODFREY MARSHALL and ROHINI KERRETT

### Introduction

The tropical high forests of Guyana cover some 16.4 million hectares (ha) or about 76% of the country's total land area (Table 1); 13.6 million hectares have been designated State Forests to support forest industries, among other purposes. The forestry authority is the Guyana Forestry Commission (GFC).

Small-scale loggers have been an integral part of the forestry sector since the 1920s. Traditionally, their timber-harvesting technologies were labour intensive and they depended almost totally on the sale of logs and other products to sawmillers or other intermediaries.

The chainsaw was introduced to Guyana by FAO in 1967 (Vieira 1980) to improve the efficiency of tree-felling practices and to salvage merchantable material from non-harvestable trees. Chainsaw milling emerged in the 1970s (Lewis and Hodge 2008). Small-scale loggers, holders of communal lands and new entrants to the sector, such as ex-miners, ex-public servants, farmers and businesspeople, embraced chainsaw milling with alacrity, primarily because it offered them a more feasible livelihood option than traditional logging. The GFC had some challenges in managing chainsaw milling operations, mostly in the 1970s and 1980s, because illegal chainsaw operators moved quickly and surreptitiously through State Forests and private lands.

The local market utilizes large volumes of various grades and dimensions of rough-sawn timber for uses including bridges, piers and use in the agricultural sector (sluices, fences and pens for livestock); chainsawn lumber satisfies 80% of this market. Registered production with the GFC shows that chainsawn lumber increased from 751 m<sup>3</sup> in 1980 to about 73,000 m<sup>3</sup> in 2009 (Figure 1).



IN SOME COMMUNITIES, THE EARNINGS FROM CHAINSAWN LUMBER HAVE BECOME THE PRIMARY SOURCE OF INCOME, SUPERSEDING THAT FROM MORE TRADITIONAL PRACTICES SUCH AS FARMING.

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**Godfrey Marshall** is Director of the Forestry Training Centre Inc. in Guyana. **Rohini Kerrett** works for Forestry Training Centre Inc. as the National Coordinator of the EU chainsaw milling project in Guyana.

**Table 1. Key facts about forestry in Guyana**

land area	215,000 km <sup>2</sup>
population	750,000
forest area	16.4 million ha
total number of people employed by the forestry sector	24,126
State Forests (managed directly by the GFC)	13.6 million ha
▪ State Forest Permission	1.7 m ha
▪ Wood Cutting Leases	0.07 m ha
▪ Timber Sales Agreements	4.2 m ha
▪ State Forest Exploration Permit	0.6 m ha
▪ Reserves	1.5 m ha
▪ Unallocated area	5.6 m ha
average annual log and other roundwood production (State Forests and private lands)	* 337,116 m <sup>3</sup>
average annual chainsaw lumber production (State Forests and private lands)	** 67,931 m <sup>3</sup>
recovery efficiency, chainsaw milling	19–44%
recovery efficiency, static sawmills	47–65%
deforestation rate	0%
contribution to GDP (primary production)	2.70%

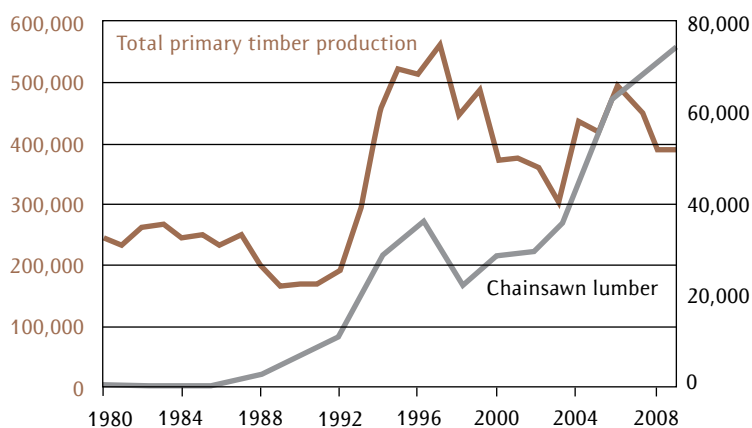
\*average yearly production for 2005–09; \*\*average yearly production for 2002–06;  
Sources: GFC 2007, 2009, 2010; Clarke 2009; Kerrett and Wit 2009

### Institutional and legal framework

For small-scale operators, the GFC grants State Forest Permissions (SFPs) for areas of less than 8,000 ha for periods up to two years, with an option for renewal. In many instances, groups of small-scale operators pool their resources and organize themselves at the community level into small loggers associations (SLAs). Forestry operations also take place on communal (Amerindian) lands, totaling some 2.4 million ha, and provide a means of livelihoods for SLAs. SLAs have generally embraced chainsaw milling technology.

**Figure 1. Total timber production and chainsawn lumber production (m<sup>3</sup>), 1980–2008**

Source: GFC 2010



To carry out chainsaw milling, a logger or SLA requires an SFP and a sawpit licence; the SFP grants permission to fell a specified number of trees while the sawpit licence grants permission to “rip” logs (i.e., saw them in the direction of the grain) at the stump site. (A sawmill licence is required for the use of portable sawmills.) The model and serial number of all chainsaws used in SFPs must be registered with the GFC, whether or not the owner intends to carry out chainsaw milling.

Most SFPs have been allocated in logged-over forests or in forested areas designated as conversion forests. Frequently, the number of merchantable trees does not meet the expectations of loggers, even though the GFC encourages them to assess the area before putting in their applications.

GFC set up its Social Development Programme (SDP) in 2001, in recognition of the growing importance of chainsaw milling to the socio-economic development of rural communities. Programme objectives are to ensure that forest-based communities utilize the forest resources allocated to them in a sustainable manner and that, whenever possible, members of the community benefit directly from their forest resources. The GFC, in line with the goals under the programme, supports the formation of SLAs, providing them with technical assistance to organize themselves and acquire the proper legal instruments. As of June 30, 2010, 42 SLAs were registered with the GFC, holding a total of 76 SFPs in State forests; a few SLAs operate on communal (Amerindian) lands.

All loggers within a community are encouraged to join their local SLA. SLAs have 20–90 members and provide the following benefits to them:

- collective negotiation on forest resources;
- collective negotiation on and use of technical assistance, training projects and donor funds; and
- a more organized approach to negotiating prices for the lumber they produce.

The operation of associations is challenging, since some loggers have considerable assets and others relatively little. These are some of the typical issues associated with management of SLAs:

- improper management of documents (e.g., removal permits and log tags) issued to SLAs by the GFC;
- improper management of revenues generated by the SLAs;
- lack of understanding of how GFC determines the number of tags and permits issued to each SLA;
- perceptions about the role, experience and behaviour of forest officers; and
- concerns over the fines applicable to offences under the *Forests Act*.

Taxes are paid on timber harvested from State Forests, but not from private or communal lands.

A major component of GFC’s monitoring practices is the log tracking system introduced in 2000. GFC assigns a two-part tag to every tree approved for harvesting: one part is placed on the stump of the felled tree, and the other is placed on the log, where it stays until the

log is processed. This allows the origin of every log to be traced. The system applies to all operations in State Forests, Amerindian titled lands and other private properties and provides data on the location, scale and legitimacy of forest operations.

There are three main concerns about chainsaw milling: illegal operations; aligning chainsaw-milling practices with other sustainable forest management (SFM) initiatives; and the dependency of communities on chainsaw milling.

### The chainsaw-milling subsector in Guyana

Chainsaw milling technology is widely used in small-scale logging operations in Guyana. There is no provision for regulating the model or size of saw. Many local chainsaw operators use either the Stihl 070 or Stihl 051, equipped with a special ripping chain for chainsaw milling. Some operators use Alaskan board mills in conjunction with a Stihl 070 chainsaw, but by and large board mills are not popular. Trees are selected, felled, bucked to length and ripped to produce mostly boards and planks, but occasionally scantlings and squared lumber of size (width and thickness) including 50 cm x 75 cm; 50 cm x 100 cm, 75 cm x 7 cm, with lengths from 2.75 m. Studies indicate that most chainsaw millers achieve recovery rates between 19% and 44% (Benn 2008). Usually, logs are ripped at the stump site; the lumber is transported to the roadside and then loaded on to a semi-trailer pulled by a small farm tractor.



### Drivers of chainsaw milling in Guyana

The availability of forest resources and the scope to make a reasonable living from chainsaw milling explain the popularity of chainsaw milling in Guyana. In addition, there are few if any viable livelihood alternatives in rural areas. In many rural forested areas, peoples' involvement in agriculture is seasonal and only at a basic subsistence level due to poor quality, acidic soils. Many of them wish to complement agriculture with earnings from other activities.

There is considerable scope for profits in chainsaw milling due to a strong demand for lumber. Chainsaw millers supply domestic markets with a wider range of species than sawmills. Their lumber is less expensive although the quality is lower. Chainsaw millers are also able to meet the local demand for high-value commercial species by small timber-based enterprises, such as furniture producers. Many owners of conventional sawmills purchase chainsawn lumber and reprocess and export it with lumber from their sawmills.

### Impacts of chainsaw milling in Guyana

The GFC reports that 24,126 persons are directly employed in the forest sector and that 8,000 of them (about 33%) are engaged in chainsaw milling on SFPs (GFC 2009). Some 40 communities in Guyana are involved in chainsaw milling; engaging up to as many as 80% of the residents.

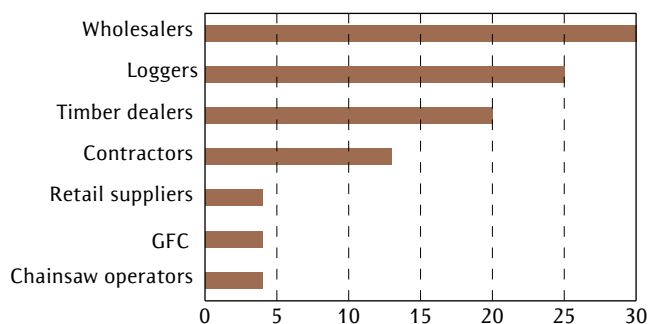
The profitability of chainsaw milled lumber depends on several factors, including type of transport, fuel costs, regional prices for supplies and distance from the point of harvest-

ing to the point of sale; it may vary between loggers by as much as 20%. The proportion of financial benefits in the supply chain increases along the chain from primary producer to retailer (Figure 2).

**Figure 2. Distribution of chainsaw milling revenue (%)**

Source: Clarke 2009

Note: Wholesalers are bulk suppliers of fuel, rations and other field gear; loggers actually own the forest concession and are responsible for the payment of forest fees; timber dealers purchase timber from SFP owners for resale; contractors provide chainsaws or offer to extract timber; chainsaw operators are the persons who actually produce the lumber.



The environmental effects of chainsaw milling (compared with conventional logging) in Guyana still need to be determined. Commonly reported negative impacts relate to improper felling of trees due to lack of knowledge of directional felling practices and the under-utilization of trees felled. On the positive side, chainsaw milling has a lower impact on the forest due to the lighter equipment used and the absence of skid trails (some old skid tracks are used by tractors pulling lumber).

Chainsaw milling operations' compliance with health and safety and other labour regulations has traditionally been poor. Traditionally, monitoring of occupational safety and health matters in forestry operations — where it occurs — tends to be carried out on larger companies, who manage significantly more resources and are more inclined to seek training for their forest management systems in support of third-party certification.

### Conclusions and discussion

It is clear that the transition to a new technology by small loggers and communities in the 1970s and the subsequent uptake by new entrants in the subsector had far greater implications than anticipated at the policy level. The technology has emerged as a major pillar of rural livelihoods.

In some communities, the earnings from chainsawn lumber have become the primary source of income, superseding that from more traditional practices such as farming. Many communities now depend on chainsaw milling. Donors have been helping communities to optimize the use of their resources through various kinds of technical assistance, targeting operational issues such as occupational health and safety and improved milling practices as well as strategic issues such as community development plans. The development of SLAs has helped by affording local people legal access to forest resources and improving the livelihoods of SLA members.

At the policy level, three primary concerns prevail. The potential for illegal operations continues to exist in spite of the GFC's efforts. The main drivers of illegal operations are discontent with the resources allocated, the existence of protected forests, attractive

prices for lumber, and simple greed. The geographic extent of chainsaw milling operations is also a challenge for the GFC. The presence of illegal timber on the market will be a major blow to the marketing efforts of loggers, enterprises and communities, who are striving to conduct their operations in a legal and sustainable manner.

The second concern relates to commitments between the Government of Guyana and international stakeholders on issues of climate change, the conservation of biodiversity and protected areas. It will be a major challenge to ensure that all chainsaw milling practices meet the SFM standards agreed to by stakeholders. How can such a diversity of actors and the businesses associated with them share the responsibility for forest management standards?

The strong dependence of communities and SLAs on chainsaw milling is the third cause for concern. There is no guarantee that forest resources can meet the (long term) needs of the existing number of operatives and their dependents and some restrictions on the scale of logging might be necessary to bring it to sustainable levels. The fallout from such restrictions and the need to seek out alternative livelihood options are major challenges.

Guyana has embarked on a Low Carbon Development Strategy (LCDS), making a major contribution to climate change mitigation generally and SFM in particular (Government of Guyana 2010). The policy approaches underlying forest management strategies are set out in this strategy. One consequence of the LCDS is that the GFC will demand more responsible behaviour from all loggers, including chainsaw millers. Policy-makers have fostered chainsaw milling due to its positive benefits for rural livelihoods and its alignment with national poverty reduction goals. However, policy-makers and stakeholders also want chainsaw milling practices to be in line with approved SFM practices. Chainsaw operators will be expected to produce timber legally, carry out a complete pre-harvest inventory of areas allocated to them, and use reduced impact logging techniques.

Fortunately, since 2007 the Guyanese forestry sector has been benefitting from an EU-Tropenbos International chainsaw milling project, "Developing alternatives for illegal chainsaw lumbering through multi-stakeholder dialogue in Ghana and Guyana." The project is the first to study in detail the nature of chainsaw milling in Guyana and engage all stakeholders in dialogue about the major issues.

New forestry legislation and the current review of the national forest policy statement are expected to formalize the recognition by and integration of chainsaw milling practices in the forestry sector. The multi-stakeholder dialogue sessions currently underway offer chainsaw millers major opportunities to contribute to local forest policies.

### **For more information**

See [www.forestry.gov.gy](http://www.forestry.gov.gy) and [www.chainsawmilling.org](http://www.chainsawmilling.org).

## References

- Benn, V. 2008. Diagnosis of Chainsaw Milling in Guyana. Iwokrama International Centre. Georgetown, Guyana.
- Clarke, G. 2009. Case Study on Chainsaw Milling in Guyana. Forestry Training Centre Inc., Georgetown, Guyana.
- GFC (Guyana Forestry Commission). 2010. *Forestry Sector Information Report: Annual Review 2009*. Georgetown, Guyana: GFC.
- GFC (Guyana Forestry Commission). 2009. *Forestry Sector Information Report: Annual Review 2008*. Georgetown, Guyana: GFC.
- GFC (Guyana Forestry Commission). 2007. Forestry in Guyana 2007. GFC Fact Sheet, GFC, Georgetown, Guyana
- Government of Guyana. 2010. *A Low Carbon Development Strategy: Transforming Guyana's Economy while Combating Climate Change*. Georgetown, Guyana: Government of Guyana.
- Kerrett, R. and M. Wit. 2009. *Chainsaw Milling in Guyana: A synopsis of the issues*. Wageningen, the Netherlands: Tropenbos International.
- Lewis, L. and G. Hodge. 2008. Background and Impacts of Chainsaw Milling in Guyana. Forestry Training Centre Inc. Georgetown, Guyana.
- Vieira, V.S. 1980. *Logging in Guyana and Considerations for Improvement*. Georgetown, Guyana: GFC, 88 pp.