

# The potential of chainsaw milling for improving rural livelihoods in Uganda and DR Congo

*This policy brief is aimed at forest policy shapers in East Africa. It results from studies carried out in Uganda and eastern DR Congo, part of a wider project including Kenya and a global review presented in separate briefing papers. Chainsaws are widely used in the region ‘freehand’ to process logs into timber, and this undeniably contributes to rural livelihoods though often in an illegal context. This raises questions with regards to the appropriateness of prevailing laws and their enforcement. Impacts are considered alongside the use of pitsaws and chainsaw milling attachments.*

## The legal context

In Uganda, as chainsaws are used in illegal felling and log conversion in national parks and gazetted forest reserves, their ownership was restricted and freehand log milling is illegal (National Forestry and Tree Planting Act, 2003). However, chainsaw milling is also used for legal activities such as ‘mopping up’ in logged areas and converting scattered farm trees. Now it is permitted under license if milling attachments are used.

In DR Congo chainsaws are widely used for converting trees into timber. Law enforcement is basically non-existent or easily corrupted. For instance, that all trees belong to the state (Article 7, Code Forestier, 2002) is rarely enforced. Chainsaw milling is technically not illegal, but should not exist as only concession holders can fell trees for further processing in their own sawmills. For taxation purposes management of concessions requires pre- and post-felling volume assessments with further monitoring at the sawmill, so there is no provision for converting logs in the field.

In East Africa there is a discrepancy between what is legally prescribed and what happens on the ground. Laws may not apply to all forest types and confuse rather than clarify issues. For example, although Uganda recently reviewed its forest laws they only apply to forests under state control, with two thirds of all forests outside forest law where owners (private, custodial, communal) can *de facto* do whatever they like. This is not to say that the law is not enforced, but the myriad of legal settings makes it difficult to create clean cases in court and the system is prone to corruption. Thus illegal operators have few problems having timber declared as coming from private land.

## Who are the chainsaw millers?

Throughout the region, self-employed or contracted tree cutters who used to rely on pitsawing are increasingly involved in freehand chainsaw milling both on farms and in forests. Chainsaws may either be operator-owned or much more likely rented (e.g. for US\$20-25 per day in DR Congo, without bar or chain). Operators usually start out working in logging gangs where they acquire chainsaw skills. However, no chainsaw user spoken to in 2005-06 had any formal training, partly explaining poor handling, posture and high operational risks taken.



*Safety is not a consideration in freehand milling*

In both Uganda and DR Congo there is little precaution for safety and ergonomics with chainsaws or small sawmills, with personal protective equipment usually completely absent. In freehand milling only the tip of the bar is used with all the associated risks that this entails, and the removal of chain depth gauges to cut more rapidly further aggravates the risks. These also give the ‘trademark’ markings that clearly differentiate illegal ‘freehand’ milled timber from any other source.

## The issues

Chainsaw milling clearly offers increased livelihood opportunities for the rural poor and increased wood availability, particularly in agricultural areas.

Awareness raising within governments is required to promote the use of milling attachments for their social, economic and environmental benefits.

Chainsaw milling is an aspect of forest policy development that needs urgent attention, and legal reform may be necessary to decriminalise it.

Controlling use of chainsaw mills poses challenges for governments due to their portability, so regulation at point of sale may be an appropriate strategy.

Regional action is necessary due to the extent of cross-border trade.

Governments need to consider the need for training chainsaw operators in safe and efficient practices.

## Appropriate processing in forests.....

The least capital intensive means of converting timber in the region are pitsawing and freehand chainsaw milling, with the recent arrival of chainsaw milling with frames or other attachments.

Pitsawing is a simple and robust technology adapted to where machine operation skills are lacking, capital is difficult to access or where the cost of renting chainsaws is high. It creates more local employment per cubic metre than other technologies but still requires certain skills to attain satisfactory quality. Transferring logs onto a scaffold is very dangerous, whereas digging pits reduces the risk of accidents but increases costs.

Freehand chainsaw milling requires more capital than pitsawing. It is the most dangerous possible way of milling timber especially when chains have their depth gauges removed. Technical skills are demanding, requiring skilled operators to avoid tapering boards and scarred surfaces, and the impact on employment is more limited than in pitsawing.



*Frame milling in DR Congo*

The cost of a chainsaw milling attachment may be up to 50% of the cost of a chainsaw, but its use increases overall recovery rates, output, and the quality of the timber produced, so reducing the overall costs per cubic metre of timber sawn. Frame milling is also safer and more ergonomic than pitsawing or freehand chainsaw milling. However, it requires more skill in operating a chainsaw and managing a work team, and to be successful requires a clear understanding of markets to gain benefits from better quality products. From an environmental point of view, the more limited the resource the more feasible will be investments in chainsaw milling attachments that permit higher recovery rates and reduce per unit costs. These attachments are also advantageous as they allow cutting of small diameter logs with reasonable recovery.

## .....and outside forests

Chainsaw milling with milling attachments can also contribute to improved utilisation of scattered trees and trees on farms. Recovery can be improved and the risk of injury reduced, providing income and a supply of affordable timber to local communities, adding value to trees and making them or new plantings more valuable to owners. It is increasingly clear that chainsaw milling is appropriate in such situations and can help realise economic, social and environmental goals.

### Changing policies?

Policies are now changing within the Ugandan National Forestry Authority (NFA), and trials are currently being undertaken supporting the view that milling attachments have a valuable potential role. Their use is now permitted on state or private land provided the owner registers with the NFA and pays due fees and royalties. Their use should also be promoted in DR Congo where they would have similar benefits.

The criteria for permitting a certain type of chainsaw mill are the evenness and smoothness of the cut and improved recovery. Reduced injury is also important. Such innovation is to be applauded, but for maximum benefits, it should also be undertaken in parallel with other changes such as local training, applied research and further policy studies.

### Recommended action

Define appropriate policy frameworks to encourage use of mobile sawmilling equipment via consultation with stakeholders, including manufacturers, importers and distributors of such equipment.

Introduce a licensing system for chainsaw ownership to reduce the risk of illegal cutting. This is considered feasible as there are currently very few companies importing chainsaws and associated equipment.

Look to share experiences with other East African countries, feeding into regional policy processes on forest governance, e.g. Africa FLEG.

Support applied research on cutting techniques to increase recovery, and developing alternative chain lubricants from plant origin.

Instigate a range of field training courses on chainsaw safety, use, maintenance and milling for chainsaw and sawmill owners and operators.

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