

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

European Commission programme on Tropical Forests and other Forests in Developing Countries

Nkawie District Level Multi-Stakeholder Dialogue Five (DLMSD 5)

Minutes



Date: 6th September, 2011

Venue: District Assembly Hall Annex (Agric Fair Site)

By Emmanuel Fosu and Evans Sampene

Members Present

<u>Name</u>	<u>Stakeholder Group</u>
1. Jacob Odame	Fire Service, Nyinahin
2. Kwabena Apau	Carpenter, Apenamadi
3. Kweku Kyere	Chainsaw Operator, Apenimedi
4. Kwadwo Nsiah	Carrier, Apenimedi
5. Kofi Acheampong	Chainsaw Operator, Apenimedi
6. Bernard Bekoe	Ghana News Agency, Nyinahin
7. Faustina Adjei	Ghana Immigration Service, Nkawie
8. Nsiah James	National Forest Forum, Nkawie
9. Prosper Adeliwini	District Assembly, Nkawie
10. Paul K. Gyasi	Community Forest Committee., Baniekrom
11. Tekyi De-Graft	Community Forest Committee, Akota
12. Nasimong Solomon	Community Forest Committee., Akota
13. Dickson Kusi	Community Forest Committee, Akota
14. Nicholas Korley	District Assembly, Nkawie
15. Lord Marfo	Lumber Dealer, Abuakwa
16. Manu Joseph	Farmer, Kyekyewere
17. Nana Yaw Owusu	Farmer, Kyekyewere
18. Mark Manu Aidoo	Forest Service Division, Nkawie
19. Nana Kweku Tutu II	Traditional Authority, Nkawie
20. Eric Nyame	District Assembly, Nyinahin
21. Jephthan Kwame Sarfo	District Assembly, Nkawie
22. Abu saddick	Chainsaw Operator, Abuakwa
23. Mavis Akua Serwa	Forest Services Division, Nkawie
24. Enoch Boateng	Forest Services Division, Nkawie
25. Getrude Serwa Quaning	Forest Services Division, Nkawie

In Attendance

1. Mr Mark Aidoo Gyemfi	Incoming Assistant District Manager, FSD
2. Mr. Lawrence Fosu	Assistant District Manager/CFW, FSD

Project Secretariat

1. Emmanuel Fosu	Project Assistant
2. John Amonoo	Community Forestry Advisor

Agenda:

To seek stakeholders' inputs into the policy proposal aimed at the supply of legal lumber to the domestic market

Acronyms

- CFA Community Forestry Advisor
- CFC Community Forestry Committee
- CFW Community Forestry Worker
- CSM Chainsaw Milling
- DCE District Chief Executive
- DLMSD District Level Multi-stakeholder Dialogue
- FSD Forestry Services Division
- MSD Multi-Stakeholder Dialogue
- SWOT Strengths Weaknesses Opportunities and Treats
- VPA Voluntary Partnership Agreement

Proceedings	Action
<p>1.0 Opening The meeting started at 10:20 am with a prayer by Solomon Nasimong, a CFC member from Akota.</p> <p>2.0 Introduction The CFW, project staff and the MSD members introduced themselves. The new CFW (Mr. Mark Aidoo Gyemfi) for Nkawie and the new CFA (Mr. John Amonoo) were also introduced to members.</p> <p>2.1 Purpose of the meeting The Project Assistant told members that the meeting was to give them the opportunity to make inputs into the draft policy proposal aimed at supplying legal lumber to the domestic market. Members were also to develop strategies to address the drivers of illegal CSM.</p> <p>3.0 Reading and acceptance of previous minutes Copies of minutes of the previous meeting were distributed to all members. The CFW read the minutes and corrections were made. Mr. Bekoe from the Ghana News Agency moved for the acceptance of the minutes and was seconded by Lord Marfo, a lumber dealer from Abuakwa.</p> <p>4.0 Feedback from national MSD 5 Mr Nsiah from the Non-Formal Education Unit of the District Assembly gave a summary of what transpired at the national MSD 5.</p> <p>5.0 Group work on the draft policy proposal The CFW explained the context within which the policy proposal was drafted. He said the proposal is to operationalize the agreed policy option two which aims at ensuring the supply of legal lumber to the domestic market. After that, he took the members through the drivers of CSM (Annex A) and the outcomes of the SWOT and Cost-Benefit analysis of policy option two (Annex C).</p> <p>Members were put into four groups. The groups were tasked to discuss the drivers of CSM and develop strategies to address them based on background information given and also bearing in mind the follow issues:</p> <ul style="list-style-type: none"> • The domestic market requirements of the VPA; • Forest Degradation; • Population growth and rapid infrastructural development in Ghana, and, • Rural unemployment. <p>Two groups discussed the same issues.</p>	

5.1 Group Work Presentation

Each group presented their results after which members asked questions and made inputs. Outcomes of group work in Annex B.

6.0 Closing

The CFW on behalf of the project team thanked all members for attending the meeting. A representative of the DCE thanked all members for their interest in the MSD process to find a lasting solution to the illegal CSM menace. He said the district is going through a number of problems due to illegal CSM, and the district assembly is happy the project is helping to address the issue by involving all stakeholders, especially chainsaw operators. He expressed his hope that the project will yield the desired result.

A closing prayer was offered by Joseph Manu, a farmer from Kyekyewere. The meeting formally ended at 3:15 pm.

Signed: 

Emmanuel Fosu (Recorder)

Signed 

John Amonoo - for Chairman

Annex A: Guiding question for group discussions to develop strategies to address drivers of illegal CSM

Question: *In the context of the agreed policy direction (policy option 2), the current situation (forest degradation, population growth and rapid infrastructural developmental in Ghana), develop strategies to address the under listed drivers of illegal CSM in Ghana:*

- Domestic market demand
- Rural unemployment
- Weak institutions
- Inequity in access and benefit sharing (tenure)
- Corruption
- Ambiguity in the law banning CSM
- Easy entry into the trade
- Lack of political will to enforce the ban
- Political interference
- Cross border trade
- Lack of sustained public awareness creation
- Appropriateness of CSM technology in areas where it is not economical for conventional logging
- Lack of proper means for securing protected areas

Annex B: Outcomes of group discussions.

Strategies for addressing drivers of illegal CSM

1. Domestic market demand

- Develop and introduce artisanal milling models with regulations to produce lumber for the domestic market.
- Review the existing policies/laws to ensure that sawmills supply the domestic market with at least 40% of quality lumber.
- Strengthen the ban on chainsaw milling
- Facilitate establishment of lumber depots in strategic locations for supply of lumber to the domestic market.
- Develop and rollout an aggressive tree planting programme.
- Import logs for processing

2. Rural unemployment

- Involve local people in developing and promoting viable rural base alternative livelihoods for rural people
- Build capacity of rural people to be able to implement sustainable alternative livelihoods.
- Develop artisanal milling as a viable rural base enterprise
- Encourage timber Companies to employ workers (especially unskilled labour) from rural communities where they are sited.

3. Weak institutions

- Motivate traditional authorities and other institutions to collaborate with the FC/FSD to manage the forest.
- Enhance capacity of frontline offices and officers (districts)
- Increase the number of district offices

4. Inequity in access and benefit sharing (tenure)

- Develop a legal and regulatory framework to enable artisanal millers have access to timber resource
- Review policies on benefit sharing to include farmers/landowners to enable them protect trees on farms.
- Sensitize forest fringe communities on the procedure for harvesting on-farm trees.
- Ensure that SRAs are paid to communities before companies are allowed to harvest.
- Develop clear and understandable laws/policies regulating access to timber for domestic use by local people.

5. Corruption

- Create awareness on the consequences of corruption on Ghana's forests.
- Motivate and involve local people in monitoring
- Improve condition of service for, especially frontline staff of organisations concerned with forest management and monitoring.
- Punish staff involved in corrupt practices

6. Ambiguity in the law banning CSM

- Develop simple, clear and understandable laws/policies to regulate artisanal milling concept.
- Create awareness on the laws/policies

7. Easy entry into the trade

- Develop regulations to guide the setting up artisanal milling enterprise
- Involve local people to monitor and arrest illegal millers
- Establish platforms to educate, discuss and address problems concerning artisanal milling

8. Lack of political will to enforce the ban/Political interference

- Enhance the capacity of the FC to enforce forest laws/policies effectively.
- Civil society and media should name and shame politicians who will interfere in forestry issues.
- Lobby parliament to enact laws banning politicians in interfering with appointments and promotions in the forestry sector

9. Cross border trade

- Ban cross boarder lumber trade with stiffer punishment for offenders.

10. Lack of sustained public awareness creation

- Lobby to discuss forestry issues on national TV and key FM stations.
- Involve all stakeholders in creating awareness and education on the artisanal milling concept.

11. Appropriateness of CSM technology in areas where it is not economical for conventional logging

- Artisanal milling concept will address this driver.

12. Lack of proper means for securing protected areas

- Enhance the capacity of frontline officers of FC to protect reserves.
- Educate forest fringe communities on their role and benefits in collaborating with FC in securing protected areas.
- Encourage communities to establish dedicated forests

ANNEX C SCENARIO AND COST BENEFIT ANALYSIS OF PROPOSED POLICY DIRECTION FOR THE SUPPLY OF LEGAL TIMBER TO THE DOMESTIC MARKET

EXECUTIVE SUMMARY

Introduction

Much of Ghana's forest sector problems can be traced to illegal chainsaw lumber production which presently stands at about 2.5 million m³ accounting for 80% of total supplies on the domestic market. This has contributed significantly to forest depletion and decline in the forest sector's contribution to GDP from about 6% in the 1990s to roughly 2%. Price distortions on the domestic market, largely caused by over concentration on the export market for better turnovers and an unwillingness to sell grade lumber on the domestic market by the formal sector have created a large supply gap which has been met largely through illegal chain saw lumber supplies. Attempts to regulate forest use through enforcement of legislation have not been successful but rather generated a lot of conflicts and undermined good forest governance.

Under the VPA with the European Union Ghana has made a commitment to ensure that legal timber is not only traded on the export market but on the domestic market as well and is therefore seriously looking for options for supplying legal timber to the domestic market. The EU is supporting the Government through the NREG Programme and a Tropenbos International Ghana led project to develop alternatives to illegal chainsaw milling through a multi-stakeholder dialogue process backed by scientific research. These initiatives have developed the following three policy directions as a first step towards formulating specific strategic options for dealing with the problem:

1. Sawmills to supply the domestic market with legal timber obtained from sustained yields;

2. Sawmills and artisanal millers¹ supply the domestic market with legal timber obtained from sustained yields ; and
3. Artisanal millers supply all lumber required by the domestic market while sawmills focus on export, in keeping with the legal timber framework.

However the current, stakeholder understanding of the costs and benefit implications of prospective intervening measures associated with these policy directions is scanty. Therefore this research was commissioned to provide a cost benefit analysis in order to inform policy decision on the most appropriate policy strategy.

The analysis has been carried out at the backdrop of the following forest sector conditions: weakness in forest regulation and enforcement associated with rent- seeking behaviour among public officials; a high rate of illegal logging by both formal and informal forest businesses; a likely future decline in resource availability; increasing share of harvest by a few but large scale companies and a shrinking forest industry. In addition, inadequate legislation has worked against community access to timber: in particular, the non-existence of timber felling rights to the informal sector, farmers' tenurial rights to naturally regenerated trees on farms and failure of distributed forest revenues to trickle down to forest fringe communities. These create a disincentive for local support for enforcement of forest laws and actually encourage farmers to do business with illegal CSM operatives who offer them better deals.

The Methodology employed in the research has four key components, viz: Developing the critical parameters for analysis through stakeholder consultation, literature review, and secondary data collected from a number of recent empirical studies in the sector, stakeholder consultation and modelling. The financial and economic modelling of the formal and informal wood businesses and state revenues and costs was done to identify and analyze the impacts of key policy scenarios (as measures) under each of the three policy options (as strategies). The model was designed on the basis of key assumptions consisting of researched 2007 indicators. Secondly, a unit cost analysis of business

¹ Artisanal milling is the use of small-medium motorized mobile milling equipment capable of recovering **at least 50%** dimension lumber from logs purposely for the domestic market. Artisanal mills should include all bush mills, lucas mills, wood mizer sand mobile dimension mills but exclude any form of chainsaw machines (source: TIDD/TBI discussion paper on domestic supply of timber)

operations for three categories of producers was constructed using industry source data. These two compartments were combined to produce complete value chains for the producers comprising total volumes and values of timber inputs, domestic and export sales values, cost of timber inputs, other costs and profits. Below the business operating line, the model recalculates the components of forest revenues and other payments to stakeholders and cost of institutions. The weaknesses of the model are that it is not designed to forecast level of demand or the degree of substitution of imports for domestic supply. Levels of demand are determined outside the model by policy; prices are also imposed on the model and not determined by it. A full investigation of environmental impacts of the options has not been included in the research work.

Scenarios and key assumptions for the Cost-Benefit Analysis

In order to proceed with the analysis, four scenarios departing from the baseline (business-as-usual) situation were developed under the 3 policy options:

1. Sawmills only supply legal lumber to the domestic market (policy option 1)
2. Sawmills and artisanal millers supply legal lumber to the domestic market under conditions of a lumber export ban (policy option 2)
3. Sawmills and artisanal mills supply legal lumber to the domestic market under a regime of domestic harvest quotas and fiscal incentives (policy option 2)
4. Artisanal millers only supply legal lumber to the domestic market (Policy Option 3)

The Baseline Model consists of a progressive shift of policy from the “Business-As Usual” conditions of 2007 to a full implementation by 2015 of legal timber enforcement under VPA. No other major policy reform is assumed to occur under this model. Reference to the 2007 baseline, sawmills consumed about 910,000m³ of timber in 2007 and produced a total of 360,000 m³ of lumber, of which about 150,000m³ was disposed on the domestic market.² CSM produced an additional 497,000 m³ of lumber. In terms of business profits, export markets, with better prices (US\$425 per m³) than the domestic (US\$180 per m³) provided better business opportunities in 2007 for sawmills to return business margins of between 9% and 14%. CSM was a still better business option with a return of 28%, twice that of the integrated mills

In terms of forest taxes and other transfer payments, Sawmilling contributed about US\$8 million in stumpage fees and export levies in 2007. This was equivalent to US\$9.50 per m³ forest tax. CSM

² Recovery from sapwood is a major component of joinery works in the informal sector. Joinery for low cost housing and furniture and joinery for local food bars depend on this material.

informal payments were also equivalent to about US\$5.5 per m³ of input used. CSM contributed to livelihoods to the tune of some US\$130 million and about US\$12 million to developments in Districts. The integrated sawmills are reported to make informal payment amounting to US\$8/m³ of timber harvest and may also have contributed about US\$7 million in informal payments to traditional authorities and their subjects through logging activities. They would also have made additional cash payment of about US\$400,000 in Social Responsibility Agreements.

In terms of employment, direct employment in sawmills was about 11,500 persons. In contrast, CSM employed 130,000 persons. These consisted of 70,000 direct employments in production.

The cost-benefit analysis of the scenarios was informed by key assumptions that were maintained as constants.

1. Even though the current annual allowable cut is fixed at 2 million cubic meters, a VPA Assessment Study put the sustainable annual harvest limit tentatively at 700,000m³ (Mayers et al. 2008). This study prioritized sustainability in the analysis and thus maintained this figure as the annual sustainable cut (ASC) awaiting any further national inventory that might provide a different estimate.
2. Wood sourced from plantations and underwater reserves are not factored into the analysis
3. Based on recent national market survey, the domestic demand for lumber is estimated as 600,000m³
4. Based on comparative study of different milling techniques which gave an average recovery of 54.5%, it is taken that a milling recovery of 55% should be taken for the scenario analysis.
5. It is assumed that given the history and politics around determination of stumpage regime in Ghana, the stumpage fees are retained at their 2007 level estimate of US\$8.44/m³
6. It is assumed that domestic prices of lumber will improve by increasing from about US\$180 to US\$310.

Results of the Cost Benefit Analysis and Modeling

Based on unit production costs, informal payments, institutional costs, predicted resource availability and production levels, export-domestic distribution of production, pricing, employment prospects and prevailing fiscal fees, the various scenarios generated different levels of net financial and economic benefits. The situation under the different scenarios in terms of availability of resources (log inputs), domestic lumber volume and export volume is summarized in table 1.

Table 1 Log input and domestic lumber production for both domestic and export markets under different scenarios

	Log input from natural forest (('000) m ³	Domestic lumber volume ('000) m ³			Export lumber volume('000) m ³	Critical condition
		Sawmill	artisanal	chainsaw		
Baseline	2550	150	-	497	210	
Scenario 1(policy option 1)	409	600	-	-	224	1,091,000 m ³ of round wood imported
Scenario 2 (policy option 2)	562	183	114	-	-	
Scenario 3 (policy option 2)	562	88	135	-	91	

Reduced future harvest levels, due to continued depletion of the resource means future domestic supplies of lumber to the domestic market, including large proportions of Lesser-Used and Lesser-Known Species, will be inadequate to meet the current estimated demand of 600,000m³. It will therefore be necessary to either import logs (in the short term) for domestic processing or lumber. Importation of logs for processing for the domestic market will be unprofitable for sawmills. Consumers will depend for at least 50% of demand on importation of lumber and also face higher price in the order of US\$310/m³. Thus domestic price are likely to rise up to the import parity price level.

Declining resource volumes will also negatively affect both State revenues and other payments to forest communities (represented by Traditional Authorities, District Assemblies, communities and farmers). This could reduce opportunities for creating incentives for protecting the remaining timber trees in off-reserves and promoting sustainable forest management in forest reserves.

The economy will benefit from engagement of Artisanal Millers in production of lumber for the domestic market as they show potentials for creating value added in processing. Potential employment levels will

continue to depend on availability of timber. Still within this limit, increased large-scale sawmill costs in the future threaten the realization of this potential limit of employment. For AMs, they will only be able at the maximum provide direct employment for about 21,000, compared to the 130,000 under CSM. This is also a challenge. Interventions in minimizing adverse impact of reforms may have to pay attention to both CSM and the formal sector.

The results of the financial, economic and social cost benefit analysis (CBA) conducted using the broad spectrum of research results and in particular a result of the model scenarios is summarized in table 2:

Table 2: Cost benefit analysis results of policy options: NPVs discounted @ 20%, (US\$,000)				
	Baseline	Sc.1 (Option 1)	Sc.2 (Option 2)	Sc.3 (Option 2)
Financial	895,290	-311,286	808,417	846,879
<i>Economic</i>	<i>125,016</i>	<i>-513,683</i>	<i>125,630</i>	<i>203,048</i>
Incremental NPV of options (over baseline), US\$,000				
Financial		-1,206,576	-86,873	-48,411
<i>Economic</i>		-638,698	615	78,032

A highly positive financial return and a contrasting significant economic loss in the baseline case confirm the existence of the situation under which policy makers do not address the issue of economic pricing of timber and as a result processors do not have the incentive to improve efficiency. Informal payments from CSM operations sustain the operation which is inefficient. While these create economic costs which are not considered by private operators, failure of policy to correct the wrong market signals end up putting money in private pockets.

In all the scenarios, it is the third that promises maximum impact of reforms. It shifts policy towards allowing greater roles in the markets for artisanal millers as micro enterprises. Comparing the financial gains in Scenario 3 to the Baseline, there is a financial loss of about US\$ 48 million, but an economic gain of about US\$78 million (**Table 2**). This implies in the shift of policy choice, some stakeholders are bound to lose. However, there are opportunities and good justification for the state to invest in mitigation measures, using the economic gains, to turn the outcome into a “Win-Win” situation. A comparison of the options using Option1 as the standard clearly shows that scenario 3 (of option 2) is by far the most economically efficient policy choice (**Table 2**). Scenario 3 also uses a deliberate state policy

to positively influence access to forests by improved artisanal millers. It should be noted that the CBA results reveal potential impacts. The numbers do not suggest the forest economy is out of the woods. The models show that efficiency and market pricing need to work simultaneously to achieve the Scenario 3 results.

Reflecting on the sustainable harvest of 718,000 in relation to an AAC of one and two million cubic meters, all things being equal, table 3 shows how lumber production by the various players under conditions of scenario 3 will look like.

Table 3: lumber production by various producers under scenario 3 conditions at different annual allowable cut levels

Lumber Supplier	Mill input RWE (m3)	Share	Lumber Production
AAC: 718,000 m3			
Integrated Mill	33,000	8%	18,150
Non-Integrated Mill	127,714	30%	70,243
Artisanal Mill	269,033	62%	134,577
TOTAL	429,747	100%	222,970
AAC : 1000000 m3			
Integrated Mill	45,905	8%	25,248
Non-Integrated Mill	178,271	30%	98,049
Artisanal Mill	374,928	62%	206,211
TOTAL	599,105	100%	329,508
AAC : 2000000 m3			
Integrated Mill	91,810	8%	50,496
Non-Integrated Mill	356,542	30%	196,098
Artisanal Mill	749,857	62%	412,421
TOTAL	1,198,209	100%	659,015

Conclusions and Recommendations

Conclusions

The analysis suggest that any possible reforms to supply legal timber to the domestic market at sustainable levels must be done with difficult decisions, both politically, economically and socially speaking

Even though the scenario where both sawmills and artisanal mills produce for both the domestic and export market under harvest quotas and fiscal incentives promises to be the most economically efficient option, the choice comes with some costs.

Under the best scenario, supplying the domestic market with legal timber will require that:

- ❖ integrated mills, non-integrated mills and artisanal mills are given 163000, 128000 and 269000 cubic meters of timber resources from the forests
- ❖ only integrated mills should be allowed to export lumber export at a level not exceeding 91000 cubic meters
- ❖ Only 243000 cubic meters out of the 600,000 cubic meters (40%) of the domestic demand can be supplied from natural forests.
- ❖ Fiscal incentives must be developed to enable domestic market price to ‘jump’ to USD 310/m³
- ❖ Institutional costs for forest management and monitoring should not exceed levels reached during VPA negotiation
- ❖ Chainsaw operations are fully cramped down and that about some 20,000 affected operators are possibly integrated into artisanal milling sub-sector to fill the job opportunities that will be created by it

Recommendations

There is the need for political decision to shift timber harvest volumes from natural forests from the current 2 million to about 700,000 cubic meters in order to operate at sustainable levels

There is the need for industrial standards to be developed and the industry retooled to build their capacity to recover at least 50% of lumber from round logs.

Provide both social and economic incentives to support full enforcement of the chainsaw ban
Introduce fiscal incentives such as reduction of stumpage for mills producing for local market, use of export quotas on traditional species and retention of special value added tax for tertiary processors.

It is the scenario where sawmills and artisanal mills should supply legal lumber to the domestic market under a regime of domestic harvest quotas and fiscal incentives that promises maximum impact of reforms.

SWOT ANALYSIS OPTION: DOMESTIC LUMBER SUPPLIED BY SAWMILL AND ARTISANAL MILLS ONLY

Options	Strengths	Weaknesses	Opportunities	Threats
<p>2 (Domestic lumber supplied by sawmills and artisanal millers)</p>	<ul style="list-style-type: none"> ▪ Industry in Ghana are currently retooling to check inefficiency ▪ Funds are available under NREG ▪ Collaborative resources Management initiatives in Ghana ▪ Existing institutions to monitor harvesting and enforce laws (FSD, TIDD, Immigration Service etc) ▪ Labour groups and Associations ▪ CFC's and unit committees to support monitoring ▪ Current initiatives that supports sustainable forest management (REDD, VPA) ▪ Access to timber resources ▪ Available labour force , skills logistics and technology ▪ Ability to meet local lumber demand ▪ Availability of market ▪ Capital base available ▪ Availability of forest resources. ▪ Favourable climate conditions. ▪ The blend of manual and technological capacities to produce effective and efficiently. ▪ Will be able to produce 	<ul style="list-style-type: none"> ▪ Community unit committees are not functional. ▪ Resource monitoring agencies are under resourced ▪ National data capturing system is weak. ▪ Difficulty in monitoring the operation of the two parties. ▪ Lack of adequate financial resources for chainsaw millers to acquire new machines ▪ Lack of expertise in the business by chainsaw millers ▪ Ability to pay for cost of improvement ▪ Low capacity in terms of supply ▪ Unskilled labour by chainsaw operators ▪ Obsolete machinery on the part of sawmillers ▪ The blend may lead to corrupt practices. ▪ Most of artisanal millers use human beings to convey lumber to accessible place which is very risky ▪ Internal conflict ▪ Conflict between sawmillers and artisanal millers 	<ul style="list-style-type: none"> ▪ Improved efficiency from free hand chainsaw operation to artisanal milling ▪ High Demand (available Market) ▪ Formation of associations (CSM) to enhance monitoring and sustainable forest management ▪ Modern technologies available ▪ Provide secured employment for fringe communities. ▪ Reduction in chainsaw related conflicts and associated risks ▪ Improved community livelihoods ▪ Availability of alternative livelihoods. ▪ Increased revenue to government (tax, stumpage etc) and all stakeholders. ▪ Transform chainsaw operators to artisanal millers. ▪ Access to funding and credit facilities ▪ Reduced illegality in the timber industry ▪ Efficiency and reduction of waste in the system ▪ Satisfy VPA requirement ▪ Plantation development activities 	<ul style="list-style-type: none"> ▪ Depletion of the timber resource ▪ Loss of jobs by some operators ▪ Poor monitoring of the two parties ▪ Organizing chainsaw operators makes them strong ▪ Lack of political will ▪ Dwindling resource base ▪ Interferences by traditional authorities and farmers ▪ Illegal logging ▪ Potential occurrences of conflicts between the artisanal millers and sawmillers ▪ Potential differences in prices of lumber ▪ Extreme weather conditions affecting the forest and productivity ▪ Potential problems with utility services ▪ Substitution of wood with other non-wood materials ▪ Bush fires ▪ Destruction of farm crops and smaller trees. ▪ Likely fall in profit margin as a result of oversupply to the market. ▪ High cost of equipment

	<p>higher quality at affordable prices.</p> <ul style="list-style-type: none"> ▪ Will be able to create more jobs in rural communities. ▪ Will generate revenue to the government. ▪ There will be relatively low waste in lumber production. ▪ The two groups will be able to produce sustainably than a one group. ▪ Artisanal millers can operate at where saw millers cannot. ▪ Reduction in waste with the use of the logsol and sawmill machines. 		<ul style="list-style-type: none"> ▪ Enhanced Donor support ▪ Competiveness leading to potential reduction in cost of lumber ▪ Opportunity to involve chainsaw operators in re-forestation programmes 	
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