



## **Market Analysis of wood supply chain in Rwanda (international consultancy)**

A proposal submitted by

The Center for International Forestry Research (CIFOR)

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Rwanda has sustained an impressive and steady growth over the past decade. Its business environment is conducive to investment in a broad range of sectors such as financial services, tourism, wood and agriculture. Wood is a valuable constructional material for a variety of purposes.

The Government and its technical and financial partners are making every endeavour to develop the private sector, including SMEs in the wood sector, i.e. downstream processing incl. primary and secondary processing. As indicated in the terms of reference, several hindering factors for the implementation of wood industry in Rwanda have been identified and are to be tackled, some of them are particularly related to the wood supply chain and to the sawn timbers market:

- Secondary processing actors have a weak bargaining power on raw materials procurement.
- Unstable prices of sawn timbers, lack of price sharing.
- Lack of standards and policy for harvesting and primary processing.
- Lack of stocks of hardwoods on the market.
- Impact of taxation on sawn timber prices is depending on supply chain structure.

There is a lack of reliable data on processed timber. Consequently, the economical importance of forestry for the production of structural and non-structural sawn timber is not known with accuracy.

Decision-makers and policy-planners need to develop an in-depth understanding of the value chain in the forestry sector, more particularly in the timber and secondary downstream processing. The final aim of this analysis is to understand the business trends and opportunities and how can the sector help creating jobs and value.

The Development of the wood sector is one of key resolutions of the GoR 13th National Leadership Retreat and one of pillars for the success of Rwanda's vision to attain a Middle Income Country status by 2020. The sector has the potential to generate substantial off-farm employment, increase exports, increase incomes and widen the tax base (source : <http://ecoemploi.org/>).

The core group of the wood value chain includes public and private actors such as MINEACOM, WDA, Wood Association, TVET Schools, IPRCs and ICPCs, etc. These stakeholders create and capture value along the value chain.

Several areas of the wood sector have to be explored. The fiscal and the financial dimensions must be considered since they directly impact on the investment and profitability of the business. Secondly, the technical capacity as well as the level of know-how must be taken into account. Finally the market features and trends, with a special emphasis on supply of raw material and added-value in finished goods.

The source of timber is somewhat limited in Rwanda. From the data given in Figure 1, the bulk of raw material, i.e. round wood comes from afforestation sites and involves two main tree species, e.g. eucalypts and pine trees.

**Table 1: Surface areas of the forest cover in Rwanda in 2007**

Category of forests	Areas (Ha)	Afforested areas versus the total forests (%)	Afforested areas versus total areas of the national dry lands (%)
Humid natural forests	79 797.86	33.15	3.35
Degraded natural forests	38 003.51	15.79	1.59
Bamboos	4 381.47	1.82	0.18
Savannahs	3 726.81	1.55	0.16
Plantations of Eucalyptus	63 560.75	26.40	2.67
Young plantations of Eucalyptus and coppices	39 204.82	16.28	1.64
Plantations of <i>Pinus</i>	12 071.31	5.01	0.51
<b>TOTAL</b>	<b>240 746.53</b>	<b>100.00</b>	<b>10.10</b>

Source: (MINITERE and CGIS-NUR 2007)

## 2 Methodology

### 2.1 Understanding of the Terms of Reference

The Terms of Reference are clear and look exhaustive. They provide some relevant and specific guidance on the assignment. A few observations are noteworthy.

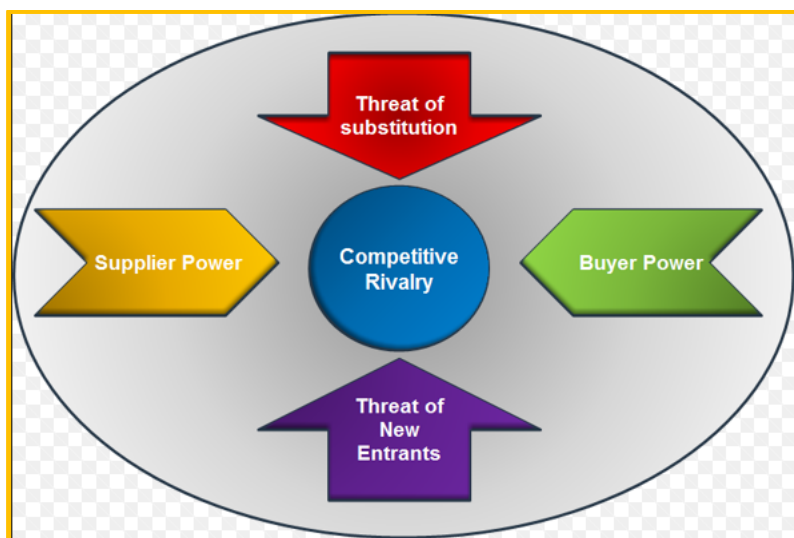
It is unclear whether the photographs have to be included in the final report or edited in a separate document.

It is unclear whether we have to budget for car, driver and fuel. In this proposal, we assumed the GIZ Project Team will assist us with road transportation. If it will not be the case, then additional resources will be required to cover travel expenditure.

A multi-disciplinary team composition is deemed necessary to address the many facets of a complex business area at national level. Indeed, assembling a high-performing team calls for complementarity in the large array of competences this assignment requires. When dealing with a multi-stakeholder context, multi-objectives and multi-disciplinary or cross-disciplinary approach, flexibility and complementarity are central to efficient implementation. Secondly, expert profiles have been chosen in a realistic way and it makes sense to combine skills here. We believe the strength of our team is proven when the whole is more than the sum of its parts, i.e. the team's expertise is greater than the sum of individual expertise.

It is clear CIFOR will be fully responsible for all deliverables. It is equally clear all our experts need to be free from conflicts of interest in the responsibility they will take on.

Tools for data collection as described in the terms of reference are adequate. However, we believe a Porter's Five Forces analysis would be useful. This is briefly illustrated below (see figure 1).



**Figure 1 – 5 Forces of Porter**

The model is very useful to understand the triggers that shape the wood industry in Rwanda. The trends are likely to result from a combination of forces.

Wood products may have many substitutes. For example, plastic chairs and plastic furniture can often replace wooden furniture. Steel frame-beds can be used instead of wooden frame beds. In the construction industry, steel and concrete beams can be used instead of wooden beams. Etc. The force exerted by substitution products is usually great in markets where the price of wooden products tend to rise, and vice-versa.

The threat of new entrants is unlikely to be a major force in Rwanda because the wood downstream processing is not a very lucrative business, especially in a country where the supply is somehow limited.

The supplier power is a tricky issue because tree owners can wait for several years before selling, i.e. when the price is too low and their willingness to sell is not matched by the industry, they often postpone sales. Conversely the industry cannot wait for long. Owners of woodlots often have another source of revenue. But the small & medium-scale enterprises in that industry, have seldom another activity. Moreover, the supply of round wood is also outside the national borders, e.g. imports from DRC.

The buyer power is a key element. It depends on the willingness to pay, the purchasing power and obviously the needs of the end-users.

## **2.2 Risks and assumptions**

Although Rwanda has a sound forest policy framework, data about timber supply has never been easy to collect on a regular basis because it is expensive and requires a large number of surveyors over a short period of time. Data on the supply side of the value chain is thus a source of uncertainty. Moreover, data on the timber downstream processing are not easier to collect, but here a different reason comes in mind. The private sector is seldom keen on sharing all data with surveyors. One must bear in mind financial data is often sensitive.

So, there is a risk regarding the reliability of data on the supply chain. And we have to work on the assumption that data provided by the DFO are reliable.

In terms of mitigation of this risk, we will have to cross-check data and sometimes we will need to work with educated guess. As long as such constraints are explained, there is little risk to reach flawed conclusions.

### 2.3 Sampling

From the terms of reference, we understand that discussions must be held with three types of stakeholders, i.e. three groups in 2-3 cells, in each district. According to table 2, there are 30 districts in Rwanda, which means we will have to organise circa 30 x (2 or 3) x 3 discussions = 250 focus group discussions. This sampling should allow an adequate overview in terms of value chain. We herewith assume that the cells recommended by the Forestry Officers will be representative in some ways of the entire district.

We suggest to work with a team of three surveyors, all from Rwanda, and under the supervision of a Rwandese Senior Forestry Expert and a CIFOR's Team Leader with proven expertise in assessing domestic timber markets in Sub-Saharan Africa.

**Table 2 – Districts in Rwanda**

Division	District	Population	State	Notes	mapped by/checked by	User
Est	BUGESERA					
	GATSIBO					
	KAYONZA					
	KIREHE					
	NGOMA					
	NYAGATARE					
	RWAMADANA					
Nord	BURERA					
	GAKENKE					
	GICUMBI					
	MUSANZE					
	RULINDO					
West	KARONGI					
	NGOANENGO					
	NYABIHU					
	NYAMASHEKE					
	RUBAVU					
	RUSIZI					
	RUTSIRO					
Sud	GISAGARA					
	MUHANGA					
	HUYE					
	KAMONYI					
	NYAMAGABE					
	NYANZA					
	NYARUGURU					
Kigali	RUHANGO					
	GASABO					
	KICUKIRO					
	NYARUGENGE					

In addition to the Provinces and Districts listed above, Rwanda has three further administrative divisions. Districts are divided into Sectors. Sectors are divided into Cells. Cells are divided into Villages.

At present, we can easily believe some districts do not contribute much in terms of timber or round wood supply. It is less easy to understand what districts will play the most important role in terms of downstream processing. Therefore, weighting contributions in supply and downstream processing will be important to get a set of balanced findings.

### 3 Workplan and Budget

Assuming a start of the assignment mid-April, the tentative workplan is as follows :

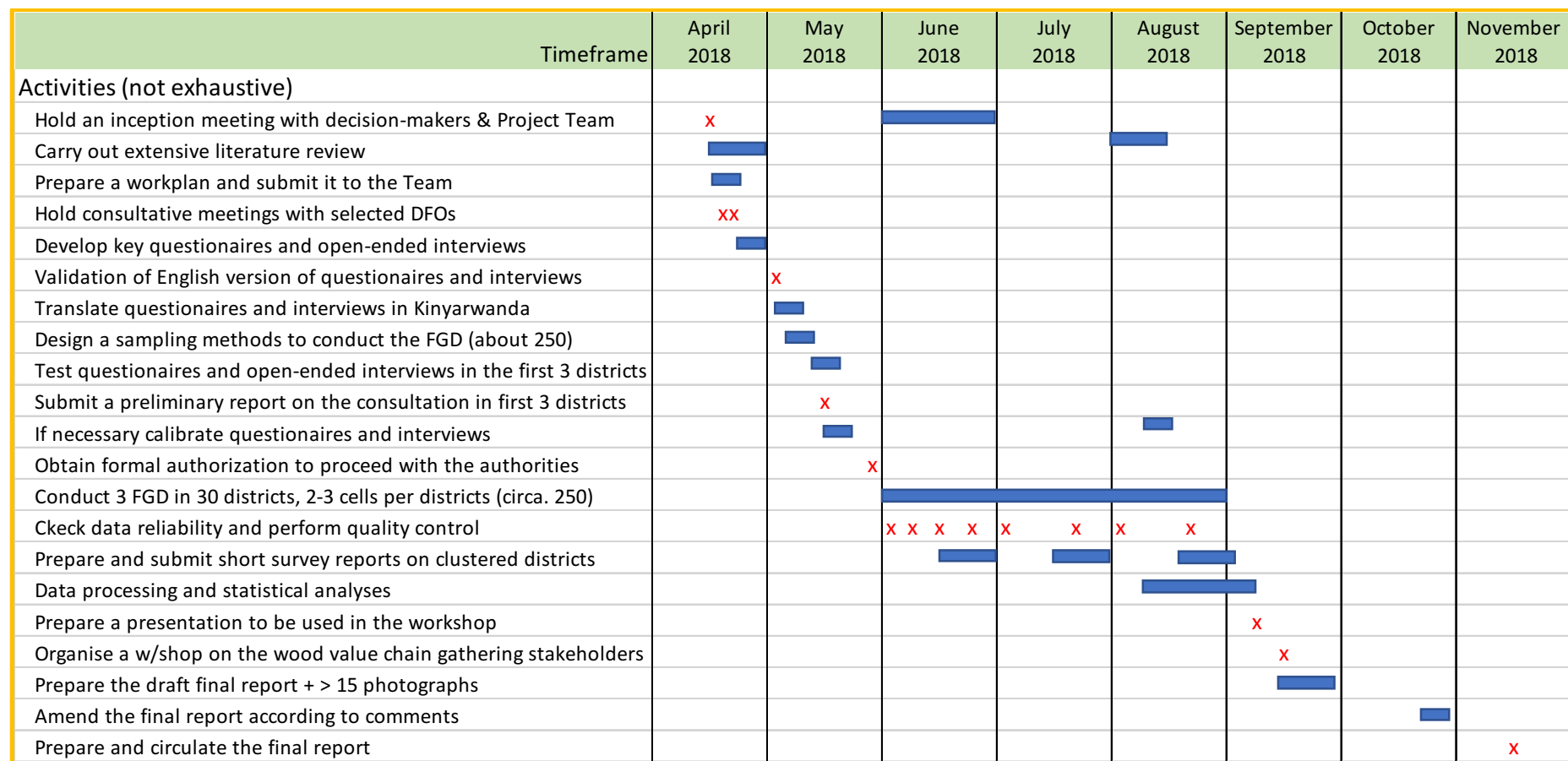


Figure 2 - Workplan



**Table 3 - Budget**

Estimated budget for Market Analysis of wood supply chain in Rwanda (international consultancy, EUR)						
Description	Quantity / Unit	Cost/1	Total cost	Donor I (GIZ?)	Donor II (if Any)	Partner Contribution
Human Resources						
Team Leader	25	400	10,000	10,000		
Timber value chain expert	10	800	8,000	8,000		
Partnership						
Senior Forest Economist	10	800	8,000	8,000		
Wood processing expert	15	600	9,000	9,000		
Senior Forestry Expert	60	600	36,000	36,000		
Enumerators (3)	180	100	18,000	18,000		
Administrative support						
Accountant	20	80	1,600	1,600		
Local Office cost	1	12,000	12,000	12,000		
Travel						
International travel	8	1,600	12,800	12,800		
Per diem - Capital City	40	220	8,800	8,800		
Per diem - Rural Areas	230	120	27,600	27,600		
Workshop (80 participants) all included	80	200	16,000	16,000		
<b>Indirect cost</b>	19%		32,453	32,453		
<b>Grand Total (up to - against evidence)</b>			200,253	200,253		
(All budget lines will be settled against evidence)			-			

We assume a workshop at national level in this sector could be fruitful with a large audience but also remaining affordable in terms of costs and realistic in terms of the size of the conference room. A one day workshop seems appropriate.

### Focus group discussion questionnaire

#### Instructions

*Categories (6-12 people per group):*

1. One group with local leadership (*both those with knowledge of the trade (including harvesting and/or selling trees) and those without*)
2. One group with women (*both those with knowledge of the trade (including harvesting and/or selling trees) and those without*)
3. One group with resident youth (*mixed in gender; resident; both those with knowledge of the trade (including harvesting and/or selling trees) and those without*)

*Selection methodology of the groups:* ask the headman for the three categories

Indicative Guiding Questions (to be finalised with GIZ and team in Rwanda before fieldwork)

#### (Overview)

- What are the main sources of timber in your area? (Probe for forest regime type: natural forests on public land, natural forest reserves, government forest reserves, plantations and then scattered trees on private land including on-farm trees)
- Which timber species do people generally harvest in this community? Have there been changes in these preferred species over time?
- In what ways are members of this community involved in timber trade (probe for direct and indirect involvement)
- Has the way of accessing, harvesting and transforming timber changed over time? If so, how? [Did the people change, new technologies, different ways of approaching the village, etc.]
- How does timber trade benefit the community in your area?
  - Benefits to community:
    - Direct benefits
    - Indirect benefits
  - Benefits to individuals:
    - Direct benefits
    - Indirect benefits
- (probe who benefits and how)
  - (probe for and distinguish between selling trees (income from sales; incentives for conserving forests etc.) and harvesting (remittances, positive externalities (e.g. cooking for harvesters) etc.)
  - What aspects limit ways in which different members of community can benefit from the trade?
  - For those receiving direct and indirect income from timber trade, what are your major uses of that money? (List uses of income from timber—each individual's use may differ)
    - (Differentiate between income from selling trees and income from harvesting)

- How much input do different members of the household have in decisions on how the income is spent? (particularly women's FGD)
- How does timber trade affect the community in your area? (probe for any costs or losses associated with timber trade from the different timber sources, who is affected and how are they affected?)
  - (probe for and distinguish between selling trees (restrictions on forest use, tenure conflicts, elite capture, environmental impacts etc.) and harvesting (environmental impacts incl. stealing trees, increased labor burden for women when husbands go on harvesting operations etc.)

### **(Rules of access)**

- If someone from the village wants to sell trees for timber, what are the rules? (Probe for how and by whom ownership of/the right to sell tree resources is decided in different tenure regimes, any environmental assessments, prices and income distribution (incl. commissions) etc.)
  - Can women, youth, non-Rwandans or members of minority ethnic groups own/sell/benefit from selling trees? How?
- If someone from the village wants to harvest trees for timber, what procedures do they follow? (*Probe for access to harvest area; access to the tree in the different tenure regimes; payments, etc.*)
- If someone from outside wants to harvest trees for timber, what are the procedures?
  - Difference between ethnic groups and Rwandan and non-Rwandan?
- Is this the same for all species? Is this same for all forest types?
- What is the role of community members/village headmen/chiefs/DFOs in managing the forest resources? (*Probe specifically for their role in regulating timber harvesting and trade; how their involvement is perceived (what do they get out of the trade?); do they have the authority to regulate harvesting and trade? Do they have a role in coordinating harvesting/trade?*)
- If you were to give suggestions on changing/improving these rules of access, ownership and benefits at the community level, what recommendations would you make and why?

### **(Environmental impacts/conservation)**

- How have forests/trees cover/abundance of important tree species changed over time in your area (community). (probe for change in forest cover and changes in availability/abundance of important tree species)
- Are fruit trees (mangoes, jackfruits, avocado, etc.) harvested for timber in this community? If yes, has that always been the norm or it is a new trend?
- What caused these changes? If cutting for timber is not mentioned, then probe on how timber trade affects forests in the area.
- What has been the impact of changes in tree cover in the community? (Probe on issues of water availability and quality, firewood availability, pasture availability, forest foods and medicinal plants availability, crafts materials, etc.)
- What have been done and by whom to address the effects of timber trade on forests and trees? How effective/ineffective have those measures been?
- What do you recommend to ensure that timber trade does not result in forest loss and loss of important timber species?

### **(Conflicts within the community)**

- Are there any community conflicts associated with the harvesting of tree resources (probe for tree species for timber, differences between local and external harvesters)?
- Are there any conflicts associated with the selling of tree resources? (probe for overlapping claims, conflicting land/resource uses, benefit sharing etc.)
- If yes, how were they solved? (Probe for different community members' perceptions on the accessibility and fairness of conflict resolution mechanisms)

**(Major trends/changes in sawnwood business since 2012)**

Since 2012, how have the following changed:	General Trend 1=Decreased; 2=No change; 3=Increased	Reason for Change If applicable
1. The price of a standard sized (8x2) board of <u>low value</u> sawnwood such as kirundu/antiarus/mukede/false mvule		
2. The price of a standard sized (8x2) board of <u>medium value</u> sawnwood such as musizi/mwataibale/albizia		
3. The price of a standard sized board of <u>high value</u> sawnwood such as mahogany/mvule		
5a. The price of a standard sized board of <u>plantation species</u> such as eucalyptus		
5b. The price of a standard sized board of <u>plantation species</u> such as pinus/cypress		
6 The general availability of sawnwood		
7 The distance that sawnwood is transported from forest gate to the end market ( <i>i.e. where consumer buys</i> )		
8 The demand for sawnwood by consumers		
9. Number of rules and regulations regarding harvesting		
10. Number of rules and regulations regarding transporting		
11. Number of rules and regulations regarding selling		
12. The cost of obtaining permission to legally harvest sawnwood		
13. The cost of obtaining permission to legally transport sawnwood		
14. The cost of obtaining permission to legally sell sawnwood		
15. The enforcement of rules and regulations regarding sawnwood harvesting		
16. The enforcement of rules and regulations regarding transporting sawnwood		
17. The enforcement of rules and regulations regarding selling sawnwood		

How have the following policies or events affected your sawn wood business over the past five years?

1. Introduction of environmental police	
2. Ban on confiscation of illegal timber from within timber yards	

3. Forest produce check points on roads by various local governments etc.	
4. Others (specify)	

**(Number of individuals operating in the area)**

Estimate the number of individuals operating within your area of operation and how and why the number has changed over the past 5 years\* [*Note. This is specific to each category, depending on answer to question #1 above, but if the interviewee has suggestions on other categories, please record the number as well*]

0. Name of area of operations (sub-county, district, multiple districts...)			
	Current number	5 years ago	Why change occurred?
1. Licensed sawnwood producers			
2. Un-licensed sawnwood producers			
3. Sawnwood agents/brokers/middlemen			
4 Sawnwood transporters			
5. Sawnwood traders			
6. Sawnwood wholesalers/retailers			

*\*Avoid double counting. For those who are involved in multiple levels of the marketing chain count them under the category they get the most income from.*

**Value chain questionnaire (one-to-one with operators)**

Applies to:

1. **Producers:** Pit-sawyers, tree growers, forest owners, people who produce sawnwood from standing trees; [*Note. These are the labourers who do the physical work of pit or chain sawing. If the business is owned by someone else, that person is the trader, see below*];
2. **Timber Intermediaries / Agents / Brokers / Middlemen** [These people search out and/or organize sawnwood supply for other people in the sawnwood value chain (*i.e. do not buy and sell, but work on commission or contract for a trader or other actor in the marketing chain, or help producers secure access rights in production areas*)];
3. **Transporters:** People who transport sawnwood from one location to another (*may not necessarily be the final market. These people may be owners of the timber as well as owners of the means of conveyance, or even simply the drivers. It's an important node and we need to understand the costs/benefits of these people*)

4. **Traders:** People who both buy and sell sawnwood, but don't sell directly to consumers  
[Note. These can be the owners of the sawn business, but do not conduct the operations in the forest themselves];
5. **Wholesalers/Retailers:** People who sell sawnwood directly to consumers.

#### A. General Information

1. How do you describe your involvement in the sawnwood business?\*

<b>Actor Categories</b>	<i>0=No; 1=Yes</i>	<i>Year established/started</i>	<i>Rank in order of importance to income</i>
1. <b>Producer:</b> Do you produce sawnwood?			
2. <b>Agent/Broker/Middleman:</b> Do you search out and/or organize sawnwood supply for other people in the sawnwood value chain? (i.e. does not buy and sell, but works on commission or contract for a trader or other actor in the marketing chain)			
3. <b>Transporter:</b> Do you transport sawnwood?			
4. <b>Trader:</b> Do you both buy and sell sawnwood, but don't sell directly to consumers?			
5. <b>Wholesaler/Retailer:</b> Do you sell sawnwood directly to consumers?			
6. Other, specify			

\*Indicate all that are applicable; actors may fall in more than one category.

2. Estimate the number of individuals operating within your area of operation and how and why the number has changed over the past 5 years\* [Note. This is specific to each category, depending on answer to question #1 above, but if the interviewee has suggestions on other categories, please record the number as well]

0. Name of area of operations (sub-county, district, multiple districts...)			
	Current number	5 years ago	Why change occurred?
1. Licensed sawnwood producers			
2. Un-licensed sawnwood producers			
3. Sawnwood agents/brokers/middlemen			
4. Sawnwood transporters			
5. Sawnwood traders			
6. Sawnwood wholesalers/retailers			



*\*Avoid double counting. For those who are involved in multiple levels of the marketing chain count them under the category they get the most income from.*

### 3. Demographic information

1. What year were you born?	
2. What is the gender of the respondent? (0=Male; 1=Female)	
3. Are you the head of household? (0=No; 1=Yes)	
4. Civil status (1=married (or equivalent relationship); 2=unmarried; 3=widowed)	
5. How many persons comprise your household?	
6. How many persons are younger than 15 years of age?	
7. How many persons are older than 65 years of age?	
8. What ethnic group do you belong to? (1=Bakonjo; 2=Batoro; 3=Bamba; 4=Banyoro; 5=Bakiga; 6=Bafumbira; 7=Banyankole; 8=Busoga; 9=Baganda; 10=Lugbara; 11=Lendu; 12=Alur; 13=Kebu; 14=Jaluo; 15=Acholi; 16=Bagungu; 99=Other (specify))	
9. What is the highest level of education you attained? (PhD, MSc, BSc, High School, Technical college...)	
10. What is your home District? (i.e. district of origin)	
11. Where is your primary place of residence now? (specify district, village/town)	
12. How many years have you resided in there?	
13. If moved from elsewhere, why did you migrate? (0=Not relevant; 1=because of opportunities in the timber business; 2=because more or better agricultural land is available; 3=Other, specify)	
14. How many acres of land does your household own (i.e. in rural areas)?	
15. Do you own your dwelling?	
16. How many rooms does your dwelling have?	
17. What type of:	
17a. Walls does you dwelling have?	
17b. Roof does you dwelling have?	
17c. Floor does you dwelling have?	
18 What type of toilet does you dwelling have?	
19. Do you own a television?	
20. Do you own a generator?	
21. How much livestock do you own?	
22. What types of fuel do you use for cooking?	
23. How many urban plots does your household own? (i.e. plots in Kigali or other urban centers)	
24. Do you own a bicycle? (0=No; 1=Yes)	
25. Do you own a radio? (0=No; 1=Yes)	
26. Do you own a mobile phone? (0=No; 1=Yes)	
27. Do you own a motorcycle? (0=No; 1=Yes)	
28. Do you own a car or truck? (0=No; 1=Yes)	
29. Do you own a truck or boat that is large enough to transport large volumes of sawnwood over long distances? (0=No; 1=Yes)	

## B. General Information about Sawnwood Business

### 1. Basic information about business

1. To what extent are you (as an individual, not as a household) able to make strategic decisions about the business (not only day-to-day management, but decisions relating to expansion, reinvesting profits, contracting suppliers, firing and hiring employees etc.)? (1=little to none; 5=full extent)	
1a. (If reply to previous is NOT 5): who (else) makes decisions about the business? (relation to the interviewee?)	
2. To what extent are you able to decide on what the income you earn from this business is spent on? (1=little to none; 5=full extent)	
2a. (If reply to previous is NOT 5): Who (else) makes decisions about how the income is spent? (relation to the interviewee?)	
3. Are other members of your household currently engaged in sawnwood business? (0=no, 1=yes)	
3a. If yes, who are engaged and what are their roles? (across various related activities, e.g. husband working as harvester, wife managing shop...)	
3b. Are other members of your household indirectly engaged in sawnwood business, e.g. through selling food to harvesters/marketers, taking care of children while parents are at work? Who are engaged, and what are their roles?	
4. During the past 6 months, how many people outside of your own household have you employed on a full time basis? ( <i>i.e. only those engaged in sawnwood business</i> )	
5. During the past 6 months, how many people outside of your own household have you employed on a part-time, seasonal or contract basis? ( <i>i.e. only those engaged in sawnwood business; consider formal employment rather than casual day labor</i> )	
6. Do you belong to a cooperative group or association that is focused on the sawnwood production or trade? (0=No; 1=Yes)	
6a. If yes, what is the name of the group or association?	
6b. If no, why don't you belong to any cooperative/association?	
7. What proportion of your total income comes from sawnwood business?	
8. What other sources of income do you have? Name two and indicate proportion income: 8a).....	

8b).....	a) % income:..... b) % income:.....		
9. What were your sources of income before starting this business? Name three and indicate proportion income: 9a)..... 9b)..... 9c).....	a) % income:..... b) % income:..... c) % income:.....		
10. Has your business accessed <u>formal cash</u> credit at any time during the past 5 years? ( <i>i.e. banks, ROSCAS, microcredit etc.</i> ) (0=No; 1=Yes)			
11. Has your business accessed <u>informal cash</u> credit at any time during the past 5 years ( <i>i.e. moneylenders, other sawnwood specialists etc.</i> ) (0=No; 1=Yes)			
12. In your estimation, what percentage of the sawnwood that passes through your business is produced legally?			
13. Do your customers demand *legal* products?			
	<b>Rank 1</b>	<b>Rank 2</b>	<b>Rank 3</b>
14. During which months is the demand for sawnwood highest?			
15. During which months is the demand for sawnwood lowest?			
16. Which districts do the majority of sawnwood that passes through your business come from?			

2. Where does the money/capital (for setting up your activities?) come from?

Tick source	Terms of access (Code A)	Purpose (For what did you use the money?)
<input type="checkbox"/> Private capital	#NA	
<input type="checkbox"/> Borrowed from family / friends		
<input type="checkbox"/> Bank		
<input type="checkbox"/> Government facility		
<input type="checkbox"/> Suppliers		

<input type="checkbox"/> Buyers		
<input type="checkbox"/> Informal local moneylenders		
<input type="checkbox"/> Other.....		

**Code A**

1. Fixed interest rates
2. Variable interest rates
3. Repay in timber
4. Profit sharing
5. No interest / Free loan
6. Other (specify).....

3. On what terms did you access the productive assets (for setting up or conducting your activities?)?

Tick source	Terms of access (Code A)
<input type="checkbox"/> No productive assets owned	
<input type="checkbox"/> Chainsaw	
<input type="checkbox"/> Truck	
<input type="checkbox"/> Other.....	
<input type="checkbox"/> Other.....	

**Code A**

1. Fixed interest rates
2. Variable interest rates
3. Repay in timber

- 
4. Profit sharing
  5. Borrowed free of charge
  6. Rented
  7. Other (specify).....

4. What are the major problems/challenges your business currently faces? What suggested solutions?

	Problem	Solution
1. Main problem/challenge		
2. Secondary problem/challenge		
3. Tertiary problem/challenge		

5. What is the geographic scope of your operations?

When you source/look for timber	When you sell timber
<input type="checkbox"/> Within town/village (name of town/village)	<input type="checkbox"/> Within town/village (name of town/village)
<input type="checkbox"/> Within district (name of district)	<input type="checkbox"/> Within district (name of district)
<input type="checkbox"/> Within province (name of province)	<input type="checkbox"/> Within province (name of province)
<input type="checkbox"/> Across the country	<input type="checkbox"/> Across the country
<input type="checkbox"/> Other...	<input type="checkbox"/> Other...

#### D. Sawnwood Income and Costs

1. What were the quantities and prices of sawnwood that you purchased and sold **in the past 2 months?**

**(THIS APPLIES TO all respondents that identify their primary or secondary role as: producer; trader, wholesaler/ retailer)**

	1. Species (If possible please record both local name and common or botanical name!)	2. Size*	2a. Quantity produced	3. Quantity purchased	4. Price per piece purchased	5. Quantity sold	6. Price per piece sold	7. Estimated value of capital stock (Column 3-5 x4)	
..... 2017								#	Value
..... 2017								#	Value

*\*Please record size as (width in **inches** x height in **inches** x length in **feet**).*

1a. What were the quantities and prices of sawnwood that you purchased and sold **in the best and worse month** over the past 12 months?

**(THIS APPLIES TO all respondents that identify their primary or secondary role as: producer; trader, wholesaler/ retailer)**

	1. Species (If possible please record both local name and common or botanical name!)	2. Size*	2a. Quantity produced	3. Quantity purchased	4. Price per piece purchased	5. Quantity sold	6. Price per piece sold	7. Estimated value of capital stock (Column 3-5 x4)	
(Best)..... 20....								#	Value
(Worse)..... 20....								#	Value

\*Please record size as (width in **inches** x height in **inches** x length in **feet**).



2. Other income not related specifically to sawnwood sales: **(THIS APPLIES TO all respondents that identify their primary or secondary role as: agent/broker/middleman or transporter)**

	[Month] [Year] 1	[Month] [Year] 2
1. Gross income from contract or piece rate work		
2. Gross income from commissions		
2a. How do you calculate commissions and rates?		

2a. If the respondent primarily or secondarily identifies as a **transporter**:

1. What mode do you use to transport sawnwood? 1=Own truck; 2=Rented truck; 3=Truck owned by employer; 4=Own boat; 5=Rented boat; 6=Boat owned by employer; 7=Boda boda/piki piki; 8=Bicycle; 9=Other, specify	
2. What was the distance you travelled to deliver the most recent 3 loads of sawnwood? (kms)	1. 2. 3.
3. How many loads did you carry in April 2017? (number of loads)	
4. How many loads did you carry in January 2017? (number of loads)	

2b. If the respondent primarily or secondarily identifies as a **agent/broker/middleman**:

1. How many orders did you fill in April 2017	
2. How many orders did you fill in January 2017?	
3. Who do most of the orders you fill come from? 1=Sawnwood businesses in Kigali; 2=Sawnwood businesses in major district town; 3=Construction site in Kigali; 4=Construction site in major district town; 9=Other, specify	

3. What are the costs associated with your sawnwood business?

	Month 1	Month 2
<b>Costs (only those related to the specific month):</b>	Same month indicated in table 1	Same month indicated in table 1
1. Purchased inputs, forest based ( <i>for example, standing trees; acres of forested land etc.</i> )		
2. Purchased inputs, other (e.g. chainsaw, truck, etc.)		
2a. Year of purchase		
2b. Normal lifetime (yrs)		
3. Hired labour (wages)		
4. Hired labour (secondary costs – e.g. food, transport, medical)		
5. Taxes		
6. Bribes/tokens		
6a. In production areas		
6b. During transportation		
6c. In depots/markets		
7. Transportation		
8. Marketing ( <i>i.e. including air time</i> )		
9. Rental of storage space/stall/shop		
10. Stamping fees/movement permits		
11. Market dues		
12. Payment to middlemen/brokers		
13. Food for workers		
14. Cost of spare parts (pls indicate for what, e.g. for power saws, etc.)		
15. Finance costs (e.g. servicing loans)		
16. Other costs, specify.....		
<b>17. Total Costs</b>		
18. Value of capital stock ( <i>i.e. trucks, bicycles, saws etc; include any stored sawnwood that was carried over from previous month</i> )		

4. One time only or irregular costs associated with sawnwood purchases and sales\*

	Amount paid <b>per year</b> (Jan 2017-Dec 2017)
1. Harvesting license	
2. Transport license	
3. Trading license	
4. Income tax	
5. VAT	
6. Other, specify	

\*Note: the above table should only include costs that were not captured above in 3.

# E. Social Capital and Networks

	Prod.	Agen.	Transp.	Traders	Whole.	Cons.	Tree grow.
1. How many of each of the following types of actors in the sawnwood value chain have you done business with in the past 3 months?							
2. Of those, what number have you done business with before? ( <i>i.e. they are repeat customers</i> )							
3. How many have you had a business relationship with for 1 year or more?							
4. How many have you had a business relationship with for 5 years or more?							
5. What type of relationship do you have with your best clients (1=running contract; 2=one time contract; 3=verbal)?							
6. How do you and your best clients determine prices (1=fixed pricing formula; 2=negotiated individually; 3=other)?							
7. (for those downstream from you) Do they demand that the sawnwood is produced under license? (from 1 (never) to 5 (always))							
7. What is the dominant ethnic group of those that you do business with?							
<b>Please rate your relations with those that have an influence on the functioning or success of your work</b> <b>1 = Very poor, unimportant, not at all to 5 = very good, very important, always</b>							
8. How important are they to the job success?							
9. How much influence do they have over setting terms of trade (e.g. price, volume)?							
10. Can they be relied upon to keep their promises?							
11. Do you feel a sense of loyalty to them?							
12. Do they try to take advantage of you?							
13. How important is shared cultural / ethnic heritage to your relationship?							
14. How important is gender to your relationship?							
15. How important are formal contracts?							
16. Are they willing to find a compromise when you have disagreement?							

\* **Prod.**=Producers // **Agen.**=Agents-Brokers-Middlemen // **Transp.**=Transporters // **Whole.**=Wholesalers  
// **Cons.**=Consumers // **Tree grow.**=Tree growers-Forest owners.

G. Interactions with Forest Sector Officials and other Government Officials and Community Leaders

1. During the **past 6 months** approximately how many times have you or a representative of your business interacted (*i.e. in person*) with representatives of the following organizations regarding your business?

Organization	Number of interactions
1. District Forest Officer or Forest Inspection Division	
2. Rwanda Wildlife Authority representative	
3. National Forest Authority representative	
4. Other government officials	
5. Community leaders	

H. Enumerator Comments on Irregularities or Interesting Issues of Note with Interview (*Continue on back page if necessary*)

In order to carry out the assignment, CIFOR has identified a team of key experts as follows :

Team Leader:

An international expert with vast experience in assessing domestic timber sectors across Sub-Saharan Africa with the proposed methods and tools, training enumerators and supervising the overall fieldwork activities, in addition to engagement with local authorities to foster ownership of project's results.

The team leader will work over a period of 25 days, most likely in two different missions in Rwanda. It is estimated that a total number of 25 days is adequate for the team leader to perform his work including report writing.

Senior timber value chain expert:

An international expert with a sound experience in the value chain, fluxes of timber and intermediary markets, and a strong experience in the timber sector in neighbouring countries (e.g. Uganda, DRC, etc.).

The bulk of the work will be conducted before fieldwork, in the finalisation and testing of the methodological approach, and after fieldwork, supporting the Team Leader and the Senior Forest Economist (see below) in data analysis and report writing. The expert should be present in the final workshop. A total input of 10 days will be sufficient.

Senior Forest Economist:

An international expert with some strong experience in forest economy and investments, with some specific experience in the region.

The bulk of the work can be done home-based and towards the end of the assignment (after the main statistical analyses). The expert should be present in the final workshop. A total input of 10 days will be sufficient.

Wood Processing Expert:

An international or a national expert with a strong knowledge of value added in the timber downstream processing. The expert must have a strong background in downstream processing and some strong knowledge in downstream processing technology. A single mission of 15 days should be adequate to perform a thorough diagnosis including illustrative photographs.

This expert should work in Rwanda and assess the technology used in the country and the room for further technology development. His/her findings will help the Forest Economist to prepare analysis and recommendations in terms of investment and strategy.

Senior Forestry Expert:

A national expert with a strong knowledge of the district forest context. The expert must have a strong background in silviculture, especially tree planting and exploitation of eucalyptus and pine trees. His / her duties will also encompass the supervision of the team of surveyors. S/He shall be closely involved in every meeting with local authorities. It is assumed he / she will need to work over a period of 60 days, of which about 50 in conducting fieldwork.

#### Surveyors/Enumerators (3)

National surveyors conversant with questionnaires and focus group discussions. They should have a strong command of English language and Kinyarwanda as mother tongue.

We strongly recommend to work with a team of three surveyors since the methodology foresees three groups in each cell.

The three surveyors will be in charge of data collection in the field. Each of them should work circa. 60 days over a period of 3 months.