

**FOREST  
HARVESTING  
CASE-STUDY**

**21**

**CHAINSAWING IN THE NATURAL FORESTS OF  
GHANA.**

**An assessment of the socio-economic impacts of  
this practice**

by

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## Foreword

This case study is one of a series of publications produced by the Forest Products Service of FAO in an effort to promote environmentally sound forest harvesting and engineering practices. The purpose of these studies is to highlight both the promise of environmentally sound forest harvesting technologies as a component of sustainable forest management, and the constraints that must be overcome in order to assure widespread adoption of those technologies.

The study benefited from extensive collaboration with the GCP/INT/808/UK: Strengthening Participatory Approaches in Forest management in Uganda, Ghana and Guyana – a joint FAO DFID programme aimed at reducing poverty in two African countries, Uganda and Ghana, and in the Caribbean in Guyana, through sustainable use of community based natural assets.

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The report was prepared by Francis Odoom and FAO Forestry Officer Simone Rose managed the preparation of the report for publication in the FAO Forest Harvesting Case Study Series.



## Executive summary

The aims of this study were to:

- review existing forest policies and any changes to deal with chainsaw lumbering in Ghana;
- discuss the effectiveness of any forest policy responses to the activity;
- determine the size of the local timber market, the contribution of chainsawn lumber, and measures to reduce the demand for chainsawn lumber;
- determine the effect of chainsaw lumbering on nearby communities.

The outputs are recommendations for follow-up, including suggestions:

- to improve forest laws with regard to chainsawing;
- to resolve the market/economic issues that may arise if chainsawn timber were taken out of the equation;
- for other livelihood ventures for persons currently involved in the chainsawing industry.

As it stands, chainsawing in Ghana is a subset of illegal forest activities. Therefore, the report examines the past actions or inaction that have encouraged illegal timber harvesting activities as well as the capacity of the Forestry Commission (FC) to deal with them. Law enforcement and governance are important with regard to the control of illegal forest activities. Hence, the various elements of governance in practice in Ghana have been reviewed in order to determine how chainsawing can be minimized and how transparency, accountability, civil society participation, law enforcement, and the tracking of chainsawn lumber improved.

The cumbersome nature of the allocation of the timber utilization permits for the provision of lumber to the local communities and the impracticality of its implementation are also highlighted. The study describes the factors affecting the future sustainability of the trees both off-reserves and on-farm, which form a very significant part of the raw material base for the timber industry. Policy interventions are traced from 1991, when chainsawing was legalized in Ghana, to 1998, when it was banned. The effectiveness of the policy responses thereafter is analysed. The characteristics of the local lumber market and the role played by chainsawn lumber are discussed.

Among its findings, the study highlights the fact that about 60–80 percent of the chainsaws used in chainsawing belong to lumber dealers located far from the source of the timber. Hence, focusing on the operators alone with regard to alternative livelihood schemes would not be effective as the dealers would find other means to reconnect the chain. Measures to make the trade in chainsawn lumber less profitable, so affecting all categories of ownership, e.g. through the payment of the real prices for logs to the farmers and the payment of the appropriate forest fees, may be more effective.

Another finding is that most of the benefits from chainsaw lumbering go to the chainsaw lumber dealers, with the local communities serving mainly as carriers of lumber and chainsawing equipment to and from the stump to the nearest roadside.

Measures to control chainsaw lumbering that have been made operational are: the use of task forces to monitor the activity; and attempts to increase the lumber supply to the local market through the supply of 20 percent of the output of the sawmills. However, it has been calculated

that 20 percent of the output of the sawmills is inadequate to meet the estimated local demand for lumber. Hence, more innovative measures are required to encourage the sale of more lumber on the local market. Although the task forces have been ineffective, it is considered that the situation would be worse without them.

The estimated lumber demand of the furniture and construction industry is more than 95 percent of the total local lumber demand. Chainsawn lumber constitutes more than 70 percent of the lumber retailed locally.

The alienation of traditional authorities and tree-tenure insecurity on the part of farmers have promoted their connivance with and participation in the chainsaw lumber trade.

The Forest Services Division (FSD) has inadequate resources for intensive inspections of permits for chainsaw lumbering. The study finds that cooperation between the FSD and the Community Forest Committees has the potential to improve the monitoring of such inspections in the rural areas.

The sustainability of trees on farms is in doubt as a result of the introduction of the light-demanding variety of cocoa coupled with tree-tenure insecurity.

The study concludes that the three main factors driving chainsaw lumbering are:

- an inadequate supply of legal lumber to the local market;
- weak law enforcement and governance structures;
- rural economic decline.

Of these, first two have been identified as the driving forces that will determine the future of chainsawing in Ghana. The two forces have been used to derive possible scenarios for the future of the trade in Ghana. Recommendations have consequently been made with regard to the realization of a selected scenario (Green Ghana) that would facilitate the regularization of chainsawn lumber production as well as possible alternative livelihood schemes. Owing to the extent of the study area and the mode of choice of respondents (i.e. the use of the criteria of cooperativeness and of intermediaries at times), the recommendations should be regarded as “flags” on issues that require further attention.

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## List of acronyms

AAC	Annual allowable cut
AD	Air-dried (lumber)
AFLEG	African Forest Law Enforcement and Governance
CEPS	Customs, Excise and Preventive Services
CFC	Community Forest Committee
CFM	Collaborative forest management
CSO	Community support organization
DA	District Assembly
DCE	District Chief Executive
ECOWAS	Economic Community of West African States
ERP	Export Rehabilitation Project
FC	Forestry Commission
FD	Forestry Department
FDMP	Forest Development Master Plan
FIF	Forest Improvement Fund
FORIG	Forestry Research Institute of Ghana
FPS	Forest Protection Strategy
FR	Forest Reserve
FRMP	Forest Resources Management Project
FSD	Forest Services Division
FST	Forest Transition Zone
FWP	Forest and Wildlife Policy
GREDA	Ghana Real Estates Development Association
HFZ	High Forest Zone
KD	Kiln dried (lumber)
LUS	Lesser used species
MLF	Ministry of Lands and Forestry
NEAP	National Environmental Action Plan
NFPDP	National Forest Plantation Development Programme
NGO	Non-governmental organization
NRMP	Natural Resources Management Programme
NTFP	Non-timber forest product
OASL	Office of the Administrator of Stool Lands
OFR	Outside Forest Reserve
SRA	Social responsibility agreement
SZ	Savannah Zone
TA	Traditional Authority
TIDD	Timber Industry Development Division
TREC	Timber Resource Evaluation Committee
TRMA	Timber Resource Management Act
TUC	Timber utilization contract
TUP	Timber utilization permit



# Chapter 1

## Introduction

Illegal forest activities include: occupation of forestlands, logging, woodland arson, timber transport, trade and timber smuggling, transfer pricing and other accounting practices, and illegal forest processing.

Illegal forest activities have environmental, economic and forest-law enforcement implications. They also affect relations between the State and civil society. They distort wood-product markets and lead to a loss in revenue to the forest owner as well as the government. Inefficiency of resource use is encouraged and the ecosystems and biodiversity in protected areas are threatened. They promote a cycle of corruption through which the powerful may undertake illegal forest activities and use their increased power to perpetuate such illegalities.

In view of the ban on chainsawing in Ghana, this activity and the resulting lumber can be referred to as “illegal” throughout this report except for the period 1991–98 when it was legalized. Illegal chainsawing can be considered as a subset of illegal forest activities in general and intimately related to illegal logging in particular. Such an activity and the lumber that ensues from it have been a major concern for policy-makers in Ghana since the 1990s. It has recently attracted international interest as well. Indiscriminate logging of forests can result in loss of livelihood opportunities – especially with regard to forest-dwelling and forest-fringe communities – and the environmental services that the forests provide.

Attempts to address the concerns about chainsawing require a critical assessment of the issues at the forest resource base with regard to access to the raw material for chainsawing (termed the “push” forces) in addition to the market conditions that make such an activity an attractive business (termed the “pull” forces).

### **STUDY OBJECTIVES**

The mandate of this study was the execution of the following tasks in order to gain insight into the chainsawing industry in Ghana:

- A review of the existing forest policy in Ghana with respect to sustainable forest management. A description of any changes in policies/laws/regulations to deal with the chainsawing industry and a discussion of their effectiveness.
- Collection of data to determine the actual size of the local timber market in terms of demand and supply and chains/flows, including:
  - evaluation of the size of the chainsawing market as opposed to the sawmillers;
  - identification of potential measures to reduce the demand for chainsawn lumber;
  - identification of possible problems in trying to remove chainsawn lumber from the market;
  - identification of potential measures to reduce the negative impacts of the chainsawn lumber industry.
- Selection and description of a study area.
- Collection of data on and description of the local communities living in or around the study area and especially their relationship to chainsawing operations, as well as:
  - discussion of possible impacts on these communities if chainsawing operations were to cease;

- suggestions for alternative livelihoods for which persons involved in the chainsawing industry may be trained and/or encouraged to pursue.
- Recommendations for follow-up on chainsawing in Ghana, including suggestions:
  - to improve forest laws with regard to chainsawing;
  - to resolve the market/economic issues that may arise if chainsawn timber were taken out of the equation;
  - for other livelihood ventures for persons currently involved in the chainsawing industry.

### **STUDY METHODOLOGY**

The study was undertaken between 1 June and 16 July 2004. It consisted of various phases. The first phase entailed a review of the relevant literature. This was followed by fieldwork preparations including: the choice of the study area; the selection of towns/villages to be visited; and the compilation of checklists to assist with field interviews with informed opinion in the study area including chainsaw operators, forest-fringe communities, chainsaw lumber sales outlets, Forestry Commission (FC) staff, sawmillers and concession holders. Communities were selected for interviews with the assistance of the FC field staff that had been involved with the control or assessment of chainsawing in the past. Informed opinion among the general public was also used. The criteria for selection were high intensity of the activity in the area coupled with the likelihood of the respondents to cooperate.

In the third phase, field visits, analysis of secondary data and semi-structured interviews of informed opinion using checklists were carried out. The interviewees included those from the FC (district and national) as well as loggers, chainsaw operators, traders in chainsaw lumber, carpenters and selected members of the local communities in the selected study area.

There was an opportunity to meet representatives of the local communities in the Tarkwa Forest District at a workshop organized by the Forest Services Division (FSD) to inaugurate the Community Forest Committees (CFCs) for the district. It was also possible to interview representatives of the Jomoro Chainsaw Operators and Owners Association, who are attempting to regularize their operations with the District Assembly (DA) and the Tarkwa District Forest Office.

The data on the local lumber market and the contribution of chainsaw lumber were drawn from the existing literature. Unlike the selected study area, the chainsawn lumber trade is not localized. Hence, its movement and coverage nationwide were discerned as much as possible from the interviews and the literature.

The final phase was that of data analysis and report writing.

### **Problems encountered**

Because of the illegality of chainsawing in Ghana, it was difficult to interview those persons involved unless confidentiality was assured through trusted third parties. Those no longer involved in the activity tended to be more cooperative. As a result, the interviews of the stakeholders – except for the staff of the related public organizations – were scattered. However, an attempt was made to confine them within the Tarkwa Forest District in Western Region in order to be able to complete the work within the allotted time for the study. Therefore, the results of the study should be taken as mainly flagging those areas that require further attention in the quest for a lasting solution with regard to the minimization of chainsawing in Ghana.

In the case of farmers that sell trees on their farms, proxy methods were used to obtain the sample sales prices of the trees. For example, even though it was known that farmers sell the trees on their farms, they were not prepared either to admit this or give an indication of how much they sell the trees for (it is illegal to fell trees for sale without the permission the FC).

Therefore, such information was obtained from concessionaires with timber rights that contained farms as well as some chainsawn lumber merchants that have purchased trees on farms for sawing.

The lack of effective communication facilities with the rural areas of the study area for the purposes of booking appointments made contact with key informants a “chance” situation.

### **ORGANIZATION OF THE REPORT**

Chapter 2 describes the forest resource base in the High Forest Zone (HFZ) and the management of the forest resources for timber in both the Forest Reserves (FRs) and the unreserved areas. In addition, it details the social structure of the inhabitants of the off-reserve areas, the varied interests of the indigenes and the migrants there and their degree of dependence on the forest resources. It discusses the logger–farmer conflicts and the introduction of the light-demanding cocoa variety in the outside forest reserve (OFR) areas. The effect of the socio-economic factors on the sustainability of trees on farms and the potential for people’s participation in forest management is pointed out.

Chapter 3 examines the forest management system for the reserved forests and the system for the control of exploitation in the FRs and the OFR areas. In addition, the chapter analyses the effect of the past fiscal systems that led to speculative acquisitions and the proliferation of timber concessions, which subsequently increased the responsibilities of the FC and stretched its timber-harvesting monitoring capacity.

Chapter 4 catalogues the pre-1994 forestry events and programmes that:

- alienated landowners from policy formulation and the management of their forest resource;
- increased farmer–logger tensions with regard to damage to crops;
- perpetuated tree-tenure insecurity outside the FRs;
- caused a construction boom, i.e. the Export Rehabilitation Project (ERP), and led to the legal recognition of chainsawing to support the consequent increased demand for lumber.

The chapter discusses how ineffective control of logging by the FC coupled with the administrative allocation of timber rights resulted in the tripling of the number of loggers and increased the illegal logging that occurs in tandem with chainsawing. The post-1994 era is also described, especially with regard to attempts to reverse past policy failures through the enactment of the 1994 Forest and Wildlife Policy (FWP) and the implementation of the Natural Resource Management Programme (NRMP) to put the policy into practice. The chapter also discusses law enforcement and governance issues, including the rules under which power is exercised with regard to the management of the forest resources, as well as relations between the State and civil society. These are considered to be important in the control of corruption and minimization of illegal forest activities. Hence, they are examined in Chapter 5.

Chapter 6 describes the trend in lumber production in the country since the late 1940s, including the advent of chainsaw lumber production and marketing. The policy responses to ban chainsawing and their effectiveness are also analysed in this chapter.

Chapter 7 deals with the analysis of the available data on the local demand and supply of both sawmill lumber and chainsawn lumber in addition to the dependence of the various end users on these lumber types.

Chapter 8 describes the selected study area and how chainsaw lumber production is organized, the actors involved, and how the activity affects them. Although there is a section

devoted to the study area in this chapter, some of the results have been incorporated in other chapters in order to link them with other related findings.

The forces that drive chainsawing are deduced from the earlier chapters in Chapter 9. Based on these forces, four scenarios for chainsawing are derived and discussed in Chapter 10. One of the scenarios is chosen as being the most appropriate one for regularizing chainsawing. Some recommendations are made in Chapter 11 with regard to the measures for realizing the selected scenario.

## Chapter 2

### The forest resource base

#### VEGETATION ZONES

The total area of Ghana is about 23.85 million ha with a coastline of about 567 km. It is divided into two main ecological zones: the HFZ of southern Ghana covering 8.2 million ha (34 percent) and the northern Savannah Zone (SZ) covering 15.7 million ha (66 percent). These two zones merge into each other in the Forest Transition Zone (FST) (Table 1). Figure 1 shows the location of the vegetation zones in addition to that of the study area.

Most of the natural vegetation in the SZ has been destroyed for agricultural purposes and there is a great shortage of wood for all purposes.

TABLE 1

**Areas of vegetation zones and included Forest Reserves**

Vegetation zone	Forest Reserves 000 ha (No. of FRs)	Area of vegetation zones	Percentage of area of Ghana	Ecozone
Wet evergreen (WE)	1 634 (266)	657	2.75	HFZ - main zone of chainsawing
Moist evergreen (ME)		1 777	7.45	
Moist semi-deciduous (MS)		3 318	13.90	
Dry semi-deciduous (FST)		2 144	8.98	
Southern marginal (FST)		236	0.99	
<b>Total</b>	<b>1 634 (20% of HFZ)</b>	<b>8 132</b>	<b>34</b>	
South-East Outlier (CS)	836 (24)	2	0.008	SZ
Guinea Savannah (GuS)		14 790	61.98	
Sudan Savannah (SuS)		190	0.79	
Others (thicket, swamp, grass, etc.)		750	3.14	
<b>Total</b>	<b>836 (5% of SZ)</b>	<b>15 732</b>	<b>66</b>	
<b>Grand total</b>	<b>2 470 (10.3% of total)</b>	<b>23 864</b>	<b>100</b>	

#### FOREST RESERVES

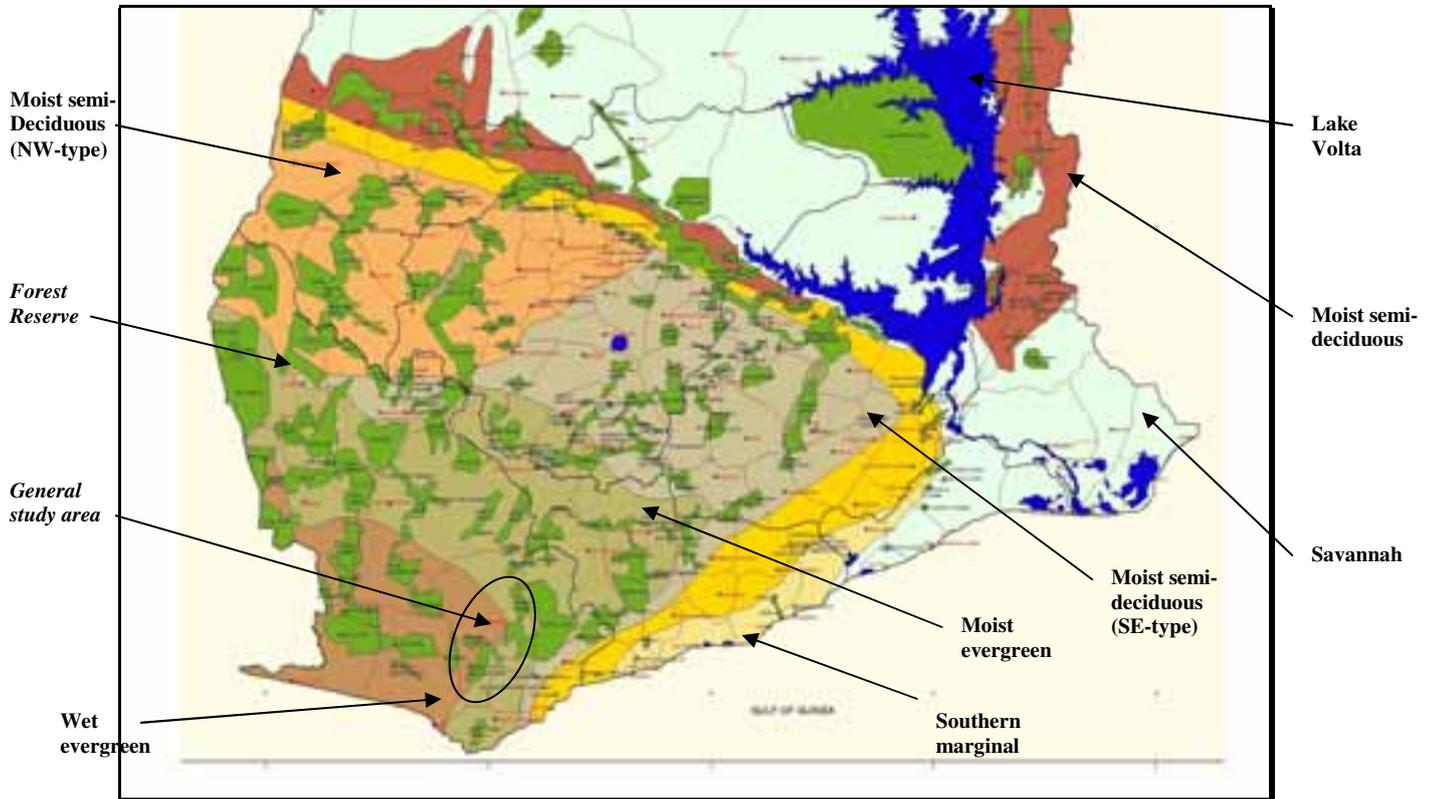
In Ghana, the FRs are legally defined and demarcated areas of forests that have been specifically designated for management and protection of the forest in perpetuity. The title to the land within the reserves remains with the traditional authorities (TAs), i.e. stools and chiefs. However, the FSD of the FC manages the forest resources within the reserves as well as within timber concessions in unreserved areas in trust for the TAs.

The total number of FRs is more than 250. Two hundred and sixteen (86 percent) of them are located in the HFZ and cover about 20 percent of the zone (Table 1). This is the zone of commercial logging that is expected to be managed sustainably for forest products and services. It is also the zone within which the chainsawing mainly occurs. The stocking of the currently desirable timber species is greater in the drier semi-deciduous zones than in the evergreen forest.

The FSD estimates that the extent of total FR area that has had the least disturbance in recent history (“good to excellent”) is about 16 percent. About 55 percent of the reserve area is “degraded” while 29 percent is in “very bad condition” (Hawthorne and Abu-Juam, 1995).

FIGURE 1

**The vegetation zones and Forest Reserves in the HFZ of Ghana**



**OUTSIDE FOREST RESERVES**

In addition to the FR areas, the land and forests outside the FRs are also owned by the TAs. The unreserved forests consist mostly of patches of “old growth” forests in swamps and sacred groves, secondary forests on old farms, isolated trees on farms, and riparian forests along streams, and scattered, small tree plantations.

Unlike the forest reserves, the land use within such areas – except for commercial timber exploitation – is determined by the TAs. There is generally a high incidence of farming outside the forest reserves. During the Second World War, a salvage felling policy was instituted for off-reserve areas based on the assumption that these areas would eventually be converted into farmlands. The policy of sustainable forest management was not applied to the OFRs (also referred to as “open forests”) until the advent of the 1998 Timber Resources Management Act (TRMA). The TRMA seeks to extend sustainable forest management to both the reserved forests and the off-reserve forest areas.

In the OFR areas, the farmers repeatedly complain about the destruction of their crops during logging operations on their farms. The farmers are generally not adequately compensated for the damage caused by timber exploitation. In these circumstances, they would prefer to either destroy economic trees or connive with the chainsaw operators to process them on the farm. The latter is facilitated by the assurance of a much more equitable and readily available share of the proceeds that will ensue from the timber harvesting operation. The FSD’s Interim Procedures (1994), as well as the TRMA, require that farmers consent to the felling of any trees on their

farms as well as payment of compensation for felling damage to crops. However, the assessment of such compensation payments is not fully transparent and the right of appeal is unclear.

### **Social structure and tree tenure in the off-reserve areas**

Trees on farms form a significant source of raw material for the production of chainsawn lumber in particular and the wood industry in general. Hence, an understanding of the farmer–landowner–tree interaction is important with regard to how such trees are accessed and the value that the farmer places on them.

In addition, a number of social and economic factors caution against assuming that, simply left to themselves and with assured increased benefits from forest resources, the indigenes and the migrant farmers in the HFZ with their diverse interests will somehow coalesce around the single goal of sustainable forest management. These factors include the social differentiation and spatial distribution of the groups relative to the forest resource, which in turn determines the degree of dependence on the forest resources. There is also a lack of internal transparency in the distribution of the revenue that accrues from the land, while the interests of the TAs and the migrant farmers are diverse (Brown, 1999). Economic factors such as the role of the TAs in land use and benefit sharing, in addition to the social factors that differentiate the migrants from the indigenes, are discussed below. They give indications as to the importance that the various groups place on the trees on farms and the nearby forests and their effect on the future supply of raw material for the wood industry including lumber production.

Historically, the roles of the TAs in the HFZ have included the opening up of the forest, rather than conserving it. For example, in the Gwira Bansa area to the west of the study area, the TAs insisted until recently that migrant farmers clear the primary forests on lands allocated to them within two years or risk losing the uncultivated portions for re-allocation. The chiefs prefer cocoa cultivation because of the economic value of the crop.

The migrants have – in some instances, for a period of centuries – been the primary agency for the opening up of the HFZ for the agricultural economy and further development of settlements. The management of the migrant process by the TAs has often been a cause of some conflict within the landowning community as most of the income from migrant settlement has accrued to the chiefs themselves. This has led to considerable social tension in many areas between the younger generation and the elders within the indigenous group. Such tensions are generally in connection with both the inequitable distribution of the revenues and the low levels of the rents paid by the migrants. The younger generation resent what they see as their elders' willingness to "sell" their birthright – accusations which are likely to grow as the older generations die off, and as pressures on the land increase.

In addition to their contemporary roles in land distribution, the chiefs are often important rural entrepreneurs and may be important figures in the local economy. Some have significant estates of cocoa, coffee, oil-palm and food crops, as well as interests in timber operations, transport and food processing.

Spatial mapping of the forest would almost certainly concentrate the more recent migrants in the more forested areas, with the indigenes clustered in central places of settlements where services are likely to be found. So widespread are migrants throughout the HFZ, that landowners no longer comprise the majority of the village population in many situations.

These migrants often come from the more impoverished areas of the north and east (Figure 2). They tend to be particularly dependent on the forest for their livelihoods. This dependence is derived from a number of sources:

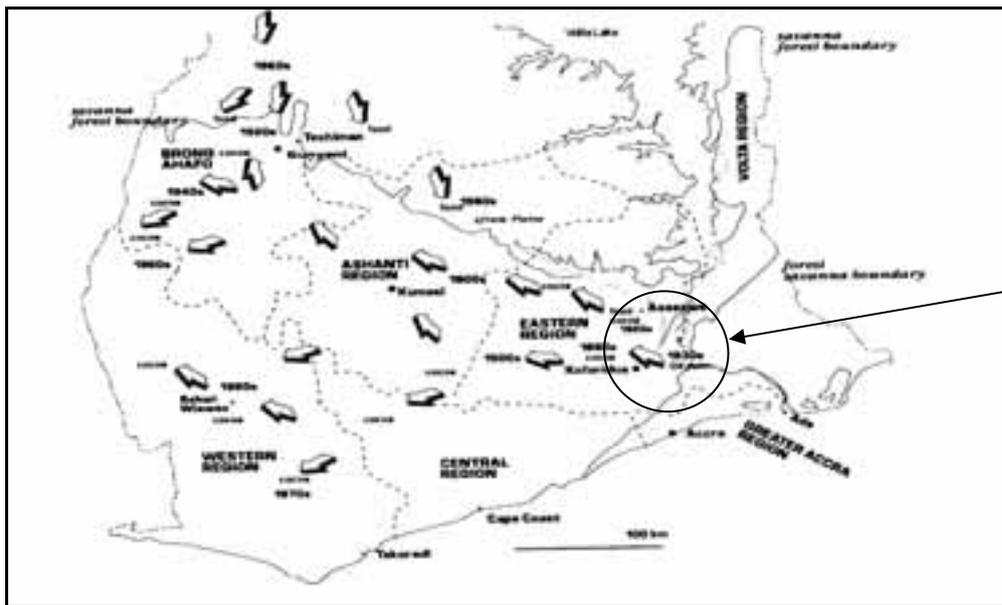
- their roles in forest clearance and hence their close contact with the forest and its products;

- their poverty, which increases their dependence on minor forest products;
- their vulnerability, with non-timber forest products (NTFPs) providing important safety nets in times of stress and when labour work is in short supply.

With regard to the interests of the various social groupings, the chiefs' main interest is to improve their revenue shares. The northern food-crop migrants' interest may be in the opportunity that taungya (a system of cultivating food crops on a plantation by peasant farmers) offers to gain temporary access to land in the FRs on non-sharecropping terms. On the other hand, the migrant cocoa farmers' interest is likely to lie in safeguarding their landholding rights (Brown, 1999).

The aforementioned interests need to be acknowledged and harmonized. In addition, the knowledge and skills of the forest-fringe communities in sustainable forest management should be improved. This would help to ensure that the increase in the flow of benefits to the forest-fringe and forest-dwelling communities will have a positive impact on the livelihood of the majority of them as well as improving the status of the forest resources or the tree cover in the OFR areas.

FIGURE 2  
Movement of cash- and food-crop farmers in the HFZ



Source: Amanor (1996).

### Sustainability of trees in the OFR areas

Field observations and discussions indicate that the coverage of cocoa farms in the study area in particular and the HFZ in general in the unreserved areas is very extensive compared with the other cash and food crops. The off-reserve resource accounts for more than 50 percent of the harvested timber and NTFPs. They also protect vital stream and river sources.

The interest of the migrant cash-crop farmers will lie more in the cocoa tree than the cover crop of timber trees as a result of the higher value that they place on the former. The general understanding between the landowners and the migrants is that the land will be used for farming. Any change in land use would require the consent of the landowner. In the same vein, any tree left standing on the farms belongs to the landowner. However, they do not generally have the capacity to monitor this. Coupled with the introduction of the new light-demanding cocoa strains to replace the established shade-dependent Tetteh Quarshie varieties, these factors aggravate the situation.

The effect of the prime interest of the farmers on the tree cover in the off-reserve areas is twofold. The migrant cocoa farmers are likely to destroy or, more probably, sell off the shade trees in contravention of the 1979 Economic Plants Protection Decree. Fresh clearance of forests for the establishment of cocoa farms may not leave any trees at all as shade trees. The mature timber trees from these farms are usually the source of raw material for the illegal loggers and/or chainsawyers (more probably the latter). It was learned from field interviews that clear felling of forests for cocoa plantations is taking place within or close to the study area, e.g. Samreboi, Prestea and Bameanko.



## Chapter 3

# Forest management

### FOREST RESERVES – WORKING CIRCLES

The FRs in the HFZ have been classified in working circles. A working circle is a forest area that is under a single system of forest management. Table 2 shows that about 47 percent of the FR area in the HFZ is potentially available for timber harvesting.

TABLE 2

#### Classification of HFZ Forest Reserves by working circles

Area category	Basal area (m <sup>2</sup> /ha)	Area (000 ha)	Percent
Timber production	> 15	762.4	46.6
Permanent protection	-	352.5	21.6
Convalescence	< 15 and > 5	122.0	7.5
Conversion	< 5	127.2	7.8
Not inventoried (conversion)	< 5	270.0	16.5
Total reserve area	-	1 634.1	100.0

Source: MLF (1996).

#### Production working circle

This is the timber production area. The FRs are managed principally for the production of timber on a sustainable basis. Every productive FR is managed under a working plan that caters for environmental requirements and local community rights in addition to the mode of exploitation of timber. This objective is achieved through the exclusion of environmentally sensitive areas from exploitation in addition to the regulation of the annual allowable cut (AAC). The AAC depends on: the exploitable yield; girth limits; and the felling cycle.

All forest concessions in reserves are demarcated into compartments of about 100–200 ha each. Prior to the exploitation of any compartment, a 100-percent stock survey is undertaken from which large-scale (1: 1 250) tree location maps or stock maps are compiled to show the species, sizes and position of all trees with a diameter of more than 50 cm at breast height or above buttress. The trees have unique numbers (stock survey numbers) on their stems and these also appear on their respective positions on the stock maps. These maps form a basis for determining the stocking of both the exploitable trees and the replacement crop in addition to facilitating the layout of roads and skid trails.

Additional productive FR areas may also not be available for timber harvesting because of:

- physical conditions and terrain, such as steep slopes;
- remote location and limited access through lack of infrastructure (roads, etc.) and transport;
- other factors, such as low productivity, poor stand quality, and lack of commercial species.

The felling of any tree below a stated girth limit is not allowed. These limits vary according to species. Thus, the number of trees in a given yield is dependent on its frequency distribution within a felling coupe.

A felling cycle of 40 years between consecutive exploitations has been imposed by the FSD. The AAC is generally related to the renewable production capacity of the forest. In the absence of adequate knowledge and experience on natural regeneration coupled with limited funds for

forest plantation establishment, the AAC is frequently determined by a “controlled felling cycle”. The basis for this includes requirements to:

- leave the smaller diameter trees to grow until the trees become exploitable under a second cutting cycle;
- ensure the long-term supply of raw material for wood-processing industries;
- gradually increase the output from lower grades and secondary species by improved marketing and better timber-harvesting methods.

This implies that each compartment may be worked once every 40 years. However, in practice, a group of about five compartments are worked during a period of five years (i.e. periodic felling blocks) in order to allow the concession holder to find markets for the different species in the allocated yield. The exploitation of a concession as a whole is controlled by felling plans that indicate the sequence of working of the periodic felling blocks.

Guidelines with respect to the operations of the concessionaire and the environment are also given in the FSD Logging Manual.

The permanent protection areas are normally unavailable for harvesting. These areas consist of hill and swamp sanctuaries, areas of significant biodiversity, those for security of seed provenance, and fire protection areas. Limited exploitation of accessible areas of these protection working circles may be allowed with the objective of sustainable forest management in mind.

The convalescence areas are those with reduced stocking but which are considered capable of recovering within one felling cycle of 40 years.

Conversion areas are in various stages of degradation, including grassland, and require planting for rehabilitation where there is inadequate regeneration. Such areas are mainly located in the FST.

### **CONTROL OF EXPLOITATION IN OFF-RESERVE AREAS**

Outside the reserves, the main elements of the system are: (i) pre-felling inspections of trees by farmers and contractors; (ii) issuing of felling permits; (iii) payment of compensation for crop damage; and (iv) issuing of conveyance certificates for log removal. Farmers are empowered to monitor timber harvesting on their farms and veto any logging where necessary.

### **FISCAL ASPECTS**

Factors that encourage illegal logging can potentially contribute to chainsaw lumbering. This section discusses some of the past lapses in the fiscal system that demonstrate this effect.

The nominal cost of acquiring timber rights used to be very cheap, making the demand for them high. In addition, by current assessment, annual rents payable on leases are  $\text{¢}1\,500/\text{ha}$  (less than  $\text{US}\$0.01/\text{m}^2$  exchange rate July 2004:  $\text{US}\$1 = \text{¢}8\,800$ ) for FR and  $\text{¢}1\,000/\text{ha}$  for off-reserve areas (Gene, 2003).

Apart from creating the impression that the concession is plentiful – which is not the case in Ghana – low concession rents encouraged speculative acquisition of concessions that were not for immediate needs but to ensure future log supplies. Without adequate protection measures, such “idle” areas are susceptible to illegal logging or encroachment by farms.

Second, such areas might also be sublet to illegal forest operations – such as chainsaw lumbering – for payments that better reflect the market value. Subletting is illegal in Ghana but it does take place. It requires a more efficient administration to monitor it. Last, such a low rent relative to the recognized value creates excessive demand for timber concessions. This

overwhelms the governmental administrative process resulting in delays with regard to the confirmation of the status of an application and considerable efforts by some applicants to influence decisions.

There has been a significant increase in the number of concessions in tandem with illegal loggers (wayside contractors) since 1962. The responsibilities of the forestry authority were consequently increased. This has taken place without the commensurate increase in resources needed for the FC to fulfil its mandate.



## Chapter 4

# Review of forestry programmes

The factors that have contributed to apathy on the part of the landowners and farmers and the proliferation of chainsaw lumbering have gradually emerged from past events coupled with some environmentally insensitive forestry programmes that led to increased illegal logging. Some of these events and programmes are described below. The pre- and post-1994 eras have been separated in view of the significant attempts that were made in 1994 to reverse past policy failures.

### PRE-1994

Prior to the enactment of the FWP in 1994, there was national concern about the status of the environment. Factors contributing to this concern included the unsustainable harvesting of timber in the HFZ; and the administrative allocation of timber rights that increased the number of concession holders significantly. These factors stretched the capacity of the FSD to monitor the exploitation of the concessions.

Table 3 summarizes the pre-1994 era. The ERP led to the legalization of chainsawing as a result of increased demand for lumber to support the dramatic growth in construction activities. Because of the lack of capacity of the FC to control harvesting and the huge export drive to the Far East in 1993, the number of loggers and the amount of illegal logging soared.

TABLE 3

#### Pre-1994 relevant events and programmes

Event	Relevant issues
1948: 1st Natural Forest Policy	Salvage felling in off-reserve areas without replacement introduced; increase in control by the forest service to ensure adequate and stable supplies of timber to support war effort. Beginning of antagonism between forest authorities, farmers and loggers. Beginning of destruction of economic tree species on farms by farmers to prevent logging damage to crops.
1960: Forest Improvement Fund	All links between the FC's management of an FR and accountability to the landowners severed.
1962: Concessions Act & Administration of Lands Act	All timber resources and land vested in and managed by the State. Farmers lose all rights to utilize trees left standing on their farms.
1976	Administrative decision to increase FC's share of royalties retained for forest improvement from 30 to 70 percent.
1983-1988: ERP	Number of log exporters triples. Increased excessive logging. Need to improve balance of payments obscures everything else. Most of the timber production is OFR especially on farms that retained trees. Farmer-logger conflict increases. Lumber requirements for the construction boom under ERP increase.
1989-1997: FRMP	Correction of the adverse effect of forest depletion under the ERP and capacity building of the forest sector institutions.
1991: Legal Instrument 1518	Legal recognition of chainsawing. FC and district administrations to regulate and supervise chainsaw operators.
1993	Opening of aggressive Far East markets. Illegal speculative logging – especially OFR – soars. Other business people and professionals participate in logging. Farmer-logger tension worsens. Pile of logs in the "bush"/harbour wasted.

The ERP was meant to reverse the crisis caused by the collapse of Ghana's principal foreign exchange sectors (cocoa, timber and gold-mining) and by the poor state of the related ports and

harbour infrastructure during the so-called “lost decade” (i.e. 1970–1980). The overall objectives of the programme were to stabilize the economy and to remove bottlenecks to achieve sound and sustained economic growth through appropriate measures.

Assistance was given to selected private and state-owned timber companies to acquire up-to-date machinery. About 50 percent of the ERP credits went into logging equipment, while sawmills and furniture/tertiary mills received 35 and 9 percent respectively. The results in 1987 showed a good rate of return (average of 50 percent/year) on investment in logging and transport equipment. The investments in more value-added processing activities yielded low or zero returns because of a shortage of middle-level skilled personnel.

During the ERP, the need to improve the balance of payments appears to have obscured everything else. As a result of the lopsided support to the logging industry, the timber industry was back on its feet and the number of log exporters had tripled by the end of the decade. Those who were not equipped to log or process wood themselves but had acquired timber concessions in earlier times began to seek rents through third-party arrangements with illegal timber operators and foreign-owned milling concerns that did not have their own concessions. This situation facilitated the accumulation of unlawful revenues by some of the timber contractors. These funds were used to influence the State in order to secure unfettered access to the forest resource. Illegal logging was rife and some contractors flexed their political muscle and declined to pay timber royalties.

Although the ERP was considered to have met its immediate objectives in the forestry sector, it has been criticized as having had a negative impact on the environment by encouraging excessive logging. The latter also reflects the lack of effective control by FC of the harvesting of the volume of timber that it approves for felling by the concession holder. Therefore, a vital lesson from the ERP was that the upgrading of skills in the forestry sector was necessary to complement the introduction of new machinery for the development of the forest industry in order to achieve the desired results.

The Forest Resources Management Project (FRMP) of 1989–1997 was prompted by the recognition of the adverse effects of the depletion of the forest cover in Ghana on agricultural productivity, the availability of wood and other forest products and on the environment.

The FRMP was meant to address the gap in human resources development in the forestry sector that the ERP had not taken into consideration. It was intended to enable the forestry sector institutions to manage the forest resource effectively and to regulate the forest industry according to a sustainable yield. Promotion of conservation and tree planting on farms was encouraged under the FRMP. However, the ownership of trees on farms was not adequately addressed. Support was given for an on-the-job, skills upgrading programme for the wood industry to improve processing efficiency and reduce the production of waste.

Under the FRMP, the Ministry of Lands and Forestry (MLF) was expected to increase royalties and introduce the allocation of concessions through competitive bidding. The achievements under the FRMP were considered insufficient to move it to the planned second phase. A lesson learned was that an effective sector-policy environment and efficient sector institutions should be in place before wide-scale resource management is initiated.

One of the achievements of the ERP and the FRMP was the abandonment of the “command and control” approach to the regulation of Ghana’s economy in favour of market-determined methods.

#### **POST-1994**

The year 1994 marked a major attempt to improve the relationships between the forest authorities, civil society and farmers. In 1994, the second FWP was enacted to ameliorate past

policy failures. The aim of the 1994 FWP is: “Conservation and sustainable development of the nation’s forest and wildlife resources for maintenance of environmental quality and perpetual flow of optimum benefits to all segments of society.” The main objective of the policy is the involvement of all stakeholders for efficient management of the forest resources. The FWP was preceded in the same year by the Interim Measures. These were instituted administratively as an attempt to control illegal logging.

TABLE 4  
**Post-1994 events**

Event	Relevant issues
1994: Interim Measures	FC to monitor logs from stump to port via the “conveyance certificate”. Farmers given power to veto felling of trees on farms. Streamlining of chainsawing permits; task force formed to check chainsawing.
1994: FWP (2nd Forest Policy)	Participation in sustainable forest management introduced. Cessation of salvage felling OFR and introduction of sustainable forest management in OFR.
1995	Complete suspension of all log exports.
1996	Deployment of task force to check chainsawing; FDMP launched.
1997: TRMA	Concentration on timber harvesting. The concept of participation under FWP ignored.
1998: Legal Instrument 1649	Chainsawing prohibited. Relevant provisions of the law that recognized the activity (Legal Instrument 1518 of 1991) repealed.

From 1994, measures were put in place to ensure effective control of illegal forest activities. The events that took place in this respect are summarized in Table 4. The Forest Development Master Plan (FDMP) for the period 1996–2020 was launched in 1996 as a sound basis for implementing the aims of the FWP.

#### **Natural Resources Management Programme**

The NRMP (1999–2003) was designed as the major instrument for implementing the 1994 FWP, the FDMP, the Forest Protection Strategy (FPS) and the National Environmental Action Plan (NEAP) with support from the donor community.

The overall development objective of the NRMP is “to protect, rehabilitate and sustainably manage national land, forest and wildlife resources through collaborative management and to sustainably increase the income of rural communities who own these resources” (MLF, 2001). The NRMP was regarded as the vehicle to improve coordination of aid coming from all donors in support of sustainable natural resource management.

#### ***Policy reforms***

The issues that the NRMP has initiated include: the introduction of transparent and efficient allocation of timber resources and control of overcutting of timber; formulation of the basis for the appropriate pricing of timber and other forest-based products; rationalization of the timber industry and the adoption of appropriate fiscal measures; facilitation of equitable distribution of benefits to forest-owning communities; rationalization of timber industry taxation and other fiscal/incentive regimes; increased stumpage fees for timber and an improved revenue-collection system; and promotion of easy access to land for all stakeholders.

#### ***Legislative reforms***

The legislative reforms that have been undertaken include: the revision of the Forest Plantation Fund Act (2000); the removal of duty on the imported timber for processing (Customs and Excise Duties Amendment Act, 2000); the regulation of investment in the forestry sector (Revision of Ghana Investment Promotion Centre Act, 1994); increases in fines and punishments for forest offences (Forest Protection Amendment Act, 2002); the introduction of competitive bidding in the allocation of timber and other forestry resources (amendment to the TRMA, 1997, and the Timber Resources Management Regulations, 1998).

***Institutional restructuring***

The FC and other sector agencies have been restructured into a corporate body with operational autonomy.

***Collaborative forest management***

With regard to collaborative forest management (CFM), a comprehensive strategy has been developed, but it is still largely at the pilot stage. The main problem has been how to integrate local communities into planning and management.

The limited involvement of civil society and decentralized government agencies in programme implementation have resulted in a situation where programme outputs at the end of the NRMP have not adequately achieved stated participatory management objectives and benefit-sharing arrangements. As part of efforts to address this problem, the FC plans to establish the Forest Forum. This will be a multistakeholder group including local communities and community support organizations (CSOs) that will participate in the decision-making process and the implementation of the natural resources management interventions.

## Chapter 5

# Law enforcement and governance

Forest laws that are necessary for forest management and protection – including the control of illegal forest activities – are enforced within a broader governance context. In the context of forestry, governance involves the rules under which power is exercised in the management of forest resources, and the relationships between the State, its citizens, civil society and the private sector. It includes policy and legal instruments that ensure equity and efficiency. The elements of good governance include: the rule of law, control of corruption, broad-based decision-making and accountability. Weak and inappropriate governance structures may include:

- wide discretionary powers of government officials;
- low accountability of government officials and politicians;
- complex policy, legislative and regulatory frameworks;
- low probability of detection of corruption among government officials and other actors.

The goals and instruments of forest policy are central to the definition of the law enforcement challenge. Policy is the voice of power politics in the forest. Hence, a debate on transparency and the consultation of all stakeholders are critical. Involving all relevant stakeholders, e.g. local communities, government officials, the timber industry, and non-governmental organizations (NGOs), in decision-making makes it less likely that policies will be subverted by the stakeholders. This can be achieved through collaborative forest management and control that is backed by an enabling legal framework. In so doing, the discretionary power of government officials is thereby reduced, which in turn minimizes opportunities for corruption. It requires:

- clarity of policies and processes to all actors;
- sharing of information on the condition and stocking of the forest resources;
- effective dialogue, and incentives for consultations;
- equitable distribution of benefits;
- the sharing of responsibilities, rights and obligations;
- the improvement in “trust” between the government agencies and the communities.

Illegal logging is a major concern that is being addressed by the government under the African Forest Law Enforcement and Governance (AFLEG) process. This section reviews the status of the various elements of governance in Ghana to determine how they can be improved to assist with the minimization of illegal forest activities in general and chainsaw lumbering in particular. The issues considered are: CFM and the relationships between the State and communities; decentralization of implementation; control of corruption; and the politics of law enforcement.

### **COLLABORATIVE FOREST MANAGEMENT**

#### **Access to land and forest resources**

Traditional ownership of land in FRs is undisputed. However, stool lands and natural forest timber are vested in the President in trust for the stools concerned. Since the enactment of the Forest Ordinance in 1927, access by communities to the forests has been restricted.

The right to allocate concessions, acquire unoccupied land, set royalty rates and collect stool-land revenue was assumed by the State in 1962. Therefore, these enactments exclude the timber concession areas (both within and outside the FRs) from the possibility of being managed on a decentralized basis, e.g. through by-laws. The landowners or TAs have thereby been excluded from participating in decision-making with regard to all these aspects since 1962.

In order to reassure the TAs that land ownership within the reserved forests was not being transferred, the landowners were originally granted extensive rights, including:

- receipts from fines;
- annual bounty for reserved land that was not generating timber revenues;
- the right to set timber royalty rates;
- the right to grant timber concessions;
- admitted farms were permitted to remain in FRs;
- maintenance of the customary rights of access to harvest forest produce;
- identification and respect for sacred sites;
- ownership of any trees planted in the reserves by the then Forestry Department (FD) – now the FSD.

Subsequently, most of these privileges were eroded by the Administration of Lands Act (1962) and the Concession Act (1962), in addition to the Forest Protection (Amendment) Law (1986). The current FR use rights include:

- hunting (excluding the use of steel traps);
- fishing (no dams or alteration of water courses allowed);
- collection of deadwood, snails, wild fruits and wild yams for personal use and not for sale (no trees are to be destroyed);
- use of existing bush paths and access to and maintenance of fetish groves in the area.

All other forest-use rights are controlled with permits issued at the discretion of the Forestry Officer.

The 1962 Administration of Lands Act and the 1962 Concession Act contradict the constitutional protection of community ownership of stool lands and forests and, hence, are unconstitutional in this respect. The TRMA compounds the issue by perpetuating the tenets of the above two acts, as well as the restriction of the communities' access to the forests as enshrined in the Forest Ordinance of 1927.

### Tree tenure

Since the promulgation of the Administration of Lands Act and the Concession Act, farmers have lost all rights to the commercial exploitation of timber trees on their farms. As discussed earlier, their access and rights to land and trees in forest reserves have also been restricted.

TABLE 5  
Share of forest revenues (%), 1990–99

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
FC	88.3	89.9	90.1	90.8	88.0	75.1	75.1	85.6	83.8	80.1
Stumpage	25.9	18.3	11.0	16.7	15.3	12.2	12.7	21.3	23.8	80.1
User fees	6.4	6.6	11.3	11.1	9.5	26.9	25.7	21.9	18.1	11.0
Export levies	56.0	65.0	67.8	63.0	63.3	36.1	36.7	42.4	42.0	39.8
OASL	11.1	9.5	9.2	8.8	11.6	24.6	24.7	14.2	15.8	19.6
Farmer	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Others*	0.6	0.6	0.6	0.4	0.3	0.2	0.2	0.2	0.3	0.3

\*District courts, exporters associations.  
Source: FC (2001).

On the other hand, concession holders have been accorded the privilege of harvesting the commercial trees on farms since the enactment of the first Forest Policy in 1948, when salvage felling in the off-reserve areas without replacement was declared. These fellings on farms by the timber merchants peaked during the Economic Recovery Programme (1983–88) and the opening of the aggressive Far East log markets in 1993. It was not until the institution of the Interim Measures by the MLF in 1994 that farmers were given the power to veto the felling of trees on farms. They also became entitled to compensation for the destruction to property and

farm crops. However, the Interim Measures did not have any legal backing. It was the TRMA that enshrined this dispensation to the farmers in law. However, the policy of no commercial exploitation of trees by farmers on farms continued while they derived virtually no benefits from the revenues that accrued from the harvesting of the trees by the concessionaires (Table 5).

#### **Lack of community-based trade in lumber**

Community-related timber rights have yet to be created legally. Their potential to contribute to improving the regional supply of lumber in particular and the well-being of the forest-fringe communities in general is significant.

Rural community groups, DAs, town committees and NGOs can benefit from the issuing of non-commercial timber utilization permits (TUPs) in areas not subject to timber utilization contracts (TUCs) for social or community purposes (Legal Instrument 1649). However, there is a general ignorance among the forest-fringe communities about this benefit. In practice, the TUPs have been allocated to loggers during the period before the adoption of competitive bidding of timber rights in 2003 and thereafter to secure raw materials for the timber industry.

Legal Instrument 1649 prohibits the use of chainsaws to convert logs into lumber and the trade in chainsawn lumber. This prohibition makes the application of the facilities available to the communities under the TUP system cumbersome. Under this law, the communities are obliged to hire the services of either a certified timber processor or sawmiller for the conversion of the trees that may be allocated to them into lumber. This is neither practical nor affordable for the communities and has the tendency to drive them into illegalities. The communities should in principle be able to convert logs from the officially allocated TUPs into lumber by the most convenient means available to them.

Legal Instrument 1649 limits the inhabitants in the vicinity of a timber concession to only offcuts and branches after harvesting operations have ceased, while leftover logs are vested in the FC. This may stem from the deep-seated distrust on the part of the FSD as a result of the lack of its effective application of the laws and regulations to control timber-harvesting operations.

Timber-rights allocation procedures are too cumbersome for the communities. For example, no harvesting of timber is allowed without a TUC. The formation of companies is required before the granting of TUCs. The requirements for the evaluation of TUC applications by the Timber Resource Evaluation Committee (TREC) are beyond the possibilities of the forest-fringe communities. There should be the possibility for community cooperatives formed by the land/forest-owning communities (or including the owners with full recognition of their rights) to acquire timber rights and operate them under the supervision of the FC.

It has been argued that increasing the tenure security of the landowners by granting them full rights over timber trees would seriously weaken the position of tenant farmers. However, conservation of trees on farms requires the strengthening of the farmers' claims to the revenue generated from the natural trees that they nurture. Hence, any national policy that asserts landowners' claims must also ensure that sitting tenants are not evicted for the sole purpose of liquidating the assets on their land (Brown, 1999).

#### **Distribution of forest revenue**

The landowners do not consider that a forest reservation is a paying concern. Hence, they do not invest resources in forest protection and management. The communities and landowners in particular have been against the inequitable distribution of the revenues that accrue from the forests on their land as prescribed by the Constitution. In accordance with the latter, 10 percent of the revenues accruing from stool lands shall be paid to the Office of the Administrator of

Stool Lands (OASL) to cover administrative expenses. The remaining revenue shall be disbursed in the following proportions:

- 25 percent to the stool through the TA for the maintenance of the stool in keeping with its status;
- 20 percent to the TA;
- 55 percent to the district assembly (DA) within the area of authority of which the stool land is situated.

These allocations are made up of the management costs of the FC. Table 5 shows the distribution of forest revenues from 1990 to 1999. During that period, the FC's share was 75–90 percent of the total revenue. The table also confirms the fact that there are few direct benefits to the local communities and farmers. Any benefits accruing to them have been largely incidental to planning processes.

Therefore, the farmers have no incentive to preserve timber trees on their farms. Hence, they destroy the saplings of timber species. In addition, farmer and landowners are predisposed to connive with illegal logging. The tenant farmers in particular cooperate with chainsawing of the mature timber trees in order to forestall damage to their crops by the heavy machinery used by the concessionaires during harvesting. By so doing, they receive a share of the chainsawing in the form of a portion of the lumber produced or cash exchange for their share of the lumber.

#### **Lack of “trickle down” of revenue shares to the forest communities**

The DAs' share of the forest revenues are consolidated in their revenues and used to cover their own expenditure. The non-transparent manner in which most of the DAs manage their expenditure is a major source of proposals for a reduction in their share. TAs, as landowners, receive stumpage to maintain their status, as legislation demands. The two institutions have limited responsibility in forest management.

The forest-fringe communities generally do not object to the TAs' share of the forest revenue. Owing to the lack of trickling down of such benefits from both the TAs and DAs, their expectations are that there should be a direct allocation towards their development (Gene, 2003).

#### **Management rights**

The 1927 Forest Ordinance provided two ways for the management of the nation's forests that are still valid. These are:

- by the owner under the guidance of the forest authorities;
- by the forest authorities on behalf of the owner.

There is an expressed legal opinion that the FC does not have exclusive rights to manage all FRs and protected areas. Therefore, it has been concluded that clarification of management responsibilities from a legislative point of view is required (Gene, 2003).

The main spirit of the 1994 FWP is the involvement of all stakeholders for the efficient management of the forest resources for their benefit. This is appropriate as it makes sense to have those who are most dependent on the forests as custodians of the resource. However, the TRMA concentrates mainly on commercial timber utilization. Therefore, there is an inadequate legal framework for the practical implementation of the collaborative spirit implied in the FWP. This creates legal insecurity and is a disincentive for the communities to collaborate with state agencies to ensure sustainable forest management.

The FC is currently the sole manager and regulator of the forest resources. In the absence of an independent institution exercising oversight responsibility over the enforcement of rights and responsibilities by the FC, it has been argued that these roles are conflicting and prone to the promotion of corruption within the FC.

Another view is that there is a structural conflict between the planned role of the FC as the main protector of Ghana's forests, and its financial dependence on the harvest from those forests. At the same time, the drive to self-financing also risks creating a situation in which social outreach activities (including community forestry) come to be seen as "loss-making enterprises", and vulnerable to marginalization as the private-sector ethos takes hold. Where forest revenues are substantial and the logging industry retains a disproportionate share of the power, there is no guarantee that the creation of self-funding agencies will lead to increased responsiveness to the public interest, indeed it could lessen it (Brown, 1999).

The current involvement of the communities in forest management has been mainly with regard to piloting NTFP harvesting, including: changes to the permit system to lower the transaction costs for the rural poor and domestic user; NTFP domestication; the contracting out of FR boundary maintenance to the nearby communities; and the introduction of a programme of modified taungya for the rehabilitation of degraded reserves under which local residents gain access to farm plots on-reserve for a period of three years in return for nurturing seedlings of timber species. Leadership and commitment to providing information, consulting and actively engaging forest-fringe communities is generally weak across the levels of actors (politicians, top public sector executives, senior and junior managers, and other officials). There is no law binding these actors to do so (Gene, 2003). For CFM to work, it is essential that there be shared responsibility and benefits between government officials and the communities.

Therefore, the alienation of the owners of the forests or trees is a contributory factor to their aiding and abetting illegal logging and chainsaw lumbering.

### **DECENTRALIZATION**

The decentralization law (the 1993 Local Government Act) stipulates that government departments should be decentralized and come under the DAs. However, the central government has hesitated to enforce the decentralized system, especially with regard to revenue-generating sectors such as forestry and mining. In line with government thinking, the FC argues that timber is a national strategic resource and that its effective management would be compromised if it were to be decentralized and become part of the DAs. Being a corporate body, the FC does not find itself legally bound to be part of the local administration (FC, 2001).

Responsibility for off-reserve timber resource management was transferred from the DAs to the FD (now the FSD of the FC) in 1996. This was an apparent reversal of the decentralization process and tended to strengthen the concession system that favours the large-scale wood processors (who concentrate mainly on the export markets) but denies small-scale producers access to forest resources (Sasu, 2004).

The decentralization scheme envisaged under the NRMP was mainly with regard to the protective FRs in the SZ in the north of the country where no commercial harvesting of timber takes place. The TRMA currently only provides for the marginal involvement of DAs and TAs in the procedures for granting timber rights in the HFZ. The FC manages the off-reserve forest resources and imposes a 40-percent stumpage deduction that is considered "rogue taxation". Decentralization of the management of the forest resources needs to be revisited after capacity building of the relevant DAs and the TAs in forest management and protection in order to facilitate improved local decision-making and governance for sustainable forest management.

An observation has been made that the non-involvement of the chiefs by the local government, the FC decentralization system as well as the decision-making process has adverse effects on policy implementation as the chiefs are in control of land and forests. As is the case with tenure insecurity, the isolation of the chiefs predisposes them to collaboration with illegal logging and chainsawing activities.

The FC may have been decentralized, but in some crucial circumstances such as the commercial felling of trees on farms, the regional and district forestry officers cannot approve such operations without the consent of the chief executive of the FC. Approvals for the felling of trees on farms for commercial purposes by the district and regional offices of the FC are limited to two and three trees, respectively. With regard to the felling of more than five trees, the farmer is expected to apply to FC headquarters in Accra. This smacks of a lack of trust in the field staff of the FC and may be rightly so from past experiences in certain instances. Therefore, the procedure becomes very cumbersome for a farmer in a remote rural area. With the surveillance capacity of the FC being so limited, this process is liable to be frequently flouted by the farmers. The section of Legal Instrument 1649 that makes it an offence for a public officer to be involved in illegal forest activities needs to be applied rigidly where necessary in order to improve delegation of power to the district forest offices. However, the efficacy of the implementation of this law is doubtful without third-party monitoring.

### **FOREST REVENUE COLLECTION AND DISTRIBUTION**

Revenue losses to both forest owners and the forest managers have occurred through:

- lack of transparency between the TAs and the forest authorities;
- cumbersome legislative procedures and strong industry politicking that delays the review of stumpage fees;
- unlawful increases in the FC's share of the stumpage fees;
- log export suspension and the consequent distortion of log prices on the local market;
- inefficiencies in the processing of timber by the industry that do not facilitate the payment of prices close to the prevailing international ones for the raw material.

#### **Lack of transparency between TAs and the forest authorities**

The forest management fees are determined by the MLF in consultation with the FC and the OASL according to Legal Instrument 1649. The forestry authorities are obliged to account for stumpage fees collected to the OASL. In all these cases, the land/forest-owner is not consulted, unlike in earlier times when the FC accounted directly to the owners.

#### **Revenue losses through collection of stumpage fees**

The royalty system was such that the forest resource was significantly undervalued. The close relationship between the state and business community in the colonial era continued after independence and royalties remained low. The royalty policy in Ghana has been shaped by the timber lobby, which has managed to keep royalty levels particularly low by skilful and expedient politicking. Forest policy change has hardly ever been the result of "rational" analysis. It has almost always been the result of compromises and trade-offs among various interests and players (Kotey *et al.*, 1998).

The royalties from the exploitation of the forests were poorly collected and even more poorly distributed. The royalty rates were revised in 1992, 1994 and 1999. The next revision after 1999 took place in 2003 (FC, 2001). Therefore, in real terms, the stumpage rates deteriorated as a result of the lack of their indexation to inflation. The FC was expected to undertake quarterly reviews of stumpage using a mechanism developed in 1998. However, the interpretation of the law is that legislative consent is required to ratify revised rates rather than an executive instrument. This is a complex procedure and has led to extensive delays. Coupled with the lack of effective implementation of the law by FC, the result has been considerable losses to both the forest authorities and forest owners, which has in turn affected the development of the forest sector in general.

It has been estimated that the lack of political will to update the stumpage fee caused a revenue loss of about US\$1.4 million and US\$4.6 million in 2000 and 2001, respectively, for the recorded legal harvests (assuming a 100-percent collection rate). The arrears in stumpage have currently been calculated at about US\$2.4 million as a result of the poor collection rates. In

effect, this is a subsidy from forest owners and a denial of livelihood opportunities for forest-fringe communities (FC, 2001).

#### **Revenue losses via unlawful management charges**

The FD was permitted to retain a portion of the FR owners' royalties for forest improvement not exceeding one-third of the royalties. The then Chief Conservator of Forest (now the executive director of the FSD) was obliged to render accounts of the expenditure of the forest management expenses to the landowners. In 1960, the Government also centralized control over revenue derived from FRs. The Forest Improvement Fund (FIF) was created in 1960 to "establish an improvement fund for forest reserves and to provide for the control of revenue derived from forest reserves". The act that created the FIF effectively severed all links between the management of a particular reserve and accountability to the landowners of the use by the FSD of the revenue generated by that reserve.

The ability of the FSD to improve the status of the FRs was highly dependent on the level of the net proceeds from the sale of timber to concessionaires. The FSD was short of funds and unable to secure an increase in the timber royalties paid by concessionaires from Parliament. Hence, in 1976, it took an administrative decision to increase its share of the stumpage retained for forest improvement from 30 percent (as prescribed by the Forest Ordinance) to 60 percent. This is not backed by law and is based on a unilateral specification of forest management costs.

#### **Losses via wood processing and marketing**

The forest industry has historically received the patronage of the State. For almost 25 years, it has enjoyed protection from international competition for the timber resources in which forest owners also have an interest. Cumulatively, the industry has built itself on the accumulation of a "surplus" value that the State has failed to capture. In the early 1990s, it was estimated that about 70 percent of the real value remaining in wood-processing operations was wasted because the industry was generally inefficient. Therefore, the industry is unable to pay close to the international price for the raw material (FC, 2001).

#### **TRACKING OF CHAINSAWN LUMBER**

An efficient and effective tracking system for chainsawn lumber would be crucial for eliminating illegalities in the application of this lumber production technique. It would help to keep tree/forest harvests within the approved limits, so promoting the sustainability of the timber stocks.

A largely paper-based log monitoring system has been developed and operated by the Timber Industry Development Division (TIDD) and the FSD. The system tracks trees from stock-survey maps through felling and extraction, using district felling returns, to the mill (log measurement certificates), and on to export using permits that detail the ship on which the logs leave country. The objective is to monitor all of the logs produced in the country, at checkpoints and log yards. However, because of staff limitations, the system does not cover all of the smaller sawmills operating in rural areas.

Generally, the tracking system does not accord the local market the same attention as the export market. In addition, there are difficulties in reconciling reports across the two divisions, coupled with unnecessary time lags, that render such reports redundant. As a result, there are some "leaks" in the system, with logs being produced but never declared. Examples are: chainsaw operators who convert logs to lumber in the forest; bush sawmills or saw benches that dress and further process chainsawn lumber that are not visited; and logs that arrive at sawmills overnight (TIDD staff do not work after 5 p.m.) and are never declared to the authorities.

Because of its illegality, it would also be dangerous to control chainsawing in the bush even if the necessary resources were available. Therefore, the main safe avenues left for the checking of chainsawn lumber are during transportation and at the local lumber markets. Most of the

controls are currently concentrated on the transportation of the produce while the markets (mostly in urban areas) are virtually untouched.

The FC is in the process of addressing the recognized weaknesses in its capacity to monitor logging and wood-processing activities. It is embarking on a comprehensive review of its timber-flow audit systems. A robust system of ascertaining the origins of wood and wood products that will meet the scrutiny of independent third parties is being designed. The FC is seeking to review and strengthen forest control and law enforcement in order to ensure continued access to major export markets by Ghanaian wood processors and exporters. Through such a system, the FC expects to bring wood-processing capacity in line with sustainable resource management in the longer-term.

The peculiar nature of the production of chainsawn lumber (Chapter 8) – especially the possibility of operating in areas with limited infrastructure – and the very scattered locations make the practical tracking of the produce to the stump in the forest or farm very difficult. It has been estimated by the FC that about 40–50 percent of logs produced are utilized locally and are not transported as far as TIDD checkpoints to be recorded. Most of the logs that are chainsawn fall in this category. Hence, the timber-flow audit system that is under preparation by the FC has to consider these aspects.

#### **FOREST LAW ENFORCEMENT**

In spite of the measures in place to strengthen the regulatory mechanisms for sustainable forest management, the forest resources have been subjected to a dramatic rise in the rates of exploitation, mainly by logging and sawmilling interests, as well as by chainsaw operators and hunters. The weak monitoring capacity of the FC has been aggravated by a recent reduction in staff of more than 40 percent under the ongoing restructuring of the FC. In order to contain these threats and to ensure the sustainability of the nation's resources, the Government has resorted to a series of ad hoc control measures. These include the registration of chainsaw operators and strict felling controls for off-reserve harvesting (see also Chapter 6).

These measures have not been very successful in preventing the rapid decimation of the country's forest estate. Estimates indicate that chainsawing accounted for about 1.7 million m<sup>3</sup> of timber harvested in the country in 1999. Illegal logging also accounted for about 0.9 million m<sup>3</sup>, which together with an AAC of 1.1 million m<sup>3</sup>, gives a total harvest of timber in the country of 3.7 million m<sup>3</sup> (FC, 2001).

The fines that were in force before 2002 (when the Forest Protection (Amendment) Act was enacted) were ridiculously low and the legal sanctions were outdated. Indeed, they served as stimuli rather than as deterrents to the rampant committing of forest offences. These deficiencies led to excessive depletion of the most marketable timber species, causing severe forest degradation and an escalated rate of deforestation by agricultural encroachment. The lack of local community involvement in forest resource protection and an absence of comprehensive and coordinated medium- to long-term plans further aggravated the situation.

The FC is in the process of forming CFCs to help control illegal forest activities such as chainsawing, logging and bushfires. More than 10 CFCs have been formed throughout the HFZ.

There appears to be ignorance about forestry laws among the cooperating law-enforcement agencies and the general public. There has also been little incentive to rigorously enforce forestry sector legislation, particularly against forest offences, owing to the relatively low penalties imposed by the courts and delays in prosecuting offenders. In some cases, there are problems as to which courts should try forestry cases, who should investigate and who should be prosecuted. In order to address this deficiency, the FC has held a series of workshops

involving the judiciary, police and forestry officers to review forest legislation and enforcement mechanisms. The effect of such meetings is yet to be felt on the ground.

An example of how crucial effective collaboration of the law enforcement agencies is was observed during the fieldwork at the Tarkwa District Forest Office. A CFC in the district had impounded a lorry transporting chainsawn lumber and sent it to the district manager for prosecution. The case was taken to the local court only for the lorry owner to be cautioned and discharged based on the fact of lack of knowledge of the alleged culprit on the difference between sawmill lumber and chainsawn lumber. No forest law was quoted in the judgement. Newspapers and radio stations in Ghana have reported similar cases including alleged collusion of some members of the security agencies and forestry officials.

There is overland smuggling of wood products including chainsawn lumber. This activity contributes to shortages in the domestic market. The FC has held meetings with the Customs, Excise and Preventive Service (CEPS) to ensure that the export of lumber is covered by the necessary TIDD export documentation. However, the necessary procedures have yet to be formalized and implemented.



## Chapter 6

# Processing and marketing of lumber

### **TRENDS IN THE EVOLUTION AND CONTROL OF CHAINSAWN LUMBER**

Until 1947, lumber was imported into Ghana from the United States of America. From that time, the British Government and other foreign private enterprises introduced wood processing including sawmilling in Ghana. Four major wood industries were established in Ghana in 1947–48: African Timber and Plywood at Samreboi, Gliksten West Africa at Sefwi Wiawso, Takoradi Veneer and Lumber in Takoradi (all in Western Region), and Mim Timber at Mim (Brong Ahafo Region). Other smaller mills were subsequently established in Kumasi and Takoradi that produced both for export and the local markets.

In 1972–73, the Government of Ghana introduced a scheme to allow its participation in the above foreign-owned timber companies, and Ghanaian managers – mostly forestry professionals – were attached to these mills. The expropriation was completed in 1977. Prior to the state participation, all the above companies produced to the instruction of their principals, mainly for the export market. Their sales were handled by agents with exclusive territorial and products rights. African Timber and Plywood, Gliksten West Africa and Mim Timber exported more than 80 percent of their outputs, while Takoradi Veneer and Lumber exported less than 50 percent of its output (P-E IO, 1981). Its policy had been to manufacture higher-added-value items than the others.

High inflation and a shortage of foreign currency to import spares for equipment and machinery followed as a result of the decline in the national economy. This was coupled with inadequate support from the foreign principals of the firms after state participation, and thus their production declined.

#### **The advent of chainsaws**

The results of the interviews indicate that the chainsaw was introduced in Ghana in 1960 to improve forest exploitation. Only the four mills mentioned above and the Sunyani School of Forestry (now the College of Forestry) were in possession of chainsaws in the early 1970s. The then FD (now FSD) also introduced chainsaws into the country in the 1960s for its programme of reforestation of degraded forest reserves.

Soldiers from peacekeeping missions as well as Ghanaians repatriated from Nigeria are said to have brought a lot of chainsaws into the country in the mid-1980s. These chainsaws were mainly used for site preparation for farming, fuelwood and charcoal production. Discussions at FSD headquarters in Accra indicated three theories with regard to the origins of chainsawing:

- extension of past pitsawing skills;
- importation of the skills by returnees from Nigeria;
- by trial and error in the Tafo area in Eastern Region.

The skill may have been developed as a result of a combination of two or all of the above factors. The results of the above discussions at the FSD offices show a consensus that chainsawing originated in the Tafo–Suhum–Oda area in Eastern Region. This area had the first organized group of chainsaw operators and the highest number of registered chainsaw operators when their registration was undertaken as a result of Legal Instrument 1518 (1991). The Suhum–Kade–Anyinam–Begoro area in the same region was also noted for large stocks of chainsawn lumber during the early stages of the activity.

The above is not surprising as there is high competition for land for farming within the ecozone in which the above-named towns are located (see Figure 2). The area is also the most densely populated part of the country. Therefore, it is likely that there was extensive use of the chainsaw for farm-site preparations there. The utilization of the felled trees for fuelwood and charcoal must have taken place extensively. Chainsawing is reported to have been commenced in the area by chainsaw operators that produced fuelwood from the manufacture of beams initially followed by the smaller dimensions of lumber.

### **POLICY RESPONSES TO CHAINSAW LUMBERING**

Capital inflows into the economy led to a real-estate boom during period of the ERP (1983–88). Lumber for construction was consequently in high demand and the local sawmills could not satisfy this demand. From the time of the ERP, sawn timber became more of an export commodity. Because of inefficiencies in further processing of logs in most of the mills in the country, there was serious competition between millers and loggers to export logs – from the ERP period until the export of logs was suspended in 1995 – as this provided the quickest turnaround.

#### **Legalization of chainsaw lumbering**

In 1991, the Trees and Timber (Chainsaw Operations) Regulations (Legal Instrument 1518) were enacted to streamline the production of chainsawn lumber in order to satisfy the increased demand for lumber for the construction boom. Discussions at FSD headquarters indicated that permits were issued for the conversion of timber-harvest residues before the enactment of Legal Instrument 1518. This law recognized chainsaw lumbering and set out schemes to regulate its operations by the FSD and the DAs at local level. These included:

- registration of chainsaw owners at the DA in the area of their residence;
- application for permits through the relevant DA, which recommends issuance to the FC district manager. The district manager issues the permit after being satisfied with the inspection of the area concerned.

The implementation of Legal Instrument 1518 was problematic as there was confusion as to whether the district chief executive (DCE) or the FD should issue permits for the felling of timber for the manufacture of chainsawn lumber. The Lands Commission was in charge of the off-reserve areas during that period and it was also issuing similar permits even though it did not have the capacity to monitor them in the field. In addition, there were abuses of the law by some DCEs, TAs and FC district managers. Discussions at the FSD offices indicate that the TAs may have been much more involved in chainsawing than the public officers. Such abuses encouraged rent-seeking behaviour among other government officials who were responsible for the implementation of the law. Some of the issued permits were reused several times by the applicants.

Some communities requested licenses from the FD to fell trees under the pretext of using them to produce lumber for local projects. When permits were issued, the trees felled usually exceeded the numbers approved. Invariably, all the logs from such trees found their way onto the market. The log export boom to the Far East in 1993 seems to have exacerbated this behaviour (GIPF, 1993).

#### **The Interim Measures**

The Interim Measures were introduced in early 1994 by the MLF in order to streamline the issue of permits for chainsawing. However, these measures did not have any legal backing but they were expected to supersede Legal Instrument 1518. The sole responsibility for the issuing of chainsawing permitting was given to the FD subject to conditions of sound forestry practices. The following were also to apply:

- Applications for trees for community projects to the FD had to be accompanied by project documents (including a bill of quantities) approved by the appropriate DA.

- Pre- and post-felling inspections were to be undertaken by the FSD, DA, the farmer concerned and representatives of the landowner in order to confirm compliance with conditions of the FSD permit.
- The lumber produced from trees issued on a particular permit was to be covered by an FSD conveyance certificate for the purposes of their transportation out of the felling area if necessary. Complaints by farmers could be used to suspend the issue of a conveyance certificate.
- TIDD roadside checkpoints were to stamp and sign the felling permits accompanying lumber in transit and send monthly returns to the FD.
- All chainsaw lumber on the market was expected to be covered at all times by both the felling permits and the certificates issued by the FD and be available for inspection whenever necessary by either FD or TIDD staff.

On paper, the pre- and post-felling checks were good. However, the institutions involved – particularly the FSD – did not have the necessary resources to undertake such intensive inspections in the rural areas. There was no evidence from discussions at the FSD and TIDD offices that the lumber markets were inspected with regard to the felling permits and the conveyance certificates. Therefore, it appears that there were inadequate checks in the rural areas while the bulk of the chainsawn lumber that found its way into the urban lumber markets was not inspected as required.

#### **The formation of task forces**

The effect of the Interim Measures on chainsawing was short-lived. As a result of concerns expressed about indiscriminate felling of trees for chainsawn lumber production, timber task forces composed of staff of the FSD, police and the military were formed in 1996 to crack down on culprits and confiscate chainsawn lumber, equipment and vehicles used in the operations.

Members of the task forces and resource-owning communities that assist with the arrest of chainsaw operators receive 30 percent of the seized lumber from the chainsaw operators as an incentive to support the control of chainsaw operations and other forest offences. Despite this incentive, it is alleged that some FC staff members and some officers of the security forces connive with the chainsawn lumber trade. On the other hand, the payment of such incentives to the forest-fringe communities that had provided assistance was reported to have been lagging. The Tarkwa Forest District Office (in the selected study area) has established a revolving fund to ensure prompt payment of the incentive to the forest communities in order to sustain their interest in assisting with the control of the activity. This is said to have had a significant impact on the support from the communities.

The task forces have failed to make the desired impact mainly because of the high demand for lumber, the connivance of some of the public officials, and the low penalties involved. Even so, it is considered within the FC circles that their absence would have made the situation even worse.

#### **Ban on chainsaw lumbering**

Abuses of the permit system for chainsawing coupled with the inability of the FC to regulate it led to the outlawing of chainsawing. Legal Instrument 1518 was repealed and the TRMA and the related Legal Instrument 1649 enacted. The latter legislation focuses on public officers committing offences with regard to illegal timber operations. This is laudable, but since it has been alleged that some public officers are involved with such illegal activities, it would be difficult for the same officials to objectively implement the law. It could be seen as a form of “self-certification”. Hence, the involvement of independent entities such as NGOs with no vested interest would be required (e.g. the Green Earth Movement, and Forest Watch).

However, the ban has failed to resolve the chainsaw conflict and it has led to forest officials spending a greater part of their time dealing with chainsaw operators sometimes in violent

circumstances. Chainsaw lumbering operations continue and are currently reported by the FSD to be on the increase. Some of those interviewed alleged that some DAs are still issuing permits for chainsawing in their areas.

Under the NRMP, it was considered that the incorporation of chainsaw lumbering into a comprehensive and market-oriented approach would result in increased efficiency of the logging industry. It was also felt that there would be no need to force saw millers to sell to the domestic market as appropriate timber pricing would remove or minimize market distortions created by the supply of cheap chainsawn lumber. In addition, the leading roles that the DAs and the local communities could play in reducing the negative impact of chainsaw lumbering were observed (World Bank, 2003). These measures were scheduled for implementation during the second phase of the project that was not realized.

#### **Alternative livelihood schemes for chainsaw operators**

The MLF has planned to engage chainsaw operators in the following alternative livelihood programmes:

- forest plantation thinnings;
- forest reserve boundary demarcation and cleaning;
- forest plantation coppice management;
- land clearing and other related activities with regard to the ongoing National Forest Plantation Development Programme (NFPDP);
- assistance to timber companies with the harvesting in more difficult areas;
- recovery of timber offcuts in the forest.

Results of discussions at the FC and FSD offices did not provide any evidence that the chainsaw operators are exercising the above options. It is mainly the local communities that are involved in the taungya system being practised under the NFPDP. It appears that the earnings from chainsawing are more lucrative to the operators than those from any of the above-proposed schemes.

Discussions in the study area gave the pattern of ownership of chainsaws for chainsawn lumber production as depicted in Table 6. This shows that the dealers own most of the chainsaws that are used in the activity. They are said to be the main sponsors of chainsawing and also provide financial support, fuel and trucks. However, interviews with some chainsaw operators indicate that it is more profitable to hire a chainsaw than operate as an employee of a dealer.

In order to minimize the potential risk of losing a cargo of chainsawn lumber in transit through the intervention of the task forces, most dealers prefer to pre-finance the operation and purchase the lumber at “bush price” when delivered at the urban lumber markets. The risk is thereby shifted onto the chainsaw operator. At times, some chainsaw operators also fail to deliver causing losses to the dealer.

Results of an interview with a timber-concession holder at Ateiku show that TUC holders in the study area generally pay their chainsaw operators about ₪600 000/month plus daily “chop money” of about ₪10 000 and a monthly bonus based on productivity, making a total of about ₪820 000/month. However, the operators do not find this attractive enough and so they change jobs frequently. On the other hand, the operators that produce chainsawn lumber receive ₪2 500 per board produced in the Ateiku area. At a daily production of about 50–120 boards (trees already felled), the chainsaw operator can potentially earn an average daily wage of about ₪212 000 (i.e. about ₪4.7 million/month or about six times the wage of a TUC holder).

TABLE 6  
**Pattern of chainsaw ownership in chainsawing**

Type of ownership	Tarkwa <sup>1</sup> (%)	Jomoro <sup>1</sup>	Ateiku <sup>1</sup>
Operator/rented	15	-	40
Operator/owner	5	40	-
Dealer <sup>2</sup> /owner	80	60	60
Total	100	100	100

Notes:

1 Towns in the study area.

2 Interviews in the field indicate that dealers include furniture factories, construction firms and traders in chainsawn lumber. It also includes those that are linked to the export of chainsawn lumber and products to neighbouring countries such as Burkina Faso, Mali and Niger.

Given the pattern of chainsaw ownership shown in Table 6, removing only the operator – as has been part of the MLF strategies – from the chain will partially solve the problem. The dealers will find alternative ways of reconnecting the market chain. Therefore, measures that would affect all categories of ownership would be more effective. These include those that would make the business less lucrative, such as ensuring that the necessary taxes are paid in addition to the payment of the prevailing log prices to the farmer. Only when the aforementioned distortions are removed will most of the proposed alternative livelihood schemes proposed by the MLF above make the necessary impact by reducing the numbers of operators and dealers. Otherwise, the alternative livelihood programmes need to offer similar rewards to chainsawing in order to be effective.

#### **Deterring the trade in chainsawn lumber**

From discussions at the TIDD offices, it was learned that a three-month grace period had been proposed by the MLF for all dealers in the chainsawn lumber business to dispose of their stocks. The grace period was to be used for a national awareness campaign about the menace posed by chainsawing. Thereafter, all chainsawn lumber that had not been disposed of in the various timber markets was to be confiscated and the dealers prosecuted. A deadline of 31 October 1999 was set.

A six-man task force was set up to conduct educational campaigns against chainsaw lumbering throughout the country. Other responsibilities of the task force included the determination of the modalities for the supply of lumber to the local market by the sawmills. In addition, they were to liaise with the DAs with regard to the monitoring of lumber supply by the sawmills and the trade in chainsawn lumber.

The campaign included discussions with sawmillers and timber dealers. An inventory of the existing stocks of chainsawn lumber at the time was also undertaken, but with some resistance and threats to the lives of the TIDD staff involved at some of the lumber markets. These data were meant to be used to monitor the stock levels until the above deadline as well as to provide information on the volumes of lumber that would have to be placed on the market when the chainsawn lumber was taken off. The plan was to import and supply the chainsawn-lumber dealers with mobile mills to be used in place of the chainsaw for lumber production. Discussions at the TIDD indicated that most of the dealers requested more time to dispose of their stocks beyond the deadline. Some of them became very aggressive towards FC officials. Funds could not be raised to purchase sawmill lumber for the purposes of replacing the chainsawn lumber when taken off the market. No portable mills were provided. The campaign eventually stalled with the advent of campaigns for the 2000 national general elections.

However, a suggestion that came from the Timber Dealers and Users Association, in Volta Region, with regard to the type of mobile mill required was very interesting and is still relevant for consideration for the future. It indicated that the region is generally hilly in nature. The land

is owned by individuals and is farmed extensively. Apart from the payment of compensation to many farmers, it stated that the extraction of logs through the farms would cause a lot of conflicts with the farmers. Hence, its proposal was for a “mobile mill” that “is carried to the bush to saw the logs on a ‘where it is’ basis” (TDUA, 1999).

### Supply of 20 percent of lumber production to the local market

In 1999, special TUPs were issued to 78 selected small-scale and medium-scale mills (referred to as selected mills) nationwide to produce lumber for the local market. The TUPs were granted to these selected mills as a means of guaranteeing their raw-material needs. The permits are expected to be renewed annually subject to the satisfactory performance of the holders. Each mill is required to submit value added tax returns and other documentary evidence of supply to the local market for the purposes of the renewal of the permits.

In addition to the above, the MLF (in consultation with the FC) issued directives to the effect that all TUC holders should supply 20 percent of their total lumber production to the domestic market in accordance with Legal Instrument 1649, with effect from March 2001.

The total supply of lumber by both the selected and non-selected mills in 2002 was about 102 363 m<sup>3</sup> (Table 7). On the assumption by the TIDD that the total volume of lumber – air-dried (AD) plus kiln-dried (KD) – that was exported that year constituted about 80 percent (i.e. 207 329 m<sup>3</sup>) of the total production from the sawmills, it can be calculated that the non-selected mills supplied 32 percent (i.e. 82 265 m<sup>3</sup>) of their total production to the local market, thereby exceeding the volume required under the law. Based on the same assumptions, the contribution of the selected mills was about 8 percent of the total production while the combined supply of the selected and non-selected mills was about 39 percent. About 25 out of the 78 selected mills (i.e. 32 percent) were active in 2002 (TIDD, 2003).

TABLE 7

### Local lumber supplied by selected and non-selected mills, 2002

Region	Selected mills		Local lumber supplied			Percent
	Total (no.)	Active	Selected mills (m <sup>3</sup> )	Non-selected mills	Total	
Ashanti	17	7	8 237.351	21 539.043	29 776.394	29
Brong Ahafo	19	5	3 952.898	16 098.105	20 051.003	20
Central	7	2	924.933	3 423.187	4 348.120	4
Eastern	15	8	4 166.965	4 959.608	9 126.573	9
Greater Accra	1	0	20.951	1 235.920	1 256.871	1
Volta	10	2	1 167.071	0	1 167.071	1
Western	9	1	1 627.696	35 009.029	36 636.725	36
Total	78	25	20 097.865	82 264.892	102 362.757	100
% of total supply			20	80	100	

Source: TIDD (2003).

Similarly, with a total lumber export volume (AD plus KD) in 2003 of 198 912 m<sup>3</sup>, the calculated supply to the local market in 2003 with regard to the selected, non-selected and combined mills was 6, 20 and 26 percent, respectively, of the total production for that year. However, the proportion of selected mills that were active had reduced to about 10 percent as shown in Table 8 (TIDD, 2004).

TABLE 8  
**Local lumber supplied by selected and non-selected mills, 2003**

Region	Selected mills		Local lumber supplied			Percent
	Total (no.)	Active	Selected mills (m <sup>3</sup> )	Non-selected mills	Total	
Ashanti	17	2	4 359.533	10 894.122	15 253.655	23
Brong Ahafo	19	4	3 724.628	9 704.382	13 429.010	21
Central	7	0	417.762	1 806.048	2 223.810	3
Eastern	15	1	4 586.049	4 580.904	9 166.953	14
Greater Accra	1	0	0.000	1 020.276	1 020.276	2
Volta	10	1	1 092.862	0.000	1 092.862	2
Western	9	0	1 096.862	21 674.375	22 771.237	35
Total	78	8	15 277.696	49 680.107	64 957.803	100
% of total supply			24	76	100	

Source: TIDD (2004).

Discussions with TIDD staff indicate the following as some of the reasons for the non-performance of the selected mills:

- Poor stocking of commercial timber species of most of the TUPs allocated (these are mainly in the off-reserve areas and do not overlap any TUC area). Consequently, the cost of harvesting was high.
- Some of the mills did not have access to forest harvesting machinery and sawmilling equipment.
- The staff of some of the mills do not have the requisite skills in forest harvesting and sawmilling.
- Several selected mills – especially in Western, Central and Volta Regions – have closed down.
- There are allegations that some DAs tend to favour the registration of chainsaws more than the selected mills.
- Market distortion by the low-priced chainsaw lumber.
- Recent increases in the price of cocoa have resulted in demands for high compensations from farmers for the destruction of cocoa trees, especially in Brong Ahafo Region where high Social Responsibility Agreements (SRAs) were also demanded.
- Some of the species that currently have low marketability in the lumber form (e.g. *Ceiba*) were sold in log form in order to improve the cash flow of the selected mills concerned.
- Many of the selected mills in Ashanti and Central Regions operate bench-top edgers in parallel with their mobile mills. However, these mills tend to concentrate more on the re-processing of seized chainsawn lumber that they purchase from the FSD task forces. It is suspected that this may provide an avenue for filtering chainsawn lumber onto the market.
- It is alleged that some of the selected mills exported the lumber of high-value species.

Interactions with some of the TIDD staff involved with the monitoring of the selected mills indicated that despite the above shortcomings, those selected mills that are in operation do not have any problems with marketing their lumber locally.

With an estimated local lumber demand of more than 450 000 m<sup>3</sup>, the combined production of the selected and the non-selected sawmills of about 100 000 m<sup>3</sup> or less is inadequate. Hence, innovative measures would have to be put in place to provide incentives to encourage the sale of more lumber (whether sawmill or chainsawn) on the local market. Chainsawn lumber production has been made illegal in Ghana as a result of past ineffective coordination between the FC and the DAs and the abuse of the system by the public officials concerned and some of the communities. If these past lapses can be rectified, there should be no reason why chainsawn

lumber cannot be made legal again to augment supply of lumber to the local market. An example is the case of Guyana where chainsawn lumber can be produced legally with the appropriate controls of the allocation of the timber resource and effective tracking of the lumber produced.

**Sharing of forest revenue**

The Government has established a benefit-sharing scheme between itself, chiefs, forest-fringe communities and local communities in order to ensure the cooperation of the stakeholders in combating illegal forest activities including chainsawing. The sharing mechanism has yet to become law (for implementation).

**Use of “legal” lumber in government contracts**

As a measure to reduce the demand for chainsawn lumber, it has been proposed that the Ministry of Works and Housing, Regional Coordinating Councils and the DAs (being among the major consumers of lumber) should direct all contractors working on government projects or any public construction activities to source their lumber from the mills or any other legitimate sources. This has yet to be implemented.

## Chapter 7

# The marketing chainsawn lumber

### IMPORT/EXPORT OF CHAINSAWN LUMBER

Lumber dealers from the wood-poor neighbouring countries formerly came to purchase lumber from the local sawmills. Owing to the unreliability of supplies from the latter, these dealers have switched to chainsawn lumber and are said to be among the major financiers of such operations. They buy chainsawn lumber, dress it and sometimes mix it with millsawn lumber for export.

Data on exports of dressed chainsaw lumber and other products manufactured from it are hard to obtain. It is sometimes difficult to differentiate between the dressed chainsawn lumber and that produced from a sawmill. The lack of coordination between the FC and the CEPS (which checks the import and export of goods into and from the country) makes the differentiation of the statistics between the sawmill and chainsawn lumber difficult. In most cases, the nature of export documentation for the dressed chainsawn lumber does not follow the procedure that facilitates the capture of the information on them by the TIDD. The activities of the TIDD are also skewed too much towards the export market.

Discussions at the Tarkwa District Office indicated that there has been some importation of chainsawn lumber from Côte d'Ivoire through the border towns. Attempts to prosecute the importers in Ghana have failed as the product is legal in the country of origin. The imported chainsawn lumber allegedly finds its way to the north of the country and also to Burkina Faso. This brings an international dimension to the trade in this product.

### LOCAL DEMAND FOR LUMBER

An estimate of the total lumber requirement for domestic consumption is about 456 000 m<sup>3</sup> (TIDD, 1995). Figure 3 gives the breakdown by region and end use. The combined demand of the furniture and construction industries was 97 percent of the total for the country, with the furniture industry alone accounting for 74 percent. The lumber demand of the small-scale carpenters is about 64 percent of the total for the furniture industries (i.e. about 219 033 m<sup>3</sup>). The medium- and large-scale industries account for the rest. Greater Accra and Ashanti Regions together account for about 73 percent of the total demand while the demand in Greater Accra Region alone is 43 percent. It was estimated in the 1995 TIDD study that the national average per capita consumption of lumber was 0.029 m<sup>3</sup>, with consumption being highest (at 0.106 m<sup>3</sup>) in Greater Accra Region (the national capital region).

### SUPPLY OF CHAINSAWN LUMBER TO THE LOCAL MARKET

Table 9 shows the total volume of lumber retailed in Ghana. The contribution of chainsaw lumber to the total amount retailed is more than 70 percent. This indicates that a clampdown on chainsawing activities without appropriate measures to fill any vacuum in supply would adversely affect the local lumber market and, in turn, the furniture and construction industries.

TABLE 9

#### Lumber retailed on the local market, by type

Year	Sawmill lumber (m <sup>3</sup> )	Chainsawn lumber	Total	Chainsawn lumber (%)
1995	102 574	282 156	384 730	73
1999	195 000	509 460	704 460	72
2002	102 363	272 968*	375 331	72

\* Estimated from trend (i.e. 72 percent of the total for that year).

Sources: TIDD (1995), FC (2001) and TIDD (2003).

The figures in Table 9 do not include the chainsawn lumber that is dressed and exported to some of the markets of the Economic Community of West African States (ECOWAS). It is

alleged that some of the dressed chainsawn lumber finds its way into the overland and overseas export markets.

FIGURE 3  
Estimate of local lumber demand, 1995

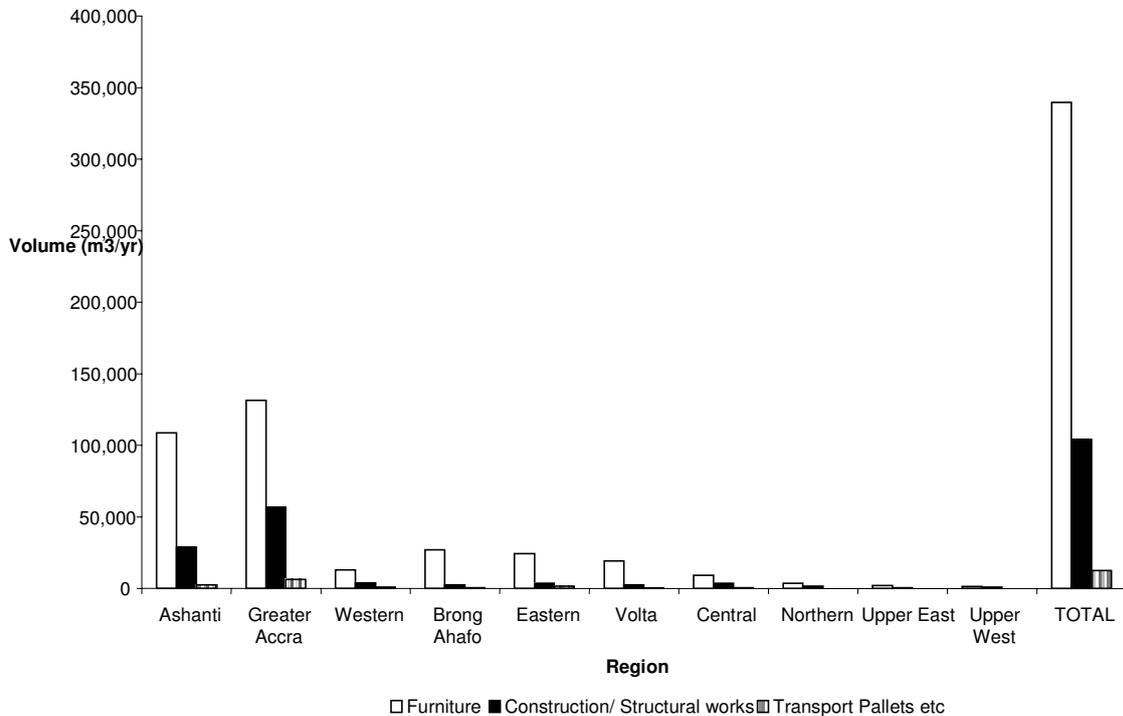


Table 10 gives the latest available breakdown of the retailed lumber on the local market by end use and type. Most of the local demand for lumber is by the furniture companies and the small-scale carpenters (i.e. 74 percent). The figures in Table 10 indicate that more than 90 percent of the lumber used by the furniture companies and the carpenters is of the chainsawn type.

TABLE 10  
Locally retailed lumber by end use and type, 1999

End use	Sawmill lumber (m <sup>3</sup> )	Chainsawn lumber	Total	Chainsawn lumber (%)
Furniture companies/carpenters	23 400	377 000	400 400	94
Structural/construction	136 500	-	136 500	0
Households	35 100	132 460	167 560	79
Total	195 000	509 460	704 460	72
Average price (US\$/m <sup>3</sup> )	253	151	-	60

Source: FC (2001).

The major estate developers, e.g. Regimanuel Gray, and Ghana Real Estates Development Association (GREDA), tend to rely mainly on quality sawmill lumber. The latter industry is made up of mainly real-estate developers who appear to be in a better position to afford the “expensive” sawmill lumber because of the taste of the clients (mostly the middle class and above) and the prices that the houses they build attract. However, they also complain of an inadequate supply of quality lumber.

### FACTORS AFFECTING ABILITY TO PAY BY THE FURNITURE INDUSTRY

The results of the above analysis of the local lumber demand indicate that the furniture companies and the carpenters constitute a major domestic market driver for the production of chainsawn lumber. The lower price of chainsawn lumber compared with sawmill lumber may be the cause of their attraction to it. As a result of the following production inefficiencies, considerable waste is produced during the manufacture of furniture (Odoom, 1996):

- lack of skilled middle-level management to achieve production efficiency;
- improper drying of lumber before use;
- lack of knowledge of the best way to gain market access, especially to the overseas export market.

The final products are generally not up to export standard. Coupled with inadequate working capital and the high interest rate on bank loans, this may account for the inability of furniture factories and the carpenters to pay the “real” prices for quality lumber.

### CHAINSAWN LUMBER TRADE FLOWS

It was estimated in 1995 that about 57 percent of the lumber retailed in Western Region was sourced from chainsaw lumber. The figures for Central, Ashanti and Brong Ahafo Regions were 98, 85 and 40 percent, respectively (TIDD, 1995). The figure for Ashanti Region is very significant as the region has the highest concentration of sawmills and bush mills in the country.

TABLE 11

#### Major chainsawn lumber markets in the HFZ, November 1999

Region	Major chainsawn lumber retailing centres
Western	Takoradi, Axim, Prestea, Tarkwa, Bibiani
Eastern	Koforidua, Suhum, Akim Oda
Ashanti	Mankranso (Anloga, Ksi), Boetey (Obuasi), Akwatia Line (Ksi)
Brong Ahafo	Duayaw Nkwanta, Sunyani, Berekum, Techiman, Wenchi
Volta	Ho, Akatsi, Agbozume, Sogakope, Ada Kasseh, Hohoe, Aflao
Central	Agona Swedru, Kasoa, Cape Coast, Mankessim
Greater Accra	Ofankor, Accra, Ashiaman, Tema

The TIDD undertook a snapshot stocktaking at the major chainsawn lumber retail centres including those shown in Table 11 in November 1999. The stocks in the markets of Ashanti, Greater Accra and Central Regions together made up 72 percent of the total. The proportions with regard to Greater Accra and Central Region were 25 and 29 percent, respectively; for Ashanti and Volta, 18 and 12 percent, respectively. Central and Ashanti Regions appear to still be the major trading centres for chainsawn lumber.

Most of the chainsawn lumber produced in Western, Central and Eastern Regions is sent to the timber markets in Greater Accra Region – especially Accra. The Anloga (Kumasi), Techiman and Accra timber markets appear to be the main centres for the bulk export of dressed chainsawn lumber and wood products (e.g. door and window frames) to Ghana’s northern wood-poor neighbouring countries.

### FACTORS AFFECTING DEMAND FOR CHAINSAWN LUMBER

There is extensive reliance on chainsawn lumber because it is readily available and much cheaper than that from the local sawmills. The prices of chainsawn lumber are on average about 40 percent of that of the lumber from the sawmills (TIDD, 1995).

The data for this study (Table 12) were obtained in the Accra timber market in July 2004. These are prices of lumber delivered at the market without mark-ups. The data indicate that the prices at the time were about 30–50 percent for mixed redwoods and 20–60 percent for whitish timber of millsawn lumber. Apart from the price, the supply of chainsawn lumber is said to be more reliable than lumber from the sawmills because of the high reliance of the latter on the

exports markets. Some of the sawmills are also going downstream and hence do not normally sell to the local market. The quality of the lumber that is generally supplied to the local market is Grade 3 and fuelwood. The dimensions also tend to be dictated by the export market and these generally differ from those demanded on the local market.

TABLE 12  
Price difference – Accra timber market

Size	Chainsawn (¢)		Millsawn (¢)		Price difference (¢)		Price difference (%)	
	Mixed redwoods	Whitish wood	Mixed redwoods	Whitish wood	Mixed redwoods	Whitish wood	Mixed redwoods	Whitish wood
2" × 4"	40 000	18 000	70 000	30 000	30 000	12 000	43	40
2" × 6"	50 000	30 000	80 000	40 000	30 000	10 000	38	25
1" × 12"	50 000	30 000	80 000	40 000	30 000	10 000	38	25
1" × 9"	35 000	12 000	53 000	30 000	18 000	18 000	34	60
2" × 2"	18 000	8 000	35 000	15 000	17 000	7 000	49	47
1" × 2"	10 000	5 000	16 000	8 000	6 000	3 000	38	38
2" × 3"	22 000	16 000	40 000	20 000	18 000	4 000	45	20
3" × 3"	25 000	18 000	50 000	25 000	25 000	7 000	50	28
1" × 3"	12 000	6 000	18 000	10 000	6 000	4 000	33	40

Note: July 2004 prices without mark-ups (¢1 = US\$0.0001136).

### Quality of chainsawn lumber

The kerf of the chain used for chainsawn lumber production is the same as that used for felling trees. As a rule of thumb, for each 1/32" kerf (0.08 cm), there is a loss of about 2 percent in yield. The kerf of a chainsaw mill may be more than 9/32". Hence, there is at least an 18-percent loss in yield through the kerf alone. If the rough surface of the lumber has to be dressed for furniture production, this leads to an additional 20–30 percent wastage. The extent of waste generated through the kerf and the dressing of chainsawn lumber makes it necessary that the appropriate technologies be introduced to reduce the effect of these factors and the vibrating hand of the operator on the yield and quality of the lumber. Generally, apart from the skill of the operator, no technology is used in chainsawing in Ghana. However, there are various devices on the market that could be tested and adopted for chainsawing in the country. These include the Logosol, the Granberg chainsaw mill, the Hudson chainsaw mill, the Alaskan mill, the Procut portable chainsaw mill, and the beam machine.

The wastage from chainsaw lumbering in the bush can also be considerable. The tops and buttresses as well as the sections of the tree trunk that are not in multiples of 14–16 ft (1 ft = 30.48 cm) are usually left in the bush. Interviews with the Jomoro Chainsaw Owners and Operators Association in the study area indicate that logs of about 8 ft in length can also be chainsawn. The marketing of lumber in the local market is normally by numbers of pieces and not by volume of the pieces. Hence, there is no incentive to cut longer pieces even if the dimension of the logs makes this possible. Therefore, the sale of lumber by volume should be adopted by the local market to encourage the utilization of as much of the raw material as possible.

### SPECIES AND SIZE PREFERENCES

From interviews at the TIDD, it was realized that another important factor that explains the patronizing of chainsawn lumber by furniture companies and carpenters is their continued reliance on the traditional species. The preferred species include odum, utile, afromosia, baku, edinam, sapele, hyedua, walnut and asanfina. These species are overexploited and scarce with afromosia and baku requiring FC permits for their harvesting. Consequently, they fetch premium prices on the overseas export market. In addition to the declining value of the local

currency, makes the export market more lucrative to the sawmillers than the local market with regard to the cited species.

Because of the ineffectiveness of the FC in tracking or monitoring illegal log harvesting for chainsawing, the more daring of the furniture manufacturers and carpenters use this method to source beams of the preferred species as raw material for their production. Such cargo is normally either transported at night, concealed in containers or hidden under other types of cargo.

The sawmills prefer to sell their lumber (rejects and residues of inferior qualities e.g. slabs, edgings and offcuts of dimensioned wood) in bulk rather than in pieces. Most of them do not invest in resources to refine these materials arising for sale on the local market. However, the small-scale carpenters are not organized to buy lumber in bulk from the sawmills. This reduces their chances of obtaining the lower-quality lumber supply of the desired species from the sawmills. Results of interviews with a lumber dealer in Takoradi show that mixed materials arising from the sawmills in the form of lumber and fuelwood are sold in the area by tonnage. Mixed redwoods fetch about ₵2 million/tonne while the whitish wood is sold at about ₵1 million/tonne. This is mainly patronized by the bakers in the area, who usually buy on credit. The attitude among the small-scale carpenters is such that they would prefer to buy lumber of 14–16 ft in length, while the sawmills may have in stock lumber that is 7–8 ft long and cheaper and useful for the manufacture of furniture parts, doors and windows (Odoom, 1996).

#### **Forest-harvesting patterns**

About 50 percent of the AAC is harvested. These are the species that are known to the markets. Most of them are preferred because of their appearance and natural durability. The remainder is held in the TUC areas awaiting markets. The preferred species are generally overexploited. The prices of their products are consequently increasing. Therefore, it is essential that the furniture and construction industries, which are the major consumers of lumber, begin to utilize the lesser known and lesser used species (LUSs) alongside the traditional species for the future sustainability of their businesses. This is also a convenient way of introducing the LUSs onto the markets. In addition, it will make the harvesting of the LUSs by the TUC holders more economic than if the latter species were exploited in isolation.



## Chapter 8

### Effect of chainsawing on selected communities

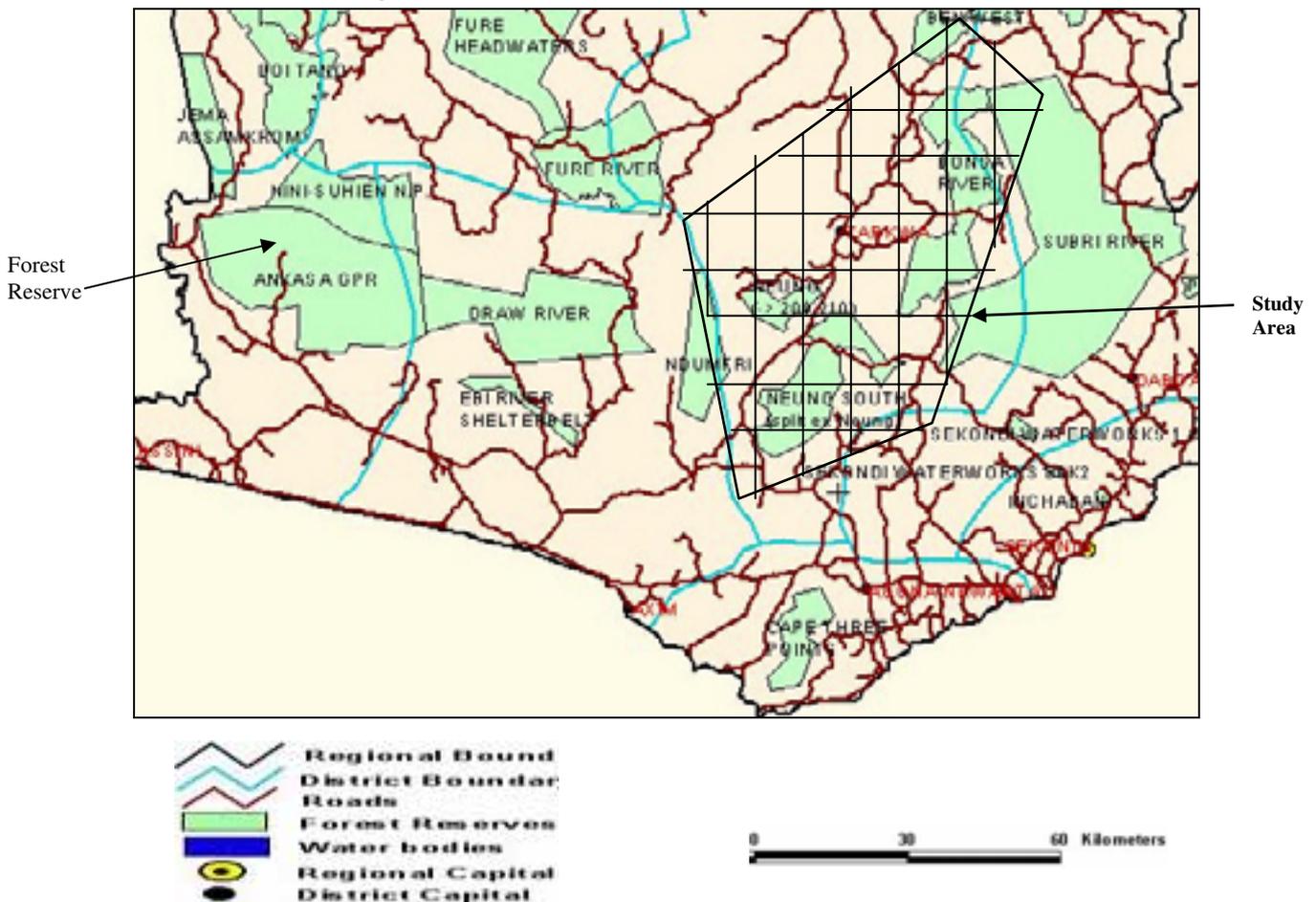
#### STUDY AREA

The selected study area is situated in Wassa West District (Western Region), with Tarkwa as the district capital (Figure 4). The population of the district is about 232 000 (about 12 percent of the regional population). About 36 percent of the district's population is urban. The main occupation of the people in the rural areas is farming. The topography is generally hilly. Two of the major gold mines in the country are located near Tarkwa and provide a significant number of employment avenues to the local inhabitants.

The western part of the area lies in the Wet Evergreen Forest zone where the major crops grown are coconut and food crops. On the other hand, the main crops grown in the eastern section that falls within the Moist Evergreen Forest zone are cocoa and food crops. Oil-palm, cassava, plantain and maize are common to both zones.

FIGURE 4

#### Location of the study area



There was an opportunity to interview representatives of CFCs in ten villages in the study area at a workshop organized by the Tarkwa Forest District at Tarkwa in June 2004. These

villages/towns were: Yaw Mensakrom, Kodwakrom, Obeng Krom, Wassa Akwapim, Kuranti, Epieso, Esuoso, Bonsawire, Anyinase and Atwereboana.

The nearest sawmills are located in the regional capital (about 80–90 km from Tarkwa). The general impression was that the interviewees found the chainsaw to be fast and efficient for land clearing. The services of chainsaw operators are usually hired for such purposes, including the production of lumber from trees on farms where payment is made with a share of the produce. At times, the farmers' share of the produce is bought cheaply because of their ignorance of the market value of lumber. The operators sometimes fail to pay for the trees on the farms. However, the chainsaw operators are tolerated because of the farmers' need for lumber as well as the poverty in the rural areas. Their involvement with chainsawing is mostly with regard to the sale of trees on farms and/or the provision of services as carriers to headload the lumber from the stump to the nearest roadside. They are paid about ₵1 000 per board, this amount may increase with distance. Some of the chainsaw operators live in the study area, but most of them are linked to the lumber dealers.

The CFC representatives stated that in those cases where the operators undertake chainsawing with FSD permits, more than the number of trees stipulated on the permits are usually felled. As a result of their alienation from forest management in the past (in addition to their ignorance about the potential benefit of the forests to their livelihoods), they did not feel obliged to monitor such illegalities. They were very grateful for their enlightenment through the CFC system and requested that copies of permits for chainsawing should be given to the CFCs to enable them to assist with monitoring chainsaw operations in rural areas. They indicated that they generally do not need much lumber for their construction works. Hence, most of the lumber produced is transported to the urban centres. Previously, "softwoods" (e.g. *funtum* and *subaha*) were dressed with cutlasses into the desired lumber shapes and utilized. As a result of the pressure for farmlands, these species are virtually extinct.

In places such as Ateiku at the northeast corner of the study area, chainsawing by operators from Eastern Region was indicated to have been so intense that the stocking of trees in the off-reserve areas has been drastically reduced. Therefore, the chainsaw operators have migrated to the neighbouring areas in the Dunkwa area in Central Region (e.g. Osenso, Oppong Valley, Agyepoma and Osenagya). The carpenters that were interviewed there complained of a shortage of lumber. They have to travel about 20 km to Twifo Praso to buy planed chainsaw lumber. The CFCs in the Ateiku area are said not to be very active as a result of the lack of incentives for them to operate. This is unlike other areas where the transportation costs to meetings are refunded by the FSD or where the members are assured of a share of the stumpage from timber harvests in the area that they protect (e.g. Benso).

The chief of Brofoyedur near Ateiku has been very much involved in the campaign against chainsaw lumbering. He was of the opinion that chainsawing should be legalized to enable the payment of the necessary forest fees for the chiefs to receive their share for the development of their areas. The chief indicated that with the activity being illegal all their share of revenue is lost to those involved in the business.

At the Tarkwa chainsaw lumber market, scarcity of the preferred redwood was reported. The dealers indicated that they would have preferred to sell sawmill lumber as there are fewer problems associated with it (e.g. no controls by task forces and CFCs). However, they indicated that the sawmill supplies are unreliable. The quality that is made available (after delays of about one to three months) is mostly in the form of slabs or lumber of sizes different from those required on the local market. The supplies of chainsawn lumber are declining as a result of scarcity of trees in the OFR areas coupled with controls by the relevant public officials and the CFCs.

## **PRODUCTION CHARACTERISTICS OF CHAINSAWN LUMBER**

Chainsawing has certain characteristics that make it attractive for those who indulge in it or encourage it. Production of the chainsawn lumber can be undertaken at the site where the tree is felled with a minimum of movement of the logs. Hence, it is preferred by farmers as it causes less damage to their crops than the conventional harvesting techniques. The technique is amenable for application in areas including those that are inaccessible to the usual skidding and transport equipment.

Apart from the sound of the chainsaw, the activity can be very elusive to the forestry authorities especially in remote areas with inadequate road infrastructure. All the equipment used (chainsaw, monkey jack, etc.) as well as the produce are headloaded to and from the nearest roadside or bush landing with cheap labour in the rural areas. The main skill required is that of the chainsaw operator. Therefore, it is easy to bypass the FC forest or tree-harvesting control mechanisms. Chainsawing can consequently be undertaken with low capital equipment and a high input of cheap labour.

The implication of the above characteristics is that any improvements in the technique of chainsawing must take the portability of the equipment and the non-utilization of heavy extraction equipment into consideration. The utilization of the equipment close to the felled tree with a minimum of the lifting of the log from the ground is also important. These considerations are important for their acceptability (especially by farmers) in addition to ensuring minimum cost increments in the acquisition of the required sawing equipment.

## **ACTORS INVOLVED IN CHAINSAWING**

From observations and discussions in the field, chainsawing activities involve a multiplicity of overlapping interests and a complex network that links various actors from local to international level. At the regional level, these actors are lumber dealers in the wood-poor neighbours of Ghana (e.g. Burkina Faso, Mali and Niger). At the national level, they are:

- national government agencies that deal with forest management, the collection of forest fees and law enforcement (e.g. the FC, police and law courts);
- regional administrations;
- the sawmilling and logging industry (Ghana Timber Millers Organization, and Ghana Timber Association).

At the local level, the actors are:

- district administrations;
- those involved directly or indirectly (e.g. chainsaw owners, chainsaw operators, carriers, and transporters);
- suppliers of chainsaws and spares;
- buyers of chainsaw lumber (downstream processing industry, construction firms and households);
- sponsors of chainsawing (including some of the chainsaw lumber dealers);
- planer mills that dress chainsawn lumber;
- affected owners (traditional rulers and local communities including farmers);
- community forestry organizations.

In Ghana, an estimated 50 000 people are engaged in this activity. The five regions that have been identified with significant chainsawing are: Western, Ashanti, Brong Ahafo, Central and Eastern.

## **THE EFFECT OF CHAINSAWING ON THE STAKEHOLDERS**

### **Distribution of benefits in the production chain**

Results of discussions in the field indicate various types of organization for chainsawn lumber production (Figure 5).

***Chainsaw owner/chainsaw operator level***

At this level, there are four forms of organization.

The most common form is where chainsaw owners (some landowners/chiefs, some senior public officials, dealers and retailers, furniture/door/window-frame producers, speculative investors, etc.) employ chainsaw operators. The chainsaw-ownership pattern that was deduced from the study indicates that most chainsaw operators function on this basis (see Chapter 6). The produce is usually divided into three portions. One portion goes towards the maintenance of the chainsaw (kept by the chainsaw owner), another goes to the chainsaw owner, and the third parcel is given to the chainsaw operator. In addition to the chainsaw, most of the owners in this category usually provide the fuel for the chainsaw as well as the trucks to transport the produce to market.

Another form of organization is where a chainsaw operator rents a chainsaw from a chainsaw dealer on a hire-purchase basis for the business. The operator can also be the owner of the chainsaw.

The third form is where a farmer may employ the services of a chainsaw operator to fell and convert the logs into lumber for local construction needs. Similarly, a lumber dealer may buy trees from a farmer and have them converted into lumber by a chainsaw operator. In both cases, the produce is shared on a fifty-fifty basis.

The fourth form is where a concession holder in arrears to the FC employs the services of a chainsaw to produce chainsawn lumber for sale. Chainsawing in such circumstances is said to be employed to evade controls by the FC. Some furniture factories also use this method to source the lumber of trees that require special permits for their felling from the FC.

***Resource “owner” level***

Results of discussions at the FSD offices show that there are two main sources of supply of raw material for chainsawing. These are: purchase of trees on mainly cocoa farms; and illegal logging.

The four principal reasons for the sale of trees on farms by farmers to chainsawyers were given as:

- Economic. The farmer may sell some of the scattered trees in times of financial need.
- Crop protection. It prevents damage to crops by the heavy equipment used for timber extraction.
- Reduction of shade for the new variety of cocoa that requires more light than the old variety.
- New farm-site preparations.

Field interviews with some chainsaw lumber dealers indicate that the farmers can generally identify the tree species, but that they generally lack knowledge about the commercial value of the trees on their farms. Therefore, the predominant factor determining the price of trees sold on farms is the farmers' estimate of the extent of damage that may be inflicted on the farm by the falling tree (in addition to that caused by the skidding of the log using conventional methods). Consequently, the effect of the species and size of the tree on the price may be secondary. The farmers charge about ₪200 000–500 000 per tree for mixed redwoods while prices for LUSs range from ₪60 000 to ₪200 000 per tree.

Therefore, the value paid by the chainsawyer for the tree may be below its stumpage value. Such payments reach neither the TAs nor the FC. This is similar to the lack of trickling down of forest revenues from the TAs and DAs but in the opposite direction. In some cases, well-known chainsawyers in a community may give some “drinks” annually to the chiefs. Some chiefs are also alleged to be directly involved in commercial chainsawing. Sometimes, the farmers are

outwitted with regard to payments and may therefore just receive a deposit or lose out altogether. In the latter case, the tree is obtained virtually free of charge.

Chainsawing is intimately linked to illegal logging. Trees may be felled in unencumbered forest concessions or they may be stolen both within and outside FRs (secondary or riparian forests) or on farms. There have been some cases of chainsawing in FRs. Usually, these operations (i.e. felling, chainsawing and transportation) are undertaken at night using powerful lamps attached to the head of the chainsaw operator.

In the wake of the adoption of competitive bidding, expired concessions were placed in a pool without adequate protection by the FC. In addition, there were no incentives for the protection of the short-term TUPs that were issued to the industry during the same period and thereafter. These concession and permit areas are part of the areas that are usually affected by illegal logging and chainsawing.

It is also alleged that some TUC holders with very large areas also use chainsaw operators as subcontractors in sensitive areas in order to protect their TUC areas and interests. Results of discussions at the FSD offices indicate that some loggers have shifted to chainsaw lumbering after the ban on the export of logs and the lack of payment of economic prices by the millers, which has rendered logging unattractive.

#### *Service-provider level*

The service providers include: the carriers that headload the lumber to the roadside; and the truck owners that are hired to transport the products to the local market either directly or through saw benches for the dressing of the lumber before their delivery to the market. It was learned from discussions at the FC that the dressed chainsawn lumber may be used locally or exported to the neighbouring wood-poor countries or as part of overseas export parcels.

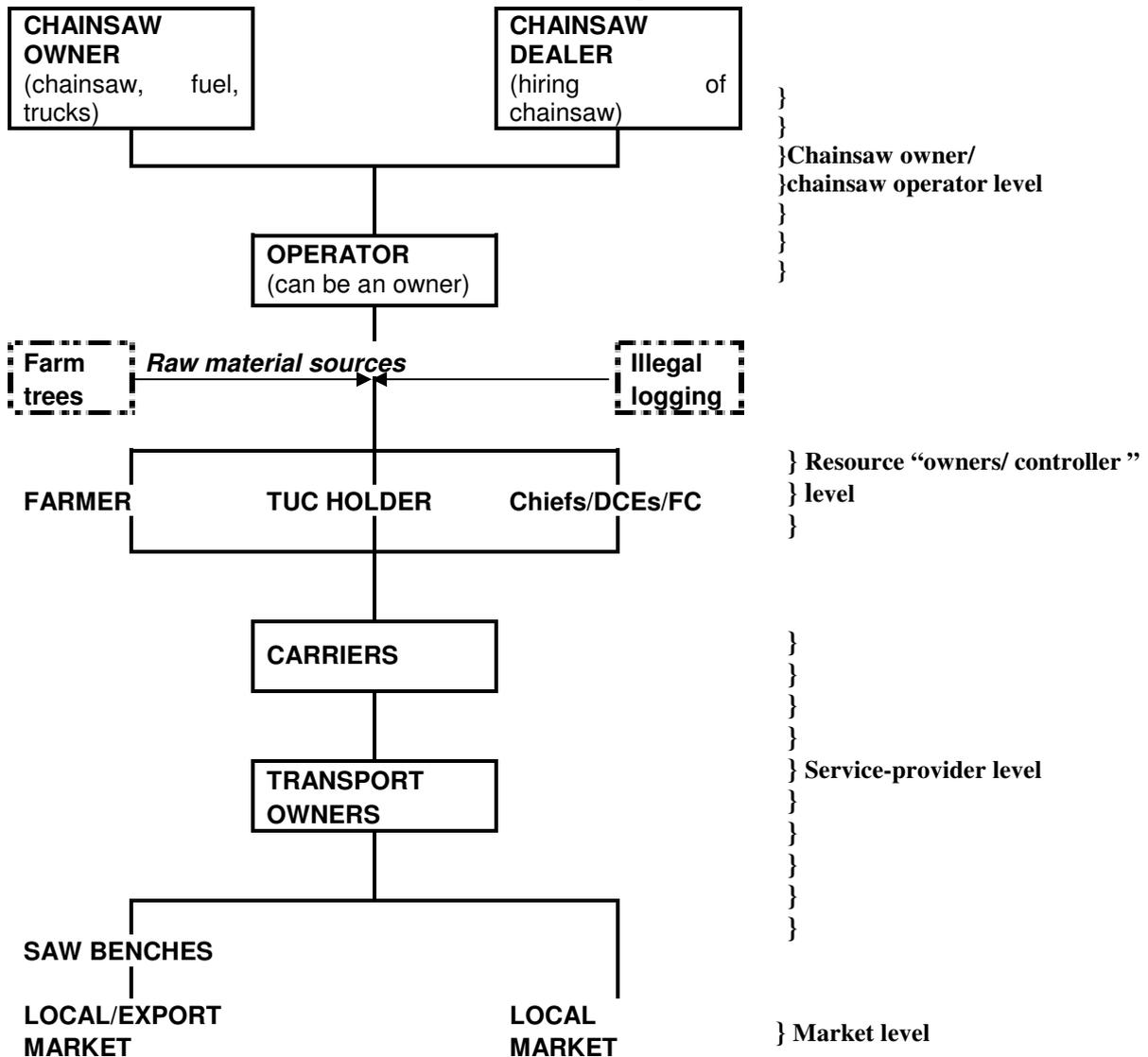
At Brofoyedur (a village in the study area), the carriers' charges range from  $\text{¢}1\,500$  to  $\text{¢}3\,500$  per sawn board irrespective of size. A carrier can headload more than 100 boards per day over a travel distance of more than 2 km one way. Thus, a carrier can earn about  $\text{¢}150\,000$ – $\text{¢}350\,000$  per day. On the other hand, the cost of weeding an area of  $12\text{ m} \times 12\text{ m}$  is about  $\text{¢}20\,000$ . Hence, it is a problem in that area to hire labour for farm preparation. The carriers are 18–25 years old and undertake the carrier job throughout the year.

### **FINANCIAL AND ECONOMIC IMPLICATIONS**

As a result of the scarcity of the preferred species – in addition to the inadequate monitoring methods of the FC coupled with rent-seeking behaviour by some forestry officials – there is a high possibility of evasion of the payment of forest fees by chainsawing operations. Such a situation makes it impossible to differentiate between legal and illegal timber. There needs to be an effective system in place to link the timber to its sources.

It has been estimated that the extent of raw-material requirement for chainsawing is currently close to the annual harvest by the formal logging industry ( $1.7$  million  $\text{m}^3$  in 1999, compared with  $2$  million  $\text{m}^3$  by the logging industry). In 1999, it was estimated that chainsaw lumbering distributed some  $\text{¢}11\,800$  million in the form of various informal private payments to individuals in the production, transport and marketing chain. This was more than 75 percent of actual stumpage collected by the FC (Gene, 2003).

FIGURE 5  
Stakeholders and resources involved in chainsawing



The non-payment of stumpage for the chainsawn lumber, the low investment involved, and the high demand for the produce as a result of its low price compared with sawmill lumber make chainsawing a profitable activity. The cost of chainsawn lumber is low. Its relatively low price makes it attractive to the poor sections of the society and the sectors of downstream wood processing that are unable to pay high prices for quality sawmill lumber, where available. The domestic sawmills are unwilling to sell into this low-price market.

**Effect on rural livelihoods**

The main effects of chainsaw lumbering on the livelihoods of the rural communities are in the form of:

- sale of trees on farms – even though illegal;
- provision of services as carriers of the equipment and the lumber produced;
- receipt of a share of the lumber produced. This makes lumber available that would otherwise have been difficult to obtain in the rural areas.

Some of the chainsaw operators live in the study area, but most of them are linked to the lumber dealers. Owing to the fact that chainsaw lumber production is carried out illegally, exploitative business relations are developed, eventually leading to low benefits for actors early

in the production chain. Examples are payment for farm trees and shares of lumber below the prevailing market prices by the chainsaw operators or lumber dealers. Sometimes, the latter evade payment for the trees and the farmers lose out altogether. In either case, the TAs and the FC do not receive any share of the sale of the trees on farms because of the illegality of such a sale and the lack of the necessary arrangement between the farmer and the TAs with regard to the sharing of the benefits from trees on farms. Their share of revenue is also lost in the case of illegal felling in TUCs. Generally, most of the benefits from chainsaw lumber production go to those financing the operations, who are generally located outside the rural areas.

On the other hand, people can earn more by working as carriers than as farm labourers. This has an adverse effect on the availability and the cost of farm-hands, as was observed at Brofoyedur (above). However, the creation of employment during the off-season is invaluable to the farming communities as there is spare labour and limited employment opportunities at that time.

However, the loss of revenue to the government and the landowners prevents the full realization of the necessary development projects for the improvement of rural livelihoods. Hence, although chainsawing contributes to poverty alleviation, there is still room for improvement with regard to effective capture of the requisite forest fees and taxes as well as the legalization of the commercial use of trees on farms and the payment of the appropriate prices for the trees and share of chainsawn lumber to the farmers or the rural people concerned. The laws that make commercial utilization of trees on farms illegal must be reviewed in order to facilitate the provision of the relevant market information to the farmers to guide their sale of timber trees, and also to provide an incentive for them to nurture trees on their farms.



## Chapter 9

### Identified driving forces for chainsawing

The results of the study indicate that there are substantial needs for lumber locally that have not been met as a result of inadequate supply to the local market. The demand is mainly in the urban centres and connected mostly to the furniture and construction industries. In addition, results of discussions at the offices of the FC point to a significant export of chainsawn lumber and related products to the neighbouring wood-poor countries. In comparison with the lumber demand in the urban areas, the lumber requirements in the rural areas are insignificant and yet unsatisfied in some cases as reported by the carpenters interviewed at Ateiku (see Chapter 8). Therefore, the markets that are far from the rural areas seem to be the main clients for chainsawn lumber.

FIGURE 6  
Driving forces – proliferation of chainsawn lumber

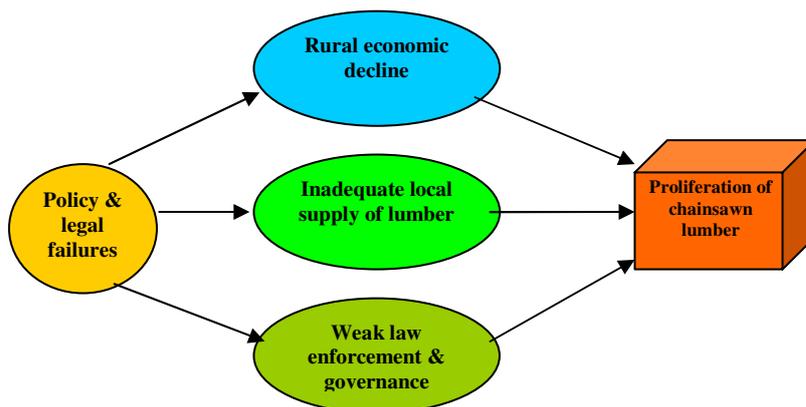


Figure 6 illustrates the relationship between the three main factors identified by the study as facilitating a lucrative trade in chainsawn lumber and having cumulatively contributed to the proliferation of chainsawn lumber production. They arise as a result of policy failures and are discussed in the following sections. The implication is that a holistic approach is required to tackle the chainsawing menace instead of targeting solely the operators or the chainsaw equipment.

#### RURAL ECONOMIC DECLINE

Although ownership of the forest resource by the TAs has been acknowledged since 1927, various issues have caused the rural population to work against their own forest-related long-term needs and interests. These are:

- actions or inaction of the FC that have led to a significant loss of potential revenue from the forest to the landowners and the forest-fringe communities;
- inequitable distribution of forest revenues and the lack of “trickle down” of the shared forest revenues to the forest-fringe communities;
- ignorance about:
  - forest-use rights (e.g. the TUPs),
  - the market values of commercial timber trees on farms,

- the expected share of proceeds from timber harvesting;
- inequitable tree-tenure relationships between farmer and landowners;
- the State's denial of the commercial utilization of trees on farms by farmers;
- restricted access to forest resources.

These aspects affect the livelihood of the rural communities that live close to the forest and farmers with trees on their farms. With the aforementioned policy failures, both the landowners and the migrant farmers find no incentive to cooperate with the protection and sustainable management of the forests. Such factors encourage the landowners, the forest-dwelling and forest-fringe communities to connive with and participate in unsustainable illegal forest activities including chainsawing.

### **INADEQUATE SUPPLY OF LEGAL LUMBER TO THE LOCAL MARKET**

There is an unsatisfied demand for lumber on the local market. The identified areas with regard to lumber marketing that require attention to encourage the supply of adequate lumber to the local market are described below. They deal with both the factors affecting the marketing of lumber and the potential availability of raw material for lumber production in the future.

#### **Timber rights and rights to forest management**

The consideration by the FC that timber is a national strategic resource and that its management would be compromised if it were to be decentralized tends to favour the TUC system. This system favours large-scale wood processors that concentrate mainly on the export markets or keep the LUSs in their holdings until markets (especially export markets) are found for them. The small-scale producers are denied access to the forest resources. Even the non-commercial TUPs that are meant for the use by the communities are given away to the large-scale wood processors.

As all timber resources and land have been vested in and are managed by the State, farmers have lost all rights to commercial exploitation on farms to concession holders. Timber concession areas (both within and outside the FRs) have also been excluded from the possibility of being managed on a decentralized basis through by-laws. Decentralization is considered by the FC mainly with regard to the protective FRs in the SZ in the north of the country where no commercial harvesting of timber takes place. However, it has been argued that the FC does not have exclusive rights to manage all FRs and protected areas. This has led to the conclusion that a clarification of FC forest management responsibilities is required from a legislative point of view.

#### **Community trade in lumber**

There is no possibility for trade in lumber at the community level. Harvest leftovers in the form of logs are vested in the FC. There is no awareness creation about the benefits of the non-commercial TUPs to the communities. The procedure for the utilization of the TUPs by the communities is also unrealistic. The use of chainsaws for the conversion of logs into lumber in addition to the trade in chainsawn lumber is prohibited by law.

Approvals for the felling and conversion of trees on farms into lumber by the FC are so cumbersome (especially for farmers in remote area) that they are virtually ignored by the farmers. Simplification of the procedures is required. In addition, consideration of the possibility of involving the CFCs in the recommendation to the FC for issuing permits and in the monitoring of their implementation is essential.

Community-related timber rights have yet to be created legally. They have the potential to contribute towards improving the regional supply of lumber in particular as well as the well-being of the forest-fringe communities in general. There should be the possibilities for community cooperatives formed from the land/forest-owning communities to be able to acquire timber rights and operate them under the supervision of the FC.

### **Performance of selected mills in supplying the local market**

The FC has not provided the selected mills with optimal support. The stocking of commercial timber species of most of the TUPs that were allocated to them was poor. The selection of such mills seems not to have taken into consideration their experience and/or equipment holdings. The staff of some of them lacked the requisite skills in forest harvesting and sawmilling. It is alleged that some of them did export the lumber of the traditional species that fetched premium prices on the export market.

Such mills should be given permits for areas that have good stocking of commercial trees. The staff should be made to undergo skills upgrading, for example, at the FC's Wood Industries Training Centre. For the effective monitoring of their production and marketing efforts, the possibility of the involvement of the CFCs in the areas of operation should be given consideration. It may be essential to link these selected mills to the furniture and construction industry through the provision of the necessary information to the general public. The estimated combined demand for lumber by these end users is more than 70 percent of the total lumber retailed locally.

### **Tree tenure on farms**

Trees on farms belong to the landowners. The consent of the landowner is required for their commercial utilization by the farmer. There is the need for some tree benefit-sharing arrangement between landowners and farmers. In conjunction with the legalization of commercial utilization of trees on farms, this will ensure equity in the sharing of benefits from tree on farms and encourage the nurturing of trees on farms. In the same vein, a follow-up of the lessons from the Care International project at Gwira Banso (Western Region) or similar projects as well as the removal of the "clear forest or forfeit farmland" directive given by the chiefs to migrant farmers would be necessary.

The landowners' main interest is usually to improve their revenue share while the migrant farmers' interest may be in safeguarding their landholding rights. Therefore, it is important that any policy meant to grant the landowners full rights over timber trees must also ensure that sitting tenant farmers are not evicted solely to enable the owners to liquidate the assets on their land.

### **The local wood market**

A cursory observation of the local lumber market gives the impression that there is no shortage of lumber on the local market. The stocks are mainly chainsawn lumber, which is mostly sourced illegally and unsustainably. Although sales figures are unknown, the demand for lumber is high and the stocks do move while its replenishment is usually undertaken secretly.

What is known with some certainty is that timber harvesting for chainsawing is more than the AAC and about twice the volume of illegal logging (FC, 2001). About 84 percent of the FRs have been assessed as being in a very bad or degraded state. In comparison with timber harvests, there is currently inadequate regeneration (both artificial and natural) of the forests. Hence, the feasibility of the sustainability of the current levels of lumber supplies on the local market is very limited. The directive by the FC for the supply of 20 percent of the sawmill production to the local market is not adequate to meet the local lumber demand. Therefore, innovative measures are required to complement this directive including the consideration of the possibility for chainsawn lumber to augment the lumber supply from the sawmills. In addition, it may be necessary to import lumber in the short term while the current plantations mature.

About 50 percent of the AAC is of LUS types that could potentially be used. Therefore, the promotion of the LUSs is required in order to expand the raw-material base for lumber production.

The local wood market is imperfect. For example, there are distortions of the local timber market by cheap chainsawn lumber and depressed local log prices. Chainsaw operators normally evade the payment of forest fees and taxes that contribute to the relatively lower prices of the chainsawn lumber. This is considered as a disincentive for the sawmillers to sell on the local market.

Since the suspension of log exports, the sawmillers have not paid the appropriate prices for logs. The domestic price of logs in the period 1990–95 was 27 percent of the international free-on-board price for tropical softwoods and 37 percent in 1999 (FC, 2001). Therefore, it appears that the tree/landowners are subsidizing the wood industry heavily. The prices of trees sold on farms are also adversely affected indirectly. The implementation of the appropriate pricing of timber is necessary in order to remove these distortions.

There is no grading and pricing of the respective grades of lumber on the local market. Mean prices are used and no “creaming” of quality lumber in a pack is allowed. Therefore, there is no possibility for the poor to choose a lower quality and so pay a lower price than the mean. The use of mean prices encourages neither the adoption of the relevant appropriate technologies by chainsawyers to improve the quality of chainsawn lumber nor the sale of quality lumber on the local market.

Lumber dimensions are not standardized locally. This is a disincentive for the adoption of mass-production techniques and the utilization of the economies of scale by the sawmills to process for the local market. The executive secretary of the Ghana Timber Millers Organization has indicated that the “public requests dimensions and specifications for lumber which are so divergent that it disturbs the production lines of sawmills” (Tropenbos International Ghana, 2003).

There is a high purchasing power and demand for lumber in the neighbouring wood-poor countries. Coupled with inadequate coordination between the TIDD and the CEPS, this is causing a suspected significant portion of the local lumber production to be either smuggled or exported overland to some of the neighbouring countries in various forms. Apart from the loss of revenues to the State and the landowner, the supply of lumber to the local market is also affected adversely. Efforts by the TIDD to regularize this need to be intensified.

#### **Organization of carpenters for lumber procurement**

The small-scale furniture producers lack the capacity to form cooperatives to buy the mill fall-downs in bulk and to negotiate for competitive prices at the sawmills. Assistance would be required in this instance with regard to the strengthening of the capacity of the secretariats of the small-scale carpenters to form cooperatives for such a purpose. This should be combined with skills upgrading in furniture production in order to improve the quality and price of furniture produced as well as their lumber purchasing power. There should also be a change in attitude with regard to the utilization of short pieces of lumber that may be available at the sawmills.

#### **Status of the raw-material base**

There is lack of motivation among farmers to nurture trees on farms. The introduction of the light-demanding variety of cocoa has resulted in some clear felling of forests in certain areas. This will have a negative impact on the environment in the future and adversely affect the future supplies of raw material to the wood industries in general and the supply of lumber to the local market in particular. Demonstration of the possibility of developing the new cocoa crop in open areas without forests by the Ministry of Agriculture is necessary.

The 1979 Economic Plants Protection Decree, which prohibits the granting of felling rights for standing trees on farms where specified plants are cultivated, has become redundant with introduction of the light-demanding cocoa variety. The replacement of the old shade-tolerant

cocoa trees would require either a reduction in the density of the tree cover crop or their total removal. Therefore, the law should be reviewed to legalize the commercial utilization of such trees.

There is a perception of abundance of forest resources by the wood industry (including the chainsawyers) as a result of the undervaluation of timber. This has led to the dissipation of the stumpage through inefficient logging and wood processing. This needs to be addressed by the proper valuation and pricing of the timber resource. It also requires the provision of regular information on the status of the forest resources to the general public.

### **WEAK LAW ENFORCEMENT AND GOVERNANCE STRUCTURES**

Weak governance structures and inimical laws alienate farmers and forest-fringe communities while encouraging the illegalities to flourish. The results of the measures that have been instituted to combat chainsawing (see Chapter 6) confirm that they have not been effective in combating the proliferation of chainsawing. For law enforcement and governance to be more effective, efficiency and equity issues must be addressed properly.

#### **Efficiency**

Efficiency includes decentralization, law enforcement, the control of corruption and the proper tracking of forest produce from the source to the market.

#### ***Decentralization of implementation***

The leading roles that the DAs and the local communities could play in reducing the negative impact of chainsaw lumbering have been suggested. There are examples of how CFCs are providing positive assistance in controlling chainsawing in the study area. An appropriate improvement in the capacities of the DAs and the local communities in forest management and control would be required to make them more effective. The involvement of CFCs, DAs and NGOs requires further study for the effective monitoring of chainsawing at the local level.

#### ***Law enforcement and control of corruption***

There appears to be ignorance among the law-enforcement agencies and the general public about forestry laws. Therefore, there needs to be improved information sharing among the cooperating law-enforcement agencies on forest laws related to chainsawing and the timber trade. The intersector coordination between the FC, DAs and CEPS in the field as well as cooperation among the law enforcement agencies is weak. For example, the CEPS allows the export of lumber without full compliance with the required TIDD export documentation. There was also confusion over the responsibility for issuing permits for chainsawing during the period of its legalization between the FC and the DAs. The pre- and post-felling checks by the FSD and DAs with regard to chainsawing were prescribed without consideration for the necessary resources required to undertake such intensive inspections in the rural areas. Hence, such inspections were not done. In some cases, there have been problems as to which courts should try forestry cases, who should investigate cases and who should be prosecuted. The possibility should be explored of setting up special courts equipped to deal with corruption in forestry.

Although there is a law that specifically makes it an offence for a public officer to be involved in illegal forest activities, the connivance of some officials is allegedly continuing. There are alleged abuses of the law by some DCEs, TAs and FC district managers. This is a typical case for the involvement of an independent monitoring team (e.g. an NGO such as Forest Watch) that has no vested interest in timber.

#### ***Tracking wood products***

The implementation of effective wood-product tracking is essential to ensuring that chainsawing is undertaken in strict compliance with the tenets of sustainable forest management as prescribed by the FC. The tracking system currently being implemented by the FC does not accord the local market the same attention as the export market. Moreover, the time lags between the reports by the FC divisions involved makes them redundant. It is dangerous to track

chainsawing in the bush as a result of its illegality and some casualties among FC staff, members of the security forces and some CFC members have been reported. The task forces (including the FC officials) spend a lot of time monitoring the transportation of the chainsawn lumber. However, the urban lumber markets are virtually untouched. This could be explained by the alleged connivance of some of the FC staff and members of the security forces. The weak monitoring capacity of the FC has been aggravated by a recent reduction in staff of more than 40 percent under the ongoing restructuring of the FC.

### **Equity**

This aspect includes participatory forest management and control (the sharing of the responsibilities, rights and obligations of the forest-resource stakeholders), equitable distribution of benefits, and improvements in the relationship between the State and people.

### ***Broad-based decision-making***

This includes the empowerment of civil society, and the participation of stakeholders in forest management and control that is backed by an enabling legal framework. The current legal framework is inadequate for the practical implementation of the collaborative spirit implied in the FWP. Collaboration with the relevant stakeholders (e.g. local communities and NGOs) will minimize the discretionary powers and corruption that have encouraged the connivance of the public officials with chainsawing. The FC is currently the sole manager and regulator of the forest resources. These roles are conflicting and prone to the promotion of corruption within the commission. The forest stakeholders – including the TAs that control the land and forests – have been alienated from forest-policy formulation and forest management. This has created apathy on the part of such stakeholders and has led to their connivance with illegal forest activities including chainsawing.

### ***Benefit sharing***

The right to allocate concessions, acquire unoccupied land, set royalty rates and collect stool-land revenue was assumed by the State without the participation of the landowners or the TAs in 1962. The revenue is poorly collected and distributed. In the recent past, there has been no inflation-indexation of stumpage fees. The landowners are dissatisfied with the sharing of forest revenue as prescribed by the constitution. It does not indicate explicitly how the TAs and the DAs should disburse the portions of the revenue paid to them. Coupled with the lack of internal transparency in the rural communities with regard to the distribution of revenue that accrues from the land, this leads to no trickling down of the TAs share of forest revenues to the forest-fringe communities. There is a similar effect with regard to the DAs' share of forest revenues. The assessment of compensation payments to farmers as a result of destruction of crops through timber harvesting is not fully transparent. Moreover, the right of appeal is unclear.

### ***State–people relationships***

The issues here are transparency and accountability, improving trust as well as education and awareness creation about forest management. The 1960 Forest Improvement Fund severed all links between the management of a particular reserve by the FC and accountability to the landowners of the use of the revenue generated by that reserve. The lack of trust in the system has perpetuated a cumbersome system of approving the use of trees on farms by the farmers. Similarly, the forest-fringe communities are denied the use of logs left over after harvesting. The role of the stakeholders – especially the landowners and forest-fringe communities – needs to be clearly established and recognized.

Leadership and commitment to providing information, consulting and actively engaging forest-fringe communities is generally weak across the levels of actors (politicians, senior public-sector executives, senior and junior managers, and other officials). Therefore, there is widespread ignorance among the forest-fringe communities about the potential benefit of the forests to their livelihoods. For example, as was learned at the CFC workshop organized by the Tarkwa Forest District, the use of the TUP by the communities was unknown to most of them.

However, the FC has commenced the publication of the allocations of timber revenues on its Web site.



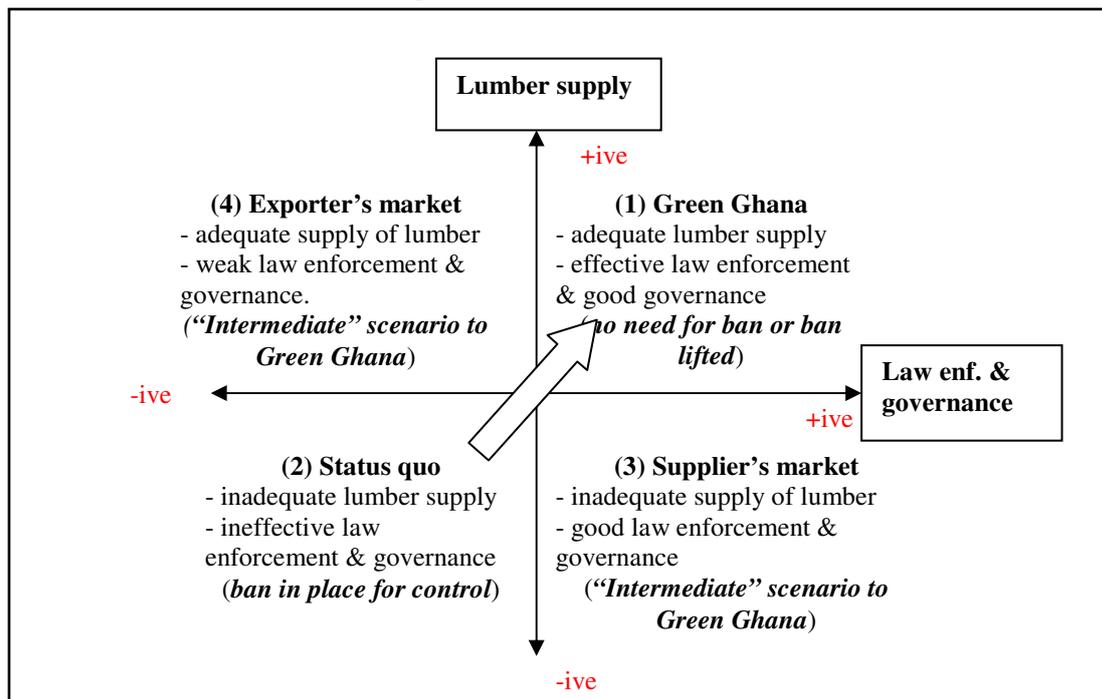
# Chapter 10

## Options for tackling chainsawing

The analysis of the three driving forces in Chapter 9 indicates that the two most important shapers of the different futures for chainsaw lumbering are: law enforcement and governance structures; and the supply of lumber to the local market.

FIGURE 7

### Possible futures for chainsawing



Based on the above two dimensions, there are four possible future scenarios for chainsawing as illustrated in Figure 7. The expected conditions under the four scenarios are described below.

#### SCENARIO 1

This scenario may be termed Green Ghana. This is a condition where there would be effective checks and balances in place to ensure sustainable utilization of the timber resources coupled with adequate regeneration of the forests. Hence, there would be no need for the imposition or continuation of the ban on chainsawing. The situation that is expected to prevail under this scenario is described below.

#### Lumber supply

There would be:

- legalization of chainsawn lumber production in order to augment supplies from the sawmills; incentives for sawmillers to sell on the local market;
- grading and fair pricing of lumber and other wood products;
- incentives for the utilization of LUSs;
- commercialization of TUPs for the local communities and the prohibition of the issue of TUPs to large-scale wood processors;

- increased timber plantation formation and the management of natural regeneration both within and outside the FRs – including incentives for nurturing trees on farms;
- exploitation of the timber resources within the limits set by the FC;
- an AAC for lumber production in balance with the combined raw-material requirement of the chainsawyers and the sawmills;
- effective monitoring of the extent and condition of the forest resources in place;
- effective control of the export of lumber to neighbouring countries;
- temporary importation of lumber until there is adequate regeneration and growth of the forests.

#### **Law enforcement/governance**

There would be:

- an improved wood-products tracking system in place;
- good cooperation between the relevant public agencies and the civil society for effective law enforcement and good governance;
- strong incentives (e.g. transparency, accountability and equity in benefit sharing with regard to revenue from forests and trees) for the effective participatory management of the forest resources, including the nurturing and maintenance of trees on farms;
- improved collaboration between the FC, the cooperating law-enforcement agencies, CFCs, NGOs and other empowered civil-society groups to monitor chainsawing.

#### **SCENARIO 2**

This situation is similar to the status quo or the existing situation where a ban is in place as a measure to rectify failures in forest management and control, forest policies and governance. Some of the conditions that are expected to continue under this scenario if the ban should persist in the current form are outlined below.

#### **Law enforcement/governance**

There would be:

- increased entrenchment of the relationships between the timber merchants and the public officials to obstruct forest law enforcement;
- increased use of the wealth accumulated to wield political power to support illicit chainsawing;
- increased recalcitrance of those involved with the chainsawn lumber production chain resulting in increased threats to the lives and jobs of those that pursue compliance with the law;
- a progressive increase in the dissipation of most of the energies and resources of the staff of the FC and the law-enforcement agencies in combating proliferation of chainsawing;
- more public officers would collaborate or become involved with chainsawing to cause a breakdown in the observance of the chain of command within the FC and the law-enforcement agencies;
- increased alienation of the owners of the land and trees by the state forestry officials, resulting in their increased connivance with the proliferation of chainsawing.

#### **Lumber supply**

There would be:

- a progressive shortage of lumber on the local market leading to increased prices, the eventual utilization of substitute materials and possible importation of lumber;
- a rapid decimation of the raw-material base resulting in job losses among the forest industry workers including the stakeholders in the chainsaw lumber business;
- further environmental degradation as a result of overexploitation of the timber resources leading to losses in biodiversity and the environmental services that the forests provide;

- a progressive reduction in the effect of the forests resources (especially the minor forest products and NTFPs) as safety nets for the forest-dwelling and forest-fringe communities in times of economic stress, leading to increase in urban-rural migration;
- a progressive reduction in the contribution of the forest industry to the national budget and national development efforts.

Such long-term effects would be inimical to the environment and the livelihood of the stakeholders. Therefore, it would be more prudent to “move” from this scenario to Green Ghana (see Figure 7) by following the recommendations in Chapter 11.

### **SCENARIO 3**

This situation is similar to that where controls and governance are improved in isolation. This scenario has been termed the Supplier’s Market. Together with Scenario 4, it is considered as intermediate on the path to the desirable Green Ghana.

The current local lumber supply has been assessed as not commensurate with demand. At the same time, chainsawn lumber forms the majority of the stocks on the market while most of the raw material for their production is sourced illegally. Hence, any effective clampdown on illegal forest activities without improvements in the supply situation would result in further reduction in the lumber stocks on the local market, with the following expected environment.

#### **Lumber supply**

There would be:

- an acute shortage of lumber, and the end users (especially small-scale furniture producers) would be hit, so causing unemployment (see Figure 3);
- cartels formed by chainsawn-lumber traders to determine lumber prices;
- dramatic rises in the lumber prices of would rise dramatically;
- a minimizing of illegal forest activities and improvements in the environment through the ensuring of sustainable timber harvests;
- limited smuggling of chainsawn lumber and related products as a result of the effective controls in place.

#### **Law enforcement/governance**

There would be:

- the law enforcement and governance systems in place as under the Green Ghana scenario;
- a driving underground of chainsawing and the related products trade with an increased hardening of the stance of the perpetrators;
- possible collaboration between the furniture/construction industry and other end users with dealers to confront the FC and other law-enforcement agencies in an attempt to protect their jobs;
- the need for more resources in order for the law-enforcement agencies to control the activity.

### **SCENARIO 4**

This is a condition where attempts would be made to improve the local lumber supply in isolation. The scenario is termed the Exporter’s Market. The following conditions are expected to be in play under it.

#### **Lumber supply**

There would be similar measures to improve the supply to those proposed under the Green Ghana scenario. The other conditions that would come into play include eventual excess supply of lumber and the falling of prices. It would be more lucrative to export chainsawn lumber and its various processed forms both overseas and overland. The weak control measures would encourage increased lumber exports or smuggling to the wood-poor neighbouring countries or overseas to create intermittent artificial shortages of lumber.

**Law enforcement/governance**

The law enforcement and governance situation as under Scenario 2 would prevail.

**THE WAY FORWARD**

This Green Ghana scenario (Scenario 1) would be the most desirable as it would be necessary to improve law enforcement/governance efforts in tandem with ensuring adequate supply of lumber in order to address the proliferation of chainsawing in a comprehensive way.

If either of the forces is treated in the absence of the other, either Scenarios 3 or Scenario 4 would be in play. These scenarios do not address the chainsawing problem fully. Of the two, Scenario 4 appears to be the more preferable route to follow. However, the treatment of the two forces concurrently appears superior. Scenario 3 would create more conflicts and distortions in the local lumber trade.

The most effective measure to address the lumber supply situation would be to make it easy for the end users to access enough lumber for their needs. In the case of law enforcement and governance, it would be essential to introduce measures to deter those who indulge in illegal production of chainsawn lumber coupled with reduction in the rewards from producing chainsawn lumber illegally. Recommendations for the implementation of such measures are given in Chapter 11.

# Chapter 11

## Recommendations

As discussed in Chapter 10, this study proposes Scenario 1 (Green Ghana) as the preferred option to pursue in order to control the proliferation of the chainsawn lumber trade and minimize its effect on the environment. The following recommendations are made based on the approach suggested in Chapter 10.

### **MEASURES TO ENSURE THE AVAILABILITY OF ADEQUATE LUMBER ON THE LOCAL MARKET**

The necessary incentives to allow the private sector to import lumber to augment the local supplies until adequate regeneration of the forests should be explored by the MLF and the FC.

The modalities for the issue of TUPs and other permits for the landowners and forest-fringe communities/farmers must be simplified by the FC.

Section 32 of Legal Instrument 1649 should be repealed to allow the use of chainsaw for production of lumber in the rural areas and on farms by the forest/tree-owners for own use as well as trade in chainsawn lumber by community cooperatives. The sale of any extra lumber above the local requirements should attract the payment of the necessary fees/taxes. The CFCs should be made to assist in monitoring this.

In all cases of applications for trees for community use, not more than say five trees may be issued on a particular permit. Where the calculated requirements (in roundwood equivalent) exceed five trees, permits for the remainder should be given in instalments of no more than five trees at a time. This should be done to assess the effectiveness of the CFCs in monitoring the scheme on a trial basis. The lessons learned should be used in order to expand the scheme to other areas.

There are currently no mechanical improvements in the quality of chainsawn lumber produced in the country. In cooperation with the TIDD, the Forestry Research Institute of Ghana (FORIG) or the Institute of Renewable Natural Resources should undertake comparative studies of the appropriate technologies. This should be followed by recommendations for the adoption of those that suit the socio-economic settings in Ghana. The FC should facilitate the acquisition of the recommended technologies by chainsaw operators. This aims to improve the yield of chainsawing as a measure for promoting efficient utilization of a scarce raw material.

The TIDD should facilitate the compilation of local grading rules for lumber in order to facilitate the standardization of lumber dimensions and the pricing of lumber according to quality. This should be followed up with the training for lumber dealers, chainsaw operators and end users in their practical application.

The lumber requirements in the rural areas are not as high as in the urban areas. Hence, there would invariably be more timber than meets their requirements and there would be the necessity to sell the extras. As an alternative to the suggestion above, consideration should be given to converting the TUPs into community-type timber rights to be issued to and operated solely by community cooperatives with technical assistance from the FC. Additional responsibilities for the cooperatives would be plantation formation and the management of natural regeneration of the TUP that incorporates local experience and knowledge.

The FC should facilitate support to the mills that have been selected to produce for the local market with regard to: the allocation of areas with a good stock of timber trees; and access to

credit for the acquisition and upgrading of harvesting and sawmilling equipment. Skills upgrading in the latter aspects and business management would also be necessary. The selected mills should be encouraged to establish tree plantations for their future raw-material supplies.

Cooperation between the CEPS and TIDD must be improved in order to monitor overland export of lumber and other timber products effectively and so minimize smuggling. The TIDD should improve the follow-up of what it has already initiated.

There should be active development of markets for the LUSs in order to facilitate the utilization of the about 50 percent of the AAC that is currently not harvested adequately.

Existing research results on LUSs as substitutes for the traditional species should be published by the FORIG together with their extent of availability in the forest by the FSD. Information on the TUC holders or sawmills that have these species in abundant supply should be made known to the market by the TIDD, especially to the furniture manufacturers and the estate developers. Government agencies/projects must be encouraged to patronize these species.

As most of the LUSs are perishable, the FORIG should be sponsored to introduce simple and appropriate preservative techniques for the various end users. The institute should also be motivated to improve the LUS staining skills of the local carpenters and furniture producers in order to enable them effectively mimic the colours of the favourite traditional species that are in short supply.

The FC should organize a workshop for the sawmillers, the end users of lumber and other relevant stakeholders in order to determine the necessary modalities to enable the sawmills to supply adequate volumes of lumber to the local market.

The appropriate incentives should be formulated and promoted by the MLF/FC to facilitate private participation in large-scale commercial timber-plantation formation.

The FC/TUC holders should undertake the necessary post-harvest cultural operations to promote the regeneration of the TUCs.

#### **REDUCTION IN POTENTIAL REWARDS FROM CHAINSAWING**

The market distortions caused by chainsawn lumber should be minimized by the TIDD/FSD ensuring the payment of the necessary forest fees and taxes to the forest authorities and the appropriate prices for trees to farmers.

In this respect, the farmers/forest owners would have to be provided with regular market information about log prices on the local market by the TIDD, the FC service centres at the forest district offices, or through the CFCs. The legal provision that prohibits the harvest of timber without a TUC should be repealed in order to accommodate the sale of timber on farms.

#### **IMPROVEMENT IN THE DETECTION AND PROSECUTION OF CULPRITS**

There should be political will at the MLF and the FC to have the necessary sanctions against culprits and offending public officials applied rigorously. No control measure can be effective without this.

The MLF/FC should initiate the formation of special courts equipped to deal with corrupt activities in forestry.

The formation of CFCs in the HFZ should be expedited by the FSD as they have generally proved useful in monitoring timber harvesting in the rural areas. The CFCs should be motivated in order to involve them effectively in the monitoring of permits that may be issued for chainsaw lumbering. Their basic education with regard to forest law enforcement and forest-

harvesting prescriptions and control should be improved before their involvement in such activities.

The CFCs have been instrumental in minimizing chainsaw operations. Their main priority is the protection of the forests in order as to receive a share of the royalties. The control of the chainsaw operations is just part of this overall goal.

There should be involvement of NGOs without vested interest in the timber trade (e.g. Forest Watch) in order to complement efforts in monitoring the trade in chainsawn lumber and in the application of sanctions against offenders.

Assistance should be given by the FC to improve the capacity of the secretariat of the Ghana Institute of Professional Foresters. This would enable the institute to ensure that its members in the FC perform their work up to the highest professional standards by the application of its code of ethics.

There should be rigorous reconciliation of logs issued on FSD permits for chainsawing with the related chainsawn lumber in transit and at the markets. These should be taken into consideration in the development of the timber-flow audit being developed by the FC. Issues include the preparation of ready-reckoners that link the number of pieces of lumber (without any measurements) with the expected size or volume of logs (within acceptable tolerances) by the TIDD. This is essential with regard to confirmation of the lumber having been produced from the number of logs on the FSD permit.

All chainsawn lumber in transit and on the market must be covered by the producer's logging permit and the accompanying certificate issued by the FSD. These documents must be made available to both TIDD and FSD staff as well as the CFCs and other authorized NGOs for inspection on request.

The registration of the chainsaw operators and their formation into associations should be promoted. These groups should be educated to ensure the compliance of their members with the conditions set by the FSD permits as well as any other regulations on forest harvesting.

The modalities for effective cooperation between the FC and the DAs must be developed for the effective management of forest resources at the district level.

Appropriate legal backing must be provided by the MLF/FC for the implementation of the participatory aspects implied in the FWP.

There should be a flow of regular information in map form and at district level in the HFZ on the effects of illegal forest activities and other land uses on the environment.

The chainsaw operators in particular and the public in general should also be informed as to the availability of timber in the country. This will confirm or dispel the strong perception held by the wood industry (including the dealers in chainsaw lumber) that the raw material is plentiful. This will also enable the general public to have an informed opinion with regard to their possible collaboration in the fight against such illegal forest activities.

The use of satellite imagery and related remote sensing techniques is necessary. The services of the Remote Sensing Unit at the FC and the Centre for Remote Sensing and Geographic Information Services of the Geography Department of the University of Ghana would be invaluable here. Funding could be sought from recent international endeavours to discourage the illegal trade in timber.

The FC should assist landowners and migrant farmers in formulating appropriate agreements whereby the benefits from the trees sold on farms are shared equitably between the chief and the farmer.

With the introduction of the light-demanding cocoa, the law that prevents the felling of trees on cocoa farms becomes redundant and should be repealed.

In conjunction with making the farmers appreciate the direct benefits from trees on farms, attempts must be made to forestall clear felling or rapid removal of trees in favour of the new variety of cocoa. This is necessary in order to ensure the future sustainability of the raw material in the unreserved areas for chainsaw lumber production in particular and the wood industry in general, as well as the provision of environmental services by forests in such areas.

Therefore, the FC should cooperate with the Ministry of Agriculture in the practical demonstration of the feasibility of the establishment of a viable crop of new light-demanding cocoa without fresh forest clearing outside the closed forest areas. This will help reduce the clear felling of fresh closed forest areas for the establishment of the crop. This is particularly important as most of the soils of the “last frontiers forest” in Western Region (especially in the wet evergreen forests to the west of the study area) are acidic and not suitable for cocoa cultivation (Prah, 2003).

#### **ALTERNATIVE LIVELIHOOD SCHEMES**

The dealers in chainsawn lumber dominate the business. Hence, concentrating on alternative livelihoods for the chainsaw operators alone would only partially solve the problem. Therefore, the alternative livelihood schemes should also focus on the forest-fringe and forest-dwelling communities. In conjunction with the provision of direct benefit from trees on farms to farmers, this is likely to have more impact in minimizing chainsawing. As the forest-fringe communities/farmers come to appreciate the value of the forest/tree, or as the benefits from forest/tree increase, these communities would be much more willing to participate in forest and tree conservation.

Therefore, it is recommended that such informal forest-based activities as processing and trade in medicinal plants, wood carving as well as lumber obtained from the forest or trees on farms should be promoted to become sustainable and remunerative. In addition, possibilities for rural ecotourism could also be explored.

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