

**A MODEL FOR FOREST AND PRODUCT
CERTIFICATION IN GHANA: THE PERCEPTION AND
ATTITUDES OF FOREST ENTERPRISES IN GHANA**

A Thesis submitted for the degree of Doctor of Philosophy
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Abstract

Forest and product certification was initially promoted as a means of enhancing sustainable management of forests in the tropics. However after almost two decades, there is still very little evidence of certified timber products originating from tropical countries. A number of approaches have been suggested to enhance the growth of forest certification in the tropics. These approaches such as that of the Forest Stewardship Council, Global Forest Trade Network of the World Wide Fund for Nature (WWF), Sustainable Forest Initiative and various private sector initiatives have all failed to facilitate forest certification. Therefore to enhance the development of forest certification in Ghana, the research work amongst others, draws on experiences in certification from other sectors such as cocoa, fisheries, tourism and oil palm to develop a model for promoting forest certification in Ghana. The research work uses elements identified in the literature review in developing a questionnaire for the survey of timber firms in Ghana. The research work identified stakeholder consultations, legal framework, resource rights, and the regulation of the domestic market as key elements for promoting forest certification in Ghana. The research recommends a phased approach to promoting forest certification with the first phase being verification of legality that adopts the European Union Forest Law Enforcement, Governance and Trade (FLEGT) and the Voluntary Partnership Agreement (VPA) initiative. The study identifies this approach not only as a means of reducing cost to the private sector in pursuing forest certification but a means of drawing on support measures to enhance the regulation of the domestic market; a key component for promoting forest certification. The report argues that it is only through a well regulated domestic market can tropical timber producing countries achieve sustainable forest management and hence forest certification. The domestic market is therefore seen as a strong means of promoting certification since it will be internalised in the producing countries. None of the research on certification has so far identified the domestic market as a key factor to promoting forest certification and the research work argues that the slow pace of certification has been the lack of demand for certified products on the domestic market. Developing the domestic

market is therefore seen as a key policy instrument for promoting the uptake of forest certification in Ghana and the tropics in general.

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Declaration

This thesis has been composed by the undersigned and is a record of work undertaken at the Buckinghamshire New University. It has not been accepted in any previous application for a degree. All verbatim extracts have been distinguished by quotation marks, and all other sources of information have been acknowledged.

Alhassan N Attah

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Abbreviations

AAC	Annual Allowable Cut
AfDB	African Development Bank
ATFS	American Tree Farm System
ATO	African Timber Organisation
BVC	Bureau Veritas Certification
CBD	Convention on Biological Diversity
CBI	Centre for the Promotion of Imports from Developing Countries
CIF	Cost Insurance and Freight
CITES	Convention on Trade in Endangered Species
COP	Conference of Parties
EC	European Commission
ENGOS	Environmental Non Governmental Organizations
EU	European Union
FA	Finance and Administration
FAWAG	Furniture and Woodworkers Association of Ghana
FMU	Forest Management Unit
FOB	Free on board
FORIG	Forest Research Institute of Ghana
FSC	Forest Stewardship Council
FSD	Forest Service Division
GFC	Ghana Forestry Commission
GFTN	Global Forest Trade Network
GM	genetically modified
GTA	Ghana Timber Association
GTMO	Ghana Timber Millers Organisation
HR	Human Resource
IA	Internal Audit
ICCO	Inter-Church Organisation for Development
IFIA	Inter African Association of Forest Industries
ILO	International Labour Organisation

ITTO	International Tropical Timber Organisation
KPCS	Kimberley Process Certification System
KWC	Kumasi Wood Cluster
LSEs	Large Scale Enterprises
MAC	Marine Aquarium Council
M&E	Monitoring and Evaluation
MLNR	Ministry of Lands and Natural Resources
MSC	Marine Stewardship Council
MTS	Modified Tungya System
NGO	Non Governmental Organisation
NWG	National Working Group for Forest Certification
PAFC	Pan African Forest Certification Scheme
PEFC	Programme for Endorsement of Forest Certification
PPP	Public Procurement Policies
RMSC	Resource Management Support Centre
RSPO	Round Table on Sustainable Palm Oil
RWE	Round Wood Equivalent
SFM	Sustainable Forest Management
SGS	Société Générale de Surveillance
SMFEs	Small and Medium Sized Forest Enterprises
SOE	State-owned enterprise
SPSS	Statistical Package for the Social Sciences
SPWP	Secondary Processed Wood Products
SSA	Sub Saharan Africa
TIDD	Timber Industry Development Division
TRF	Timber Rights Fee
TRMA	Timber Resources Management Act
TUC	Timber Utilisation Contract
TUP	Timber Utilisation Permit
UNCED	United Nations Conference on Environment and Development
VLTP	Validation of Legal Timber Programme
WITC	Wood Industries Training Centre

WWF World Wide Fund for Nature

CHAPTER ONE

1 Problem Statement and Justification

1.1 Background

Unsustainable management of forest globally has resulted in the deforestation and degradation of the world's forest resources. Current levels of forest loss contribute almost 20% of total emission of carbon dioxide which impacts on climate change (Van Bodegom *et al.*, 2009). There is a strong link between climate change and forests. Protecting forests from conversion, deforestation and degradation can reduce the impacts of climate change. Since the Conference of Parties (COP) 13 in Bali in December, 2007, forests have become central to the discussions on climate change in particular their ability to reduce emissions from deforestation and forest degradation (REDD). There is increasing recognition on the need for a localised approach to addressing the issues of deforestation.

The Food and Agriculture Organisation in its Forest Resource Assessment in 2010 (FRA, 2010), estimated that land area under forest cover globally continued to decrease at a rate of 13 million hectares per year (FAO, 2010). This is mainly due to conversions of tropical forests to agricultural land (FAO, 2010). Ghana's total forest cover has fallen by 34% from 7.44 million hectares in 1990 to 4.94 million hectares in 2010 (FAO, 2010) mainly due to unsustainable forest use fuelled in part by the domestic demand for timber and intensive agricultural practices. The annual deforestation rate in Ghana for the period 1990-2000 is estimated at 135,394 hectares (ha) per year while that for the period 2000-2010 is estimated at 115,394 ha per year (FAO, 2010). This shows a slowing down of the rate of deforestation in Ghana but this is mainly due to additions through plantation development rather than better management of the natural forests. Conversions to agriculture and chainsaw timber production to meet domestic demand have accounted for the high pace of deforestation. Agricultural activities and the growing domestic demand are therefore perceived as key drivers for deforestation and forest degradation in Ghana. Energy requirements, in particular fuel wood, have also accounted highly for wood removals from the forest. Total removals of wood products from the forest of Ghana are as shown in Table 1.1 below:

	Million M ³	
Product	1990	2007
Industrial roundwood	1.2	1.4
Fuelwood	14.8	23.8
Total	16.0	25.2

Table 1.1 Wood Product removals from Ghana's Forests:1990-2007 (FAO,2010)

The causes of deforestation vary regionally and by country, however unsustainable forest practices, in particular, industrial logging and trade in tropical timber has attracted the attention of the international environmental community (Gullison, 2003). This concern over unsustainable forest practices especially in the tropics has resulted in a widespread call for boycotts of tropical timber and the introduction of international standards to implement sustainable forest management. There have also been initiatives such as the EU chainsaw project that target bringing the informal chainsaw timber production into the formal sector.

With the concerns for the environment and the upcoming international negotiations on a successor agreement to the Kyoto Protocol under the United Nations Framework Convention on Climate Change (UNFCCC), there is increased debate on how the objectives of climate change mitigation and adaptation could be integrated with sustainable forest management and biodiversity conservation, particularly in respect of avoided deforestation and forest degradation. Deforestation and forest degradation resulting from unsustainable forest practices is considered to have adverse impacts on climate and the lives of rural as well as forest communities and therefore linked to the state of poverty in these areas.

The call for trade in certified forest products is therefore perceived as one way to achieve Sustainable Forest Management (SFM) and contribute to addressing the impacts of climate change, poverty eradication and improve governance, particularly in the forest sector in the tropics.

But then what is SFM? There is currently no universal definition of SFM or agreed list of elements that constitute and measure sustainable forest management. At best the various multilateral environmental agencies (MEAs) have defined SFM based on their focus and mandates. For example the United Nations Forum on Forests (UNFF) defined SFM as “ *a dynamic and evolving concept, aims to maintain and enhance the economic, social and environmental values of all types of forests, for the benefit of present and future generations*”

(United Nations, 2008). The FAO on the other hand defines SFM as *“the stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biological diversity, productivity, regeneration capacity, vitality and their potential to fulfil, now and in the future, relevant ecological economic and social functions, at local, national and global levels, and that does not cause damage on other ecosystems.”*

This lack of a common understanding for SFM poses a problem not only in the international forestry discourse but also for forest owners, in particular Small and Medium Sized Forest Enterprises (SMFEs) whose needs tend to be overlooked. International debate and developments since the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992 and that of the World Summit on Sustainable Development held in Johannesburg in 2002 and more recently the Conference of Parties (COP 15) in Copenhagen in 2009 have resulted in a focus on the world’s forests and their potential in addressing climate change while providing livelihoods. Concern for the loss of forest and biodiversity, climate change and global warming has increased dramatically over the last decade. The debate on forests and the environment is focused increasingly on the cross sectoral nature of forests and that any solutions to addressing forest related issues, such as unsustainable forest practices, harvesting, forest degradation, impacts of climate change, poverty alleviation, illegal logging, corruption and good governance, must take an inter-sectoral approach because of the interdependency of forests with other sectors. As a result there is a growing concern on the link between absence of good governance, unsustainable forest practices, illegal logging, forest degradation, corruption and poverty (Johnson 2000; ITTO, 2004; Kishor and Rosenbaum 2003; Richards *et al*, 2003; Teketay 2005). This concern has resulted in governments, in particular the European Union (EU) member countries and more recently Japan, United States of America (USA) and New Zealand, introducing public procurement policies for timber as a means of ensuring legality and sustainability of their purchase (Rytönen, 2003). These policies require that timber purchased or traded must be from legal and sustainable sources (FAO, 2006; Ghanaweb, 2005; TTJ, 2005). Such evidence could be in the form of attestations of legal origin, legal compliance and/or certificates of sustainability. Timber certification is therefore viewed as a tool to promote the values and objectives of sustainable forest management. Additionally, it is viewed as a tool for market access, given the demand for evidence of attestations for legal compliance and sustainability. Eco-certification and eco-labelling is therefore increasingly being viewed by governments as a means to enhance the management of forests (Dauvergne and Lister, 2010).

It is now acknowledged that it is essential to optimise forest management to maintain and enhance the long-term health of the forest ecosystems, whilst providing environmental, economic, social and cultural opportunities for present and future generations. Therefore, for some stakeholders, such as the environmental non-governmental organisations (ENGOS), timber certification is equated to sustainable forest management. The Forest certification process involves third party evaluation of the environmental and social effects of a wood producer's operations, and then providing consumers with a choice in their purchases of timber and timber products (Bass *et al.*, 2001).

It is acknowledged by various authors (Baharuddin and Simula, 1996; Nussbaum and Simula, 2004) that certification may promote sustainable forest management. These authors report that the timber trade and industry in Europe have generally accepted that certification is a tool for providing market access and competitive advantage. Others such as Walley and Whitehead (1994), Wong *et al* (1996) and Peattie and Charter (2003) have argued that certification is an added cost that provides no competitive advantage. Despite the strong differences in opinion, the demand for evidence of legality and sustainability has been strong, in particular for timber originating from the tropics (TTJ, 2005). It can therefore be argued that the issue is more of meeting market requirements rather than achieving SFM. Hence the need for a forest certification model that does not unduly burden the industry but which is credible enough to meet the needs of the discerning market.

Between 2005 and mid- 2009 certified forest area increased globally by over 34% to reach 321 million hectares. Certified forest accounted for about 8.3% of the world's forests (FAO, 2009). Certified forests in the tropics accounted for less than 3% of the global certified forests in 2009, mainly as a result of certified forests in Indonesia and Malaysia that are implementing national forest certification schemes (UNECE, 2010). This lack of certified timber has resulted in market demand shifting from sustainable forest management (SFM) certification to independent verification of legal origin and legal compliance. Environmental non-governmental organisations consider this shift in demand for attestations of legal origin and legal compliance as lowering of the forest certification standards. However, this demand for evidence of legality and sustainability based on the existing forest certification standards places a cost burden on timber producing countries, in particular, tropical timber producers and is pronounced for Small–Medium Sized Forest Enterprises (SMFEs) (Butterfield, 2005; Steven and Scott 2005). SMFEs are companies with a labour force of less than 30. This calls

for a certification approach that would be acceptable to all stakeholders, particularly SMFEs, minimise cost to producers, maximise their access to markets including the domestic market and thereby promote sustainable forest management.

SMFEs are largely invisible economies that get ignored in most policy development (Thomas *et al*, 2003). These SMFEs however form the bedrock of most African economies (Baah-Wiredu, 2006) and their contribution in terms of employment generation in the Ghana forest sector is high. The SFMEs are key players in meeting domestic demand for timber and efforts at promoting forest certification must involve this group.

The failure of policy-based approaches in forestry to support sustainable forest management has increased the need for alternate options and has resulted in the growing demand for voluntary and independent market-based incentives that seek to promote sustainable forest management (FSD, 1996). This need has been filled by initiatives from the non-governmental agencies and the private sector. These initiatives have brought about a proliferation of forest certification requirements and standards such as those of the Forest Stewardship Council (FSC), the Programme for the Endorsement of Forest Certification (PEFC), The Malaysian Timber Certification Council (MTCC) and a number of Business to Business (B2B) initiatives at providing evidence of legality or sustainability of the forest resource. The proliferation of requirements has created additional burden to producers who have to meet different customer needs based on their preference for schemes, thereby leading to added cost and erosion of competitiveness, particularly for the SMFEs in tropical timber producing countries. Additionally, the lack of harmonisation of standards by the various schemes makes it difficult for the SMFEs, most notably those in tropical timber producing regions, to attain any form of certification (Higman and Nussbaum, 2002).

The relevance of these challenges is that there is a large number of SMFEs in Ghana that are constrained by the lack of clarity on the implementation of forest certification in Ghana. For instance, as at September 2010, even though Ghana made a commitment in 1996 to undertake forest certification, no Ghanaian companies had achieved forest certification. Its forest certification standards were only submitted to the FSC scheme for recognition and endorsement in 2008. A key challenge for Ghana is that in the past it was managing its forests on a sustained yield basis. The focus was on timber production for export so forest management did not therefore take into account other elements of sustainable forest

management, in particular the social and environmental aspects and the domestic market requirements and impact.

The growing demand for forest certification has adversely affected Ghana's exports to its traditional markets that are now more environmentally sensitive. This is because Ghana is perceived as a high risk area for illegal logging and Ghanaian companies in their logging are not taking into account the social and environmental aspects of forest management. For example, exports of wood products from Ghana to the European Union have fallen from a share of 71% of total export volume in 1991 to 33% in 2009 (TIDD, 2009). Timber is a major foreign exchange earner for Ghana and any further decline due to the loss in market share could have adverse effects on its economy and the allocation of resources by central government for forest management.

There is therefore an urgent need for Ghana to develop and implement some form of forest certification or verification system to reassure markets demanding sustainable timber that it is managing and producing its timber in an environmental and socially responsible manner. This can probably be achieved through forest certification and timber tracking. However, any certification or verification model adopted should be politically and socially acceptable, economically viable, meet the needs of the SMFEs in Ghana while being acceptable in Ghana's key markets of the European Union and the USA.

1.2 Problem statement

Ghana's commitment to sustainable forest management is reflected in its accession to a number of international environmental and forestry related treaties. It is also reflected in its early engagement in the process of forest certification (FD, 1996) and more recently its engagement in the EU Forest Law Enforcement, Governance and Trade (FLEGT) process. However, after a decade, neither Ghana nor any of the timber companies has yet had any of its forest certified for sustainable forest management or verified as legal. So the question is "*Why has Ghana not made progress on forest certification or the production and trade of verified legal timber?*" In answering this question the research seeks to identify barriers to forest certification as well as elements that can promote the growth of forest in Ghana. The research will provide guidance to Ghana and other tropical timber producer countries in overcoming barriers to forest certification with the view to facilitate the growth to forest certification in the tropics. Certification in the developing countries such as Ghana has

generally not seen any growth since 2002. Most of the world's certified forests (84%) are located in North America and Europe (Purbawiyatna and Simula, 2007).

1.3 Research aim and objectives

The overall aim of the research is to investigate attitudes and perceptions of barriers to the implementation of forest and products certification in Ghana by the timber industry in Ghana and identify factors that promote the growth of forest certification. The research therefore investigates those factors responsible for the slow pace of certification in Ghana. The research further seeks to develop a supportive strategy and model that allows timber firms, especially SMFEs, to achieve forest certification and the production of verified legal timber. This will enable firms in Ghana to be socially responsible, manage forests sustainably and to gain access to markets in a cost effective way by providing evidence of sustainable forest management and production of legal timber. The underlying assumption is that addressing the constraints to forest certification and the production of legal timber will result in:

- Achieving SFM as a national goal;
- Gaining access to markets for Ghana's wood products;
- Achieving competitive advantage in the timber trade in international markets;
- Attracting investments into the timber sector in Ghana;
- Reducing the rate of forest degradation and deforestation to take advantage of the emerging REDD+ initiative and resources.

Though the study focus is Ghana, it is anticipated that the findings of the research will prove useful to other tropical timber producing countries and provide insights for forest industries worldwide as they confront similar issues. This is consistent with the approach adopted by other researchers in determining the replicability of their research work into other regions (Karna *et al.* 2003).

To achieve the above stated aim the following activities are undertaken:

- i. Review of literature and practices on:
 - a. Forests, forest management, timber industry and trade in particular forest certification and verification of legal timber in Ghana and the tropics in

- general;
- b. Tropical timber trade and the changing trade flows;
 - c. Approaches adopted by various initiatives at company, national, regional and international levels to implement forest and product certification including the Convention in Trade in Endangered Species (CITES);
 - d. Experiences and lessons learnt on certification in other sectors such as agriculture, mining, tourism and cocoa;
 - e. Existing models used in forest certification;
 - f. Barriers to forest certification especially in the tropics;
- ii. Develop a conceptual framework based on barriers and challenges identified from the literature review, focus group meetings and the results of the survey of timber firms in Ghana;
 - iii. Develop a model for implementing forest certification and the verification of legal timber in Ghana.

A schematic diagram to guide the research process is shown in Figure 1.1

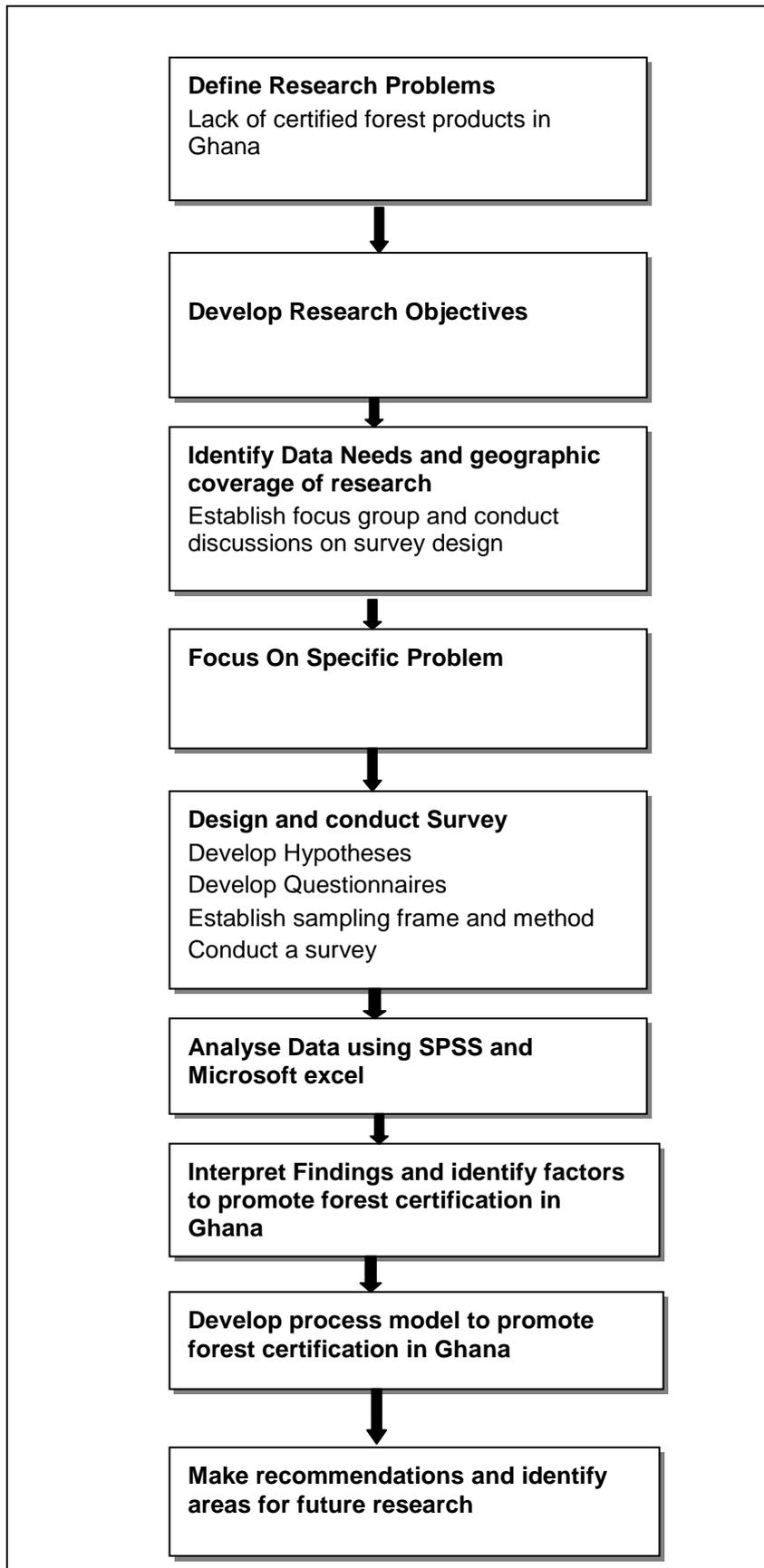


Figure 1.1 The research process flow chart

1.4 Reasons for research interest

The author recognises the importance of the forests, in particular timber exports, to the national economy of Ghana and many tropical timber producing countries, and their contribution to livelihoods and poverty alleviation in these countries. The author's interest in forest certification and the verification of legal timber has allowed for personal observation on developments of forest certification; the FLEGT process and how they could affect business operations, markets and profitability of firms in Ghana. This will allow the author to develop expertise in this new area and contribute to the development and dissemination of knowledge. It is also expected that through this research the author will contribute towards removing barriers to firms in Ghana, and tropical timber countries in general, in pursuing forest certification, including verification of legal timber and gain access to growing environmentally sensitive markets. The author will identify factors for promoting forest certification in the tropics and build expertise in providing guidance to promote the growth of forest certification in the tropics and Ghana in particular.

1.5 Contributions to research

The research will contribute to work on timber certification through:

- The enhancement of understanding of the nature of elements that serve as barriers to the development of forest certification in Ghana and the tropics in general;
- Provision of a better understanding on requirements for promoting forest certification in Ghana and the tropics in general;
- Providing forestry professionals with a framework for developing and implementing forest certification and the production of verified legal timber in the tropics.

1.6 Structure of thesis

The thesis is structured as follows;

Chapter 2: A review of Forest and Forest Management in Ghana – The chapter reviews literature on Forest and Forest management in Ghana. It reviews management practices and their development in Ghana. The chapter also discusses the role of the forest communities and the new thinking around forests and people and their role in promoting forest certification in Ghana and the tropics in general.

Chapter 3: A review of the tropical timber trade - The chapter reviews literature on current issues that impact on the tropical timber trade with a focus on trade barriers and timber certification and production of legal timber. It reviews the changing trade flows for timber. It presents Ghana, its share of the international tropical timber trade. The chapter further reviews developments in the Ghana timber industry and trade as well as its main markets.

Chapter 4: A literature review of timber certification - The section reviews the development of forest certification and includes various initiatives at the international, regional and national levels. Additionally, it reviews certification processes in other areas such as agriculture, tourism and mining. This chapter further reviews the various certification models and the emerging issues linked to forest certification with emphasis on the EU Forest Law Enforcement Governance and Trade programme, procurement policies and legislation on illegal logging and trade in associated products. The chapter concludes by drawing on the key issues and factors that will inform the research work and questionnaire design for the survey. The chapter proposes a model based on the barriers and challenges that are identified and the survey will therefore provide the views and opinions of the Ghana timber industry operatives on the elements in the model for promoting forest certification in Ghana.

Chapter 5: Methodology - This chapter discusses the methodological approaches for investigating the main research questions. This involves the design and use of questionnaires in the survey to establish attitudes and perceptions on barriers for timber certification in Ghana and factors that are used in developing a suitable model to promote timber certification taking into account the needs for the SMFEs in Ghana.

Chapter 6: Presentation of Results - This chapter presents the results of the survey, undertakes analysis of the data and the testing of the hypothesis.

Chapter 7: Discussion of results - This chapter presents a discussion of the results and findings from the literature review and survey. A process model is developed for promoting timber certification in Ghana.

Chapter 8: Conclusions and recommendations – This chapter highlights conclusions of the study and proposes some recommendations for consideration in the promotion of forest certification in Ghana. Any gap in the research work is acknowledged and further work in this area is proposed.

CHAPTER TWO

2 Forest and Forest Management in Ghana

2.1 Introduction

This chapter provides an overview of Ghana, its geography, economy, people, and politics. The chapter reviews forestry, forest management and the developments in the Ghana timber industry and trade. The chapter also discusses the role of the forest communities and the new thinking on managing forests and people. The chapter concludes by highlighting the challenges to sustainable forest management in Ghana and hence forest certification and Forest Law Enforcement and Trade in legally produced timber.

2.2 A brief description of Ghana

The brief description of Ghana is based on information obtained from the Economic Intelligence Unit – Country Profile and with updates from various online data sources such as the World Bank.

2.2.1 Forest Administration and Climate

Ghana lies in the centre of the West African coast and shares borders with the three French-speaking nations of Côte d'Ivoire to the West, Togo to the East, and Burkina Faso to the North. To the south are the Gulf of Guinea and the Atlantic Ocean.

Ghana has a total land area of 238,537 square kilometres and is about the size of the United Kingdom (UK). Ghana is divided into 10 administrative regions and 110 districts. Governance is encouraged at the district level in line with Ghana's policy of decentralisation. Hence there is a policy to decentralise forest administration to the regional and district levels. This policy of decentralisation is a key challenge to the forestry sector given that the political administration at the districts report through the Minister in charge of local government while the forestry administration reports to the Forestry Commission and the Ministry of Lands and Natural Resources. The forestry sector has therefore not aligned itself to the decentralised system due to the lack of structures to govern forest management at the district level. Admittedly this would have been a good approach to bringing the responsibility of forest management close to the communities and would have strengthened the monitoring of timber production and utilisation and enhanced the participation of the local and forest communities.

The 10 administrative regions are Greater Accra, Eastern, Western, Central, Volta, Brong Ahafo, Ashanti, Northern, Upper East and Upper West (Figure 2.1)

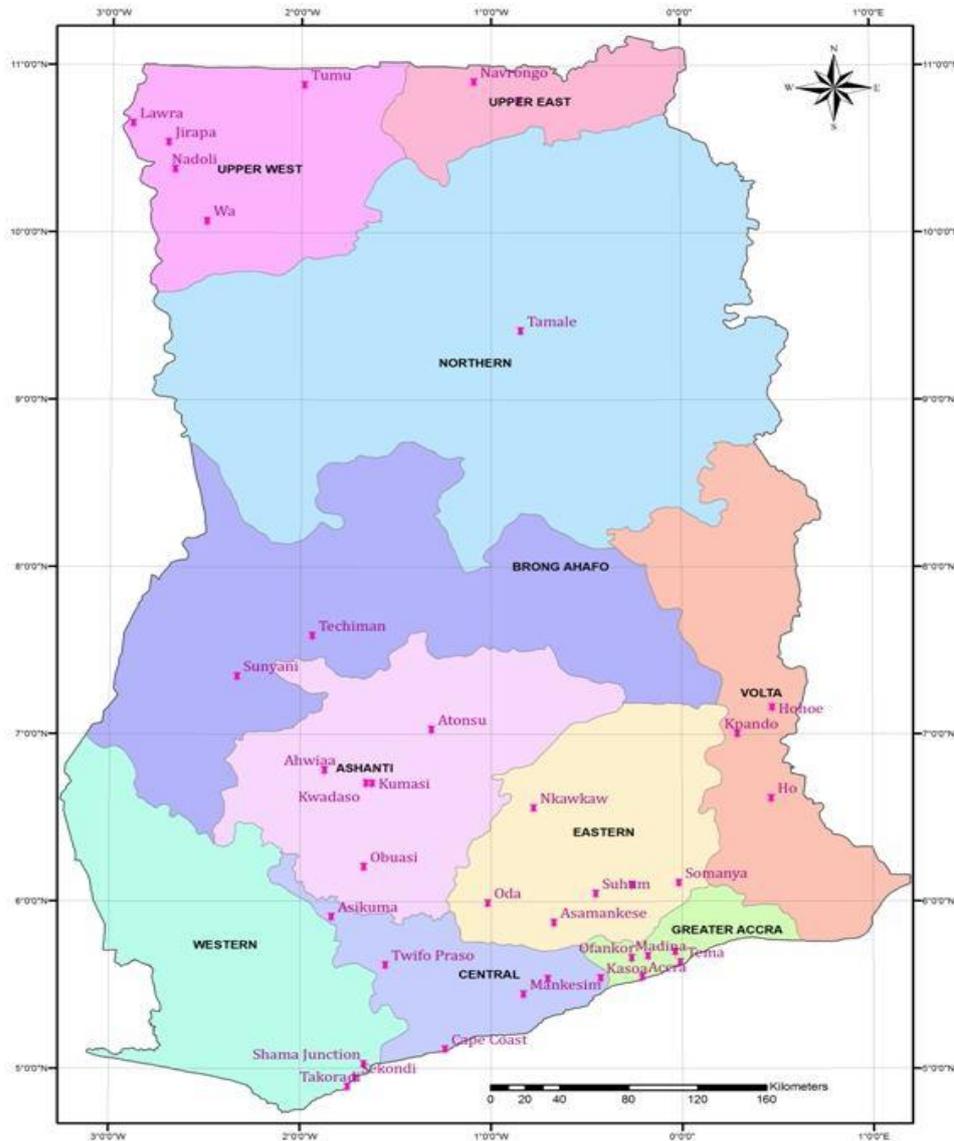


Figure 2.1 Administrative map of Ghana (Obiri et al, 2009)

The climate is tropical. Temperatures are generally between 21 and 32 degrees Celsius. It is usually breezy and sunny. In the south, there are two rainy seasons, from March to July and from September to October, separated by a short dry season in August and a relatively long dry season from mid-October to March. The rainy season has major implications for forest management and the operations of the timber industry since timber production is lowest at this period due to the rains and conditions in the forest that make it difficult to extract timber. This also has implications for reforestation activities and those of natural regeneration. The southwest is hot and humid, with annual rainfall averaging 2,030mm. The extreme southwest,

around Axim, records the heaviest rainfall. The south east coast is warm and comparatively dry. The north on the other hand has only one rainy season, that is, from July to September. The north is hot and dry. Except for limited production of Mahogany (mainly *Khaya senegalensis*) and plantation timber (mainly teak), there is no production of timber in the 3 regions of the North. The vegetation in this region is Guinea savannah.

2.2.2 People

Ghana's population is estimated at 23.4 million with a growth rate of 2.2% over the period 1998-2008. This growth rate of population in Ghana is below the average rate of 2.5% for Sub-Saharan Africa (SSA) (World Bank, 2010). Estimates of Ghana's population for 2003 was 20.9 million (Donkor, 2003 and EIU, 2004). Main ethnic groupings are Akan (49.1%), Ewe (12.7%), Ga-Dangbe (8.0%) and Moshi – Dagomba (16.5%). Life expectancy is 58 years for women and 56 years for men. Literacy level is 74.8% and there is a work force of 10.6 million.

2.2.3 Economy

Ghana is predominantly an agricultural country with subsistence agriculture accounting for over 54.6% of the workforce (World Bank, 2010). There are expectations that its recent discovery of oil could influence the development of its economy. Ghana has undergone economic changes since the 1970s, in particular after the military interventions in the 1970s and 1980s. This period of military activity created major challenges for Ghana. More and more management positions were increasingly held by Ghanaians. This resulted in the state taking control of key private sector investments. These were however run down and the economy had collapsed by the early 1980s (Donkor, 2003). This resulted in the introduction of the World Bank sponsored Economic Recovery Programme (ERP) in 1983 (Appiah, 1996; MLF, 1994, EIU, 2004). This intervention has resulted in the reversal of the decline of the 1970's and Ghana's current economic indicators are as shown in Table 2.1 below:

ECONOMIC INDICATOR	2003	2008
GDP	US\$ 7.5 billion	US\$ 16.7 billion
Real GDP growth	5.2%	7.3%
GDP/head (US\$)	359	714
Inflation rate	23 %	17%
Exports(fob)	US\$ 2.6 billion	5.3 billion
Imports (cif)	US\$ 3.3 billion	10.2 billion

Table 2.1 Economic Indicators for Ghana (EIU/US Department of State, 2004 and World Bank, 2010)

Ghana's Gross Domestic Product (GDP) experienced a 122% growth over the five year period from 2003-2008 to reach US\$ 16.7 billion. Meanwhile, the inflation rate had been reduced from 23% in 2003 to 17% in 2008. Although its exports had about doubled, its imports had more than tripled (World Bank, 2010). The relevance of this is that Ghana remains a net importer and over time its external debt would grow resulting in economic instability. This instability could affect the revenue flow to the forestry sector from central government despite its contribution to the national economy.

Ghana is endowed with natural resources which include timber, industrial diamonds, bauxite, manganese, fish and gold (Donkor, 2003). More recently, there have been discoveries of oil in commercial quantities (Ghanaweb, 2010). The endowment of natural resources presents a key challenge for the management of Ghana's forests since the forest reserves contain large deposits of important minerals. It is therefore a potential area of conflict between the minerals and forestry sector and could have an impact on forest certification or the production of legal timber.

The forests of Ghana provide the required environment for the production of Ghana's export crops such as cocoa. This formed the basis of forest reservations and the creation of the Permanent Forest Estate (PFE). The management practice at the time (that is in the early part of the twentieth century) was not targeted at sustainable forest management but sustainable yield of timber. Despite this management regime the forest provided the required conditions and environment to ensure the production of cocoa. This policy objective was to guarantee

revenue flows to the colonial administration to ensure cost recovery in the British administration of its colonies (Boateng, 2007). The forests also account for 75% of Ghana's energy requirements in the form of fuel wood and charcoal. It is presently a major cause of forest disturbance with the potential for conflict between the forest regulators and the communities since energy requirements of the communities are met mainly from wood.

2.2.4 Politics

Ghana was the first sub-Saharan country that gained its independence from the United Kingdom in 1957. Since then, two political traditions have dominated the political landscape in Ghana; namely the Nkrumaist and the Dankwa – Busia traditions (EIU, 2004). However, since 1996 there has been the emergence of a third political force with the transformation of the military dictatorship – Provisional National Defence Council (PNDC) into a political party the National Democratic Congress (NDC). Since 1996 political power in Ghana has rotated between the Dankwa-Busia tradition and the emerging third force of the NDC. Currently the government in power is the NDC. It took over leadership in 2009 after multi-party elections in December of 2008 after being in opposition for eight years. This change in party leadership twice since 1996 through national elections has given Ghana a good image as a democratic country.

Ghana has an executive president elected for a maximum of two four-year terms. Its legal system is based on the English common law and customary law (Donkor and Vlosky, 2003).

2.3 The Ghana Forest Industry

Agriculture, including Forestry, is the strongest sector in the Ghanaian economy, accounting for 50% of export earnings. Forestry as a sub-sector accounts for 6% of the GDP, 11% of export earnings and employs a labour force of 100,000 people (Attah, 2005). The forests provide the required environment for the production of Ghana's export crops such as cocoa. The forests also account for 75% of Ghana's energy requirements in the form of fuel wood and charcoal.

2.3.1 Ecological zones

Ghana has five distinct ecological zones. These are the rain forest (3%), moist forest (31%), interior savannah (57%), coastal savannah (5%) and swamp vegetation (4%) (Ntiamoah –

Baidu, 2001). The tropical forest therefore covers 34% of the land area of Ghana. One third of this forest (18 000 km²) is reserved forest; (Hall and Swaine, 1981).

The tropical forest of Ghana consists of four main forest types. These are the Wet Evergreen, Moist Evergreen, Moist Semi-deciduous and Dry Semi-deciduous forest types (Hall and Swaine, 1981).

2.3.2 Forest resources

Ghana has a total land area of 23.85 million hectares (ha). Forests cover about one-third of Ghana's total land area, with commercial forestry concentrated in the southern - western parts of the country. The annual rate of deforestation is estimated at 1.89% (FAO, 2005).

The timber resource is mainly from the closed forest, which forms 34% (i.e. 8.23 million ha.) of the country's land area. The remaining 66% (i.e. 15.62 million ha) is represented by savannah wood land type (Appiah, 1990). The gross national standing volume (growing stock) is estimated at 188 million m³, of which 102 million m³ is marketable/mature volume and 86 million m³ is immature stock (Ghartey, 1989). Ghana's forest is divided into reserved forests and off reserve forests. The reserved forests constitute the Permanent Forest Estate (PFE). These are divided into production and protective forests. Production forests cover 1, 247,000 ha of which 97,000 ha is planted forests. Protective forests cover 353,000 ha (Gyimah, 2007). Only 270,000 ha of the PFE are managed on a sustainable basis. No forests are currently certified in Ghana (Gyimah, 2007).

2.3.3 Off Reserve Forests

Off reserve forests are mainly farm lands and supplied the bulk of Ghana's timber before 1990. Managing trees outside forest reserves is the key to sustainable forest management in Ghana (Treue, 2001). Off reserves continue to be a major source of timber for the domestic market that is heavily reliant on chainsawn timber. Chainsaw lumber production does not take into account the sustainable management of the forest or practices. Additionally, the policy since 2000 has been to liquidate the off reserve areas. Hence harvesting quotas that were introduced to enhance sustainable production of timber in the off reserve areas have been removed. Hence timber coming from the off reserves cannot meet criteria for SFM. However, it is possible, in light of existing legislation for harvesting timber in off reserves, to have timber originating from off reserves to qualify to have attestation that the timber is "legally sourced" and legally compliant.

2.3.4 Reserved forests

Forest Reserves have been constituted since the 1920's. The establishment of these reserves was vigorously pursued between 1927 and 1936 when a total of 1.6 million ha had been legally constituted and gazetted. Forest reserves constitute the Permanent Forest Estate (PFE) of Ghana and are presently being managed for multiple uses. There are 266 forest reserves of which 216 occur in the high forest zone of Ghana (Bird *et al*, 2006). These reserves were set up to guarantee environmental stability and the flow of socio-economic benefits to all segments of the society. The reserves enjoyed the support of the farming community, in particular the cocoa growing areas that were using shade dependent cocoa. However, with the introduction of non-shade dependent varieties of cocoa, the value of understorey was reduced resulting in pressure on the reserved forests and the current trend of accelerated deforestation and degradation of forest reserves in Ghana.

The quality of forests within the tropical forest of Ghana is variable with conditions worsening with increasing dryness and a disproportionately high proportion of good forests located in hill sanctuaries (Gyimah, 2007). The current distribution of forest reserves and their condition is shown in 0

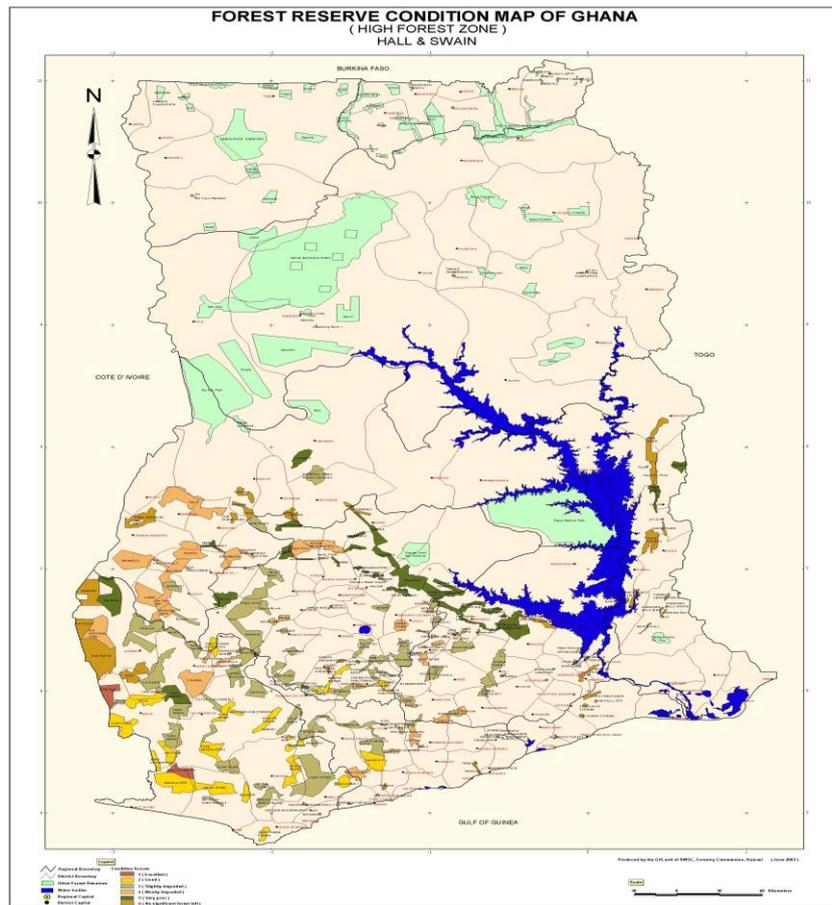


Figure 2.2 Forest reserve condition map (Hall and Swaine, 1976)

The existing forest reserve area is categorized as shown in Figure 2.3

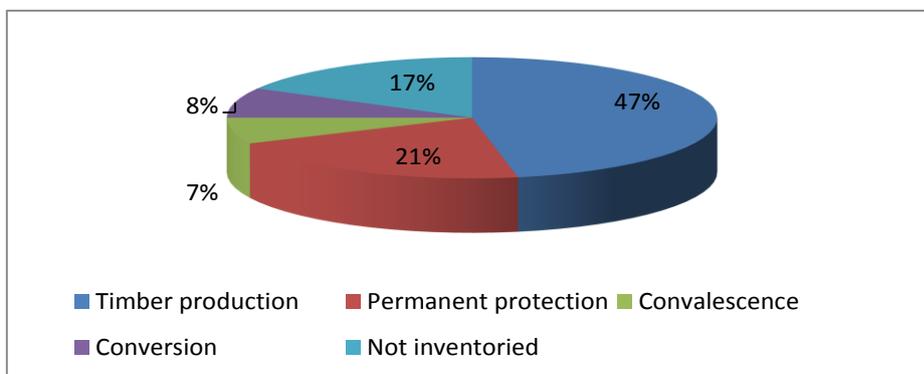


Figure 2.3 Forest reserve area by category

The permanent protection areas consist largely of hill sanctuaries, shelterbelts, special biological areas etc., of which 69% is inaccessible and 15% is protected for genetic diversity. The convalescence forests are areas of reduced stocking but capable of restoration within one felling cycle. Ghana has had three different lengths of felling cycles between 1950 and 2007 (Bird *et al.*, 2006). These were:

- 1950 -1971: 25 years
- 1972-1989: 15 years
- 1990 to date: 40 years.

The fifteen-year felling cycle was introduced in 1972 to encourage the removal of over mature trees through salvage felling. This led to over exploitation and the loss of controls in forest management in Ghana (Bird *et al.*, 2006). This period also witnessed the neglect of writing of management plans for the forest reserves of Ghana – a key requirement to forest certification in Ghana. Bird *et al.*, 2006 further cite the introduction of the forty-year felling cycle as the start of forest management planning that seeks to address the challenges to sustainable forest management in Ghana. This effort was met with some resistance from the timber producers who have a strong political lobby. The introduction of forest certification and verification of legal timber in Ghana could therefore be seen as a means to counter balancing the strong lobby of the producers in order to achieve SFM. This could strengthen forest regulation and promote compliance of forest laws.

Results from the national forest inventory in 1989 -1991 recorded 680 tree-species in Ghana's forests, of which 420 species is harvested for timber with about 126 of them in sufficient quantities for exploitation (Appiah, 1990). The annual allowable cut is estimated at 1.0 million m³ with 500,000m³ coming from reserved forests and the remaining 500,000m³ from off-reserves (MLF, 1996). However, in 2003 and given the pressure on the forests of Ghana, the Ministry of Lands and Natural Resources (MLNR) administratively increased the annual allowable cut to 2 million m³; 500m³ from forest reserves and 1.5million m³ from off – reserves. It is however estimated that an increase in the utilisation of the lesser-used species will allow for a revision of the annual allowable cut upwards. The distribution of species in the forest reserves of Ghana from the national forest inventories in 2001 is shown Figure 2.4

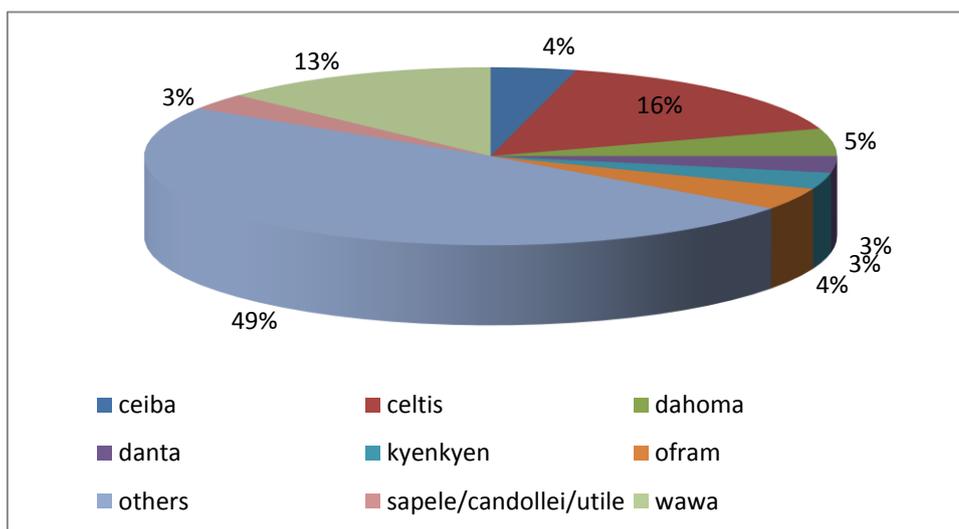


Figure 2.4 Composition of species in forest reserves (RMSC, 2004)

Three species Wawa (*Triplochiton Scleroxylon*), Celtis (*Celtis spp.*) and Ceiba (*Ceiba pentadra*) accounted for 33% of the forest stocking in 2001 (Appendix 1). Celtis has now become the dominant species in Ghana's forest reserves and will be targeted for increased exploitation, particularly for the production of plywood and veneers. Ceiba has also become one of the major species being harvested and is also used in the production of plywood and veneers. These species are included in the list of species that have been earmarked for promotion by the Ghana Forestry Commission. They are species of choice in the manufacture of peeled veneers and plywood. In recent times volumes of these species have seen steady growth on the American market. Given that the American market is becoming sensitive to environmental issues, the ability for Ghana to maintain this market will be dependent on its ability to undertake SFM and provide evidence on the credibility of the source of timber.

Based on the current status of the forest resources, the Ghana Forestry Commission has grouped the economic timber species as follows:

Scarlet Stars

These are the most heavily over-exploited whose production volumes exceed twice their AAC (> 200% of Annual Allowable Cut (AAC) Rate); these include species such as Afrormosia (*Pericopsis elata*), Iroko (*Milicia excelsa*), Sapele (*Etandrophragma cylindricum*).

Red Stars

Species exploited roughly in balance with the AAC (50-100% of AAC). These species include Afzelia (*Afzelia Africana*), Ceiba (*Ceiba pentandra*) and Ekki (*Lophira alata*)

Pink Stars

These are cut commercially but at a very low rate (<50% of AAC). The Pink Stars are subdivided into Promotable Pinks and Other Pinks, to distinguish between Pink species that are abundant and ecologically robust enough to withstand increased exploitation from those that are not. The promotion and development of species for use by the trade and industry in the future will therefore be focused on the Promotable Pink Stars and for which a credible system for tracking must be established if Ghana is to maintain its market share. Some of the pink star species include Celtis (*Celtis spp*), Dahoma (*Piptadenastrum Africana*), and Kyenkyen (*Antiaris Africana*). The Timber Industry Development Division of the Forestry Commission of Ghana has focused its promotional activities on the promotable pink star species.

The Forestry Commission presently uses diameter limits and a permit system to guide the exploitation of species. Species that have been exploited heavily in the past or are threatened require harvesting permits.

2.4 Forest plantation

Existing plantations are about 76,000 ha and made up of teak (38,560 ha), Gmelina (*Gmelina arborea*), Cedrela (*Cedrela odorata*), Wawa (*Triplochiton scleroxylon*), Emeri (*Terminalia ivorensis*), Ofram (*Terminalia superba*), Mansonia (*Mansonia altissima*), and Afrormosia (*Afrormosia elata*) (Upton and Attah, 2003). In 2001 the Government of Ghana launched a plantations development programme as part of its poverty alleviation strategy. Under this program 20,000 ha was planted in 2002 and for subsequent years an annual target of 80,000 ha has been set. However, in 2008 only 12,314 ha of degraded forest were planted. The plantations development programme is under three systems namely the (i) Modified Tungya System (MTS) that involves the establishment of plantations by the Forestry Commission in collaboration with the farmers, (ii) Government Plantations Development Programme (GPDP) under which the Forestry Commission hires labour to develop the plantations using funds from relieve under the Highly Indebted Poor Country initiative and (iii) Community Forest Management Project (CFMP) in collaboration and funding from the African

Development Bank (AfDB) These programmes are expected to afford income generating activities in the rural areas as well as providing security of future demand of timber in Ghana. Under these programmes both the private sector and local communities will plant identified areas under a modified tungya system. The tungya system is a model used in plantations development in West Africa where government allows farmers to grow food crops alongside tree crops for up to five years so as to tend trees that have been planted. It uses the labour of the farmer which is used to tend the trees until the tree cover no longer permits the growth of food crops and the farmer is moved out. Under the tungya system farmers will receive 40% of benefits accruing from the plantation at harvest. Other beneficiaries under the system are:

- Land owners – 15% of benefits
- Forestry Commission – 40%
- Forest communities – 5%

However, the land owners, in particular the traditional rulers have started to demand an increase in their share of the benefits and this could raise issues of non conformance in meeting the requirements of forest certification. The lack of transparency in the sharing of revenues from forests is one of the issues flagged by NGO's that is a key challenge for Ghana's implementation of the Voluntary Partnership Agreement (VPA) with the European Union (Bird *et al*, 2006).

The Government through the FC is also implementing a model forest plantation in degraded forest reserves with a view to scaling up successful plantations approaches. Under this component a purely research-based scheme has been introduced to offer FC opportunities to experiment on species and spacing in plantations development. This model covers an area of 160 ha (Forestry Commission, 2008).

Plantations development programmes in Ghana are constrained by the issue of land tenure, a major requirement for compliance with requirements for forest certification and verification of legal timber schemes. Forest certification requires long term land tenure and security of tenure. The Government, through the Ministry of Lands and Natural Resources, seeks to guarantee access and security to land though the approach or method to land acquisition is yet to be determined and could be a constraint to the development of forest certification in Ghana.

2.5 Forest Policy

The evolution of forest policy in Ghana took place in the following three main phases (Kotey *et al.* 1998) These are:

Consultative phase: 1874 - 1939. This period saw the emergence of the timber trade and the expansion in the production of cocoa and other cash crops. Hence forest management was geared towards creating an environment that is conducive for the production of cash crops, in particular, cocoa. SFM was at the time of reservation not the goal of the colonial administration. This led to the policy of reservations of forest aimed at protecting watersheds, and maintenance of soil and climate conditions conducive to cocoa production – the main export crop. The cash crop production also led to off reserve liquidation with the view to using the land for cocoa production. The reservations also saw the alienation of communities from the forest by the colonial administration. To date the inability of communities to gain access to forests constrains Ghana's development of an acceptable forest certification scheme. A similar trend in cocoa production is observed in Cote d'Ivoire and Nigeria which was also under colonial administration with similar policies. Today these countries have lost most of their forests. It may therefore be argued that countries engaged in cocoa production saw a rapid loss in their forest cover during this period mainly due to the policy of managing forests to create an environment for the production of cash crops.

"Timberisation" phase: 1940 - 1953. Timber production in Ghana was the main concern in their forest policy. This was to support the war effort and support reconstruction of the empire (British Empire). Cocoa production also continued to be a key feature however the importance of taking into account environmental concerns was limited. An authoritarian approach to forest management was adopted. Forestry was viewed as a technical exercise without considering the people or social issues. Traditional knowledge in managing forest was ignored and provided no inputs in the management of Ghana's forests.

"Diktat" phase: 1954 - 1990s In 1962 the Government took formal control of land and trees to be held in trust for the chiefs and people of Ghana. This was followed by an indigenisation policy and turned an industry controlled by a few foreign firms into a larger number of local companies holding substantial influence at the policy levels. This also resulted in the fragmentation of forest concessions resulting in a less efficient management of forest concessions and a constraint in the Sustainable Management of Ghana's forests. This

fragmentation is also reflected in the structure of the timber industry in having several small to medium sized forest enterprises.

In 1994 the Government of Ghana reaffirmed its commitment to SFM through the revision of its Forest policy of 1948. The broad objective of the 1994 Forest policy is:

“The 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 (MLF, 1994).”

This policy gave rise to an integrated approach to managing Ghana’s forests as well as ensuring that the communities that live in the forest areas are involved in its management and benefit from the resource – a key requirement in Forest Certification. This collaborative approach is a key strategy for the successful implementation of the new forest and wildlife policy thereby aligning Ghana’s forest policy with the requirements of forest certification. This policy is currently under revision to realign Ghana’s forest policy with the current trends in addressing climate change.

2.6 Timber legislation

Compliance with a country’s legislation is one of the pillars of forest certification and the production of legal timber. In Ghana and many developing tropical timber producing countries inconsistencies in the laws have been a constraint to certification. Some of the laws which have evolved from the colonial period still remain in their statutes. However the purpose for which these laws were passed reflected the thinking and objectives of the colonial administration. This did not necessarily take into account the needs of the forest communities.

Bird *et al* (2006) indicated that legislation that was introduced in the colonial period was targeted at ensuring a cost neutral administration. This in their view influenced forest legislation in Ghana. For instance the timber ordinance that was proclaimed in 1907 (Timber Protection Ordinance No. 2) prohibited the felling of immature trees of certain high value species. A key legislation that has impacted on forestry and also forest certification in Ghana is the Concessions Act of 1962 (Act 124) that brought timber lands under the President and granting him powers of management, protection and development. Other legislation that is of relevance to timber certification in Ghana is as follows:

- Trees and Timber Decree, 1974 (NRDC 273) that divided the forest zone into districts and which compelled timber producers to register property marks. Property marks are unique identification marks for loggers who are required by legislation to mark all logs originating from their concessions with the mark. This according to Bird et al, (2006) was the first attempt to provide for a chain of custody of timber. However the property mark *per se* does not ensure the tracking of wood products. It only provides for ownership of the wood product and is limited to logs. Ownership of the log does not necessarily imply a legal harvest of the material. In fact the current proliferation of property marks and the increasing incidence of illegal logging does not support the assertion by Bird *et al* (2006).
- Timber Resources Management Act, Act 547 (1997), seeks to ensure that timber is harvested sustainably under a timber utilisation contract (TUC).
- Timber Resources Management Act (Amendment), Act 617(2002), introduced competitive bidding in the allocation and utilisation of timber resources. It also introduced social responsibility agreements (SRA) that allowed the communities to benefit from the allocation of timber resources through the provision of social amenities. The amendment further allowed for the Ministry of Lands Forestry and Mines to regulate the flow of new investments into the timber industry in order to maintain a balance between the annual allowable cut (AAC) and the installed capacity of mills.

2.7 Forest Sector Development Plan

The forest sector development plan (MLF, 1996) is the vehicle for implementing the forest policy. The plan, which spans the period 1996-2020, seeks to:

- Develop further domestic processing through the provision of incentives and facilities for up-grading skills in the wood sector,
- Remove bureaucratic controls and allow private sector initiatives in resource development and the marketing of wood products,
- Provide assistance and guidance through incentive schemes for the development of the Kiln drying sub-sector,
- Promote the utilisation of lesser –used species and the modernisation of existing plant and equipment to allow for increased efficiency and a more judicious use of the forest resource,

- Develop and expand the resource base through the establishment of plantations. A Forest Plantation Development fund has been set up through a levy on air-dried timber exports of selected species with low resource life (Act 493, 1994). The fund is used to support Ghana's annual plantation programme through the provision of grants, subsidies and loans for commercial production of timber. Secondly, under the Highly Indebted Poor Country (HIPC) initiative, part of the debt relief achieved by Ghana is used to support plantations development.
- Restructure the timber sector through fiscal instruments to create a balance between resource availability and processing capacity. This aims at promoting resource availability and tertiary processing, while providing for the husbanding of the forests to achieve sustainable forest management. However, given the recent development in the Chinese forest products manufacturing industries, where they have sourced material worldwide, Ghana may have to draw lessons from this and not limit their processing capacity to the resource base.

2.8 Recent forest policy reforms

Recent policy reforms that have been introduced to enhance SFM, better utilization of the forest resource and the flow of benefits to forest communities include:

- Suspension of log exports in 1995 – The ban was introduced in the light of increase in demand by developing economies in the Far East, mainly China thus placing pressure on Ghana's forests and its ability to regulate forest harvesting,
- Introduction of interim measures to harvest timber in a sustainable manner. These were measures that involved the community in the process of monitoring forest harvesting, developing forest legislation as well as controlling illegal logging and chainsaw activities. Illegal logging in Ghana is to a large extent limited to the domestic market, in particular, activities of forest communities that require wood for housing. Identifying mills that will produce for the domestic market and for which some incentives such as access to raw material is provided are addressing this problem. Ghana has indicated its desire to work with the international community in addressing the issues of illegal logging and associated trade in wood products. However, these interim measures are administrative and do not have any legal backing, Bird *et al*, 2006.

- Introduction and implementation of the Timber Resources Management Act, 1999 (Act 547) as amended by The Timber Resources Management (Amendment) Act, 2002(Act 617) that incorporates competitive bidding in the granting of timber harvesting rights, provides the main mechanism for achieving the goals and objectives of SFM,
- Provision under the Timber Resources Management Regulations to review quarterly the stumpage fees to attain the economic value of timber. This is currently not complied with due to the strong industry lobby and weak political support for the Forestry Commission. This is denying the communities benefits from harvested timber in their areas. This runs contrary to the requirements of both the FC and legal compliance under the proposed VPA.
- Rationalization of the timber industry through taxation and incentives that is aimed at encouraging further domestic processing. Export levies have been introduced on primary processed products and timber that have low resource life in Ghana's forests and are exported as air-dried timber. Exemptions from levies have been granted for exports in value-added form and in lesser-used species,
- Removal of export duties on imported raw material in order to promote processing for re-export through Free Trade Zones (FTZ) that have been created,
- Plantations development through legislation to rationalize land acquisition and the flow of benefits to land owners,
- Institutional reforms in the forestry sector to reflect the integrated approach to SFM. This has resulted in creation of the Ghana Forestry Commission as an umbrella organisation with divisions responsible for wildlife, forestry and trade. Furthermore the board of directors for the commission are made up of representatives of the various stakeholders in the forest and wildlife sector,
- Development of domestic market for wood products through the provision of incentives and implementation of a quota system to ensure the availability for domestic use.

2.9 Challenges facing sustainable forest management in Ghana

A number of studies have identified challenges facing sustainable forest management in Ghana. Kuffour (2000) examines Ghana's recent approach to SFM and argues that the

introduction of the Timber Resources Management Act, 1997 was to give a greater role to local communities and in the process resulted in placing additional cost burden on the timber industry due to requirements for meeting the social and environmental conditions. Kuffour views the introduction of the Timber Resources Management Act, 1997 as government's intervention that undermines the industry's competitiveness and the important role it is playing in the national economy.

Sackey (2007) in an assessment of Forest management practice in Ghana concludes that the conventional notion that population and infrastructural development is responsible for forest degradation is not supported. This assertion is supportive of the concept of sustainable development as contained in the Rio principles. Sackey further concludes that government policies and stakeholder participation in forest management play an important role in ensuring sustainable forest management. Sackey argues that greater awareness and education on policies and stronger government commitment to enforcement contributes to successes of sustainable forest management and explains the lack of certified forests in Ghana given the weak enforcement.

The role of local communities is emphasised by Appiah and Pederson, 1998 in a study in the Gwira Bansa area in Ghana using the outcomes of a joint forest management project. The project was a private sector (Dalhoff Larsen and Horneman [DLH]) and community collaboration that sought to combine local people's needs to improve their livelihoods with the economic interest of buyers and loggers. The study concluded that the participation of local communities is a reliable tool for forest management in the off reserve areas in the Gwira Bansa area. Though this study was limited to the Western Region of the country there are lessons for other regions in the country and there is the possibility to extend the outcome to the other regions. The engagement of local communities is consistent with the conclusions of Sackey, (2007) in advocating for increased stakeholder consultations. In an earlier study, Appiah, (2002) concludes that good communication and incentives to local communities improves participation in joint forest management. Appiah identifies land tenure and livelihood sources as challenges to SFM while communication, financial support, multiple land use and benefit sharing were key success factors.

Ownbah et al, (2001) on the other hand have argued that the legal framework in Ghana does not provide sufficient incentives for farmers to practice SFM. Under existing legislation, farmers require permits from the Forestry Commission to remove forest produce. Some of the

laws have also been found to be inconsistent and do not provide incentives for SFM. Hence, in developing forest certification or verification of legal timber protocols, Ghana would need to undertake legal reforms to enhance regulation and conformance by the industry.

Challenges facing forest management in Ghana can therefore be summarised to include the following:

- **Legal framework:** Inconsistencies in legislation and the lack of incentives for farmers with trees on their farmlands is not supportive of forest management practices in off-reserve areas.
- **Land use policy:** The lack of a land use policy and the growing competition for land use between forestry, agriculture and mining.
- **Mining in Forest reserves:** This is a key challenge to forest certification of the natural forest since most of Ghana's mineral deposits are found in forest reserves.
- **Communities and benefit sharing:** Colonial administrations created forest reservations. This in effect kept the communities away from the forests denying them access to the resource. Also through legislation the forests of Ghana were vested in the President hence revenue from forests are collected by the government and are shared with the community after the government has taken out its cost of management. The communities have argued that they can manage their own resources and that the benefits flowing to them are low. Additionally, compensations were paid for the reservations did not provide for future generations and overtime communities begin to agitate and argue that they derive no benefits from the resource. There is therefore the compelling need to address this generational benefit gap in the distribution of resources from natural forests.
- **The implementation of the Timber Rights Fee (TRF):** This is new legislation introduced through the Timber Resources Management Act, Act 547 (MLF, 1998) and its amendment Timber Resources Management Act (Amendment), Act 617. These require that fees be paid for rights of access to the forest on an annual basis. However, companies that held concessions prior to the coming into force of the enactment argue that the regulation is not applicable to them since under their existing concessions agreement no TRFs are charged. Under certification this could be regarded as a gap since in the

assessment there will be indication that the company has not complied with all regulations and payments of fees.

- **Resource allocation:** The Timber Resource Management Act, Act 547, 1997 provides for the grant of timber rights that seeks to secure the sustainable management and utilisation of Ghana's timber resources. It provides that no person shall be allowed to harvest timber without a Timber Utilization Contract (TUC). TUCs are required by law to be acquired through competitive bidding, however in the recent past acquisition has been through administrative allocations that sometimes results in political patronage. Timber Utilisation Permits have also been granted for commercial use when they should by law be for non-commercial use. Salvage permits which form the third means of resource allocation should be granted only when projects or infrastructural developments are being undertaken. However, its implementation does not follow the requirements of the law resulting in abuse in its implementation. Hence to a large extent resource allocations do not conform to the requirements of the law making it difficult for timber harvested to be certified as legal or originating from sustainably managed forests.
- **Management Plans:** A review of challenges to forest certification in Ghana at a recent workshop on certification in Ghana identified the absence of management plans as a key constraint. Management plans are written by the Ghana Forestry Commission (GFC) and not by TUC holders. However, Osei, (2008) observed that the GFC does not have the capacity to write forest management plans. Osei, further observed that the activities of illegal chainsaw operators affected the sustainable management of the forests, particularly those under TUC's.
- **The management of forests outside forest reserves:** The Forestry Commission in 2007 removed the quota on off reserves to allow companies to remove all commercial trees in off reserve areas. This policy in effect implies the liquidation of timber in off – reserve areas. It is therefore evident that the off reserve areas cannot come under forest certification under the current policy. At best they can only qualify as legal timber where the allocation of the resource has conformed to the requirements of the law. Timber from the off reserve areas cannot be considered as sustainable managed forests.
- **Harvesting of underwater trees:** With the development of Ghana's hydroelectric power in the early sixties, large tracks of forest area were submerged under the Volta Lake. In

recent times there is interest to harvest these trees and the challenge will be how to manage the production to meet market requirements for certificates of legal origin or sustainability given that existing legislation does not cover underwater timber. This is in critical element that must be covered under Ghana's legal reforms to meet requirements for forest certification and the production of legal timber.

Both NGO's and the timber industry have argued that the off reserve areas are being attacked by illegal chainsaw operators and this is observed as a major threat to sustainable management of Ghana's forests. The illegal chainsaw activities also create a challenge for certification since it will require keeping the chainsaw lumber out of the supply chain for companies pursuing forest certification. Additionally small producers who work in mainly the off-reserve areas supply logs to timber firms in Ghana. These again will pose a key challenge for mills that engage in forest certification since the source of raw material from this group is usually unknown creating challenges for Chain of Custody (CoC) and forest certification in Ghana.

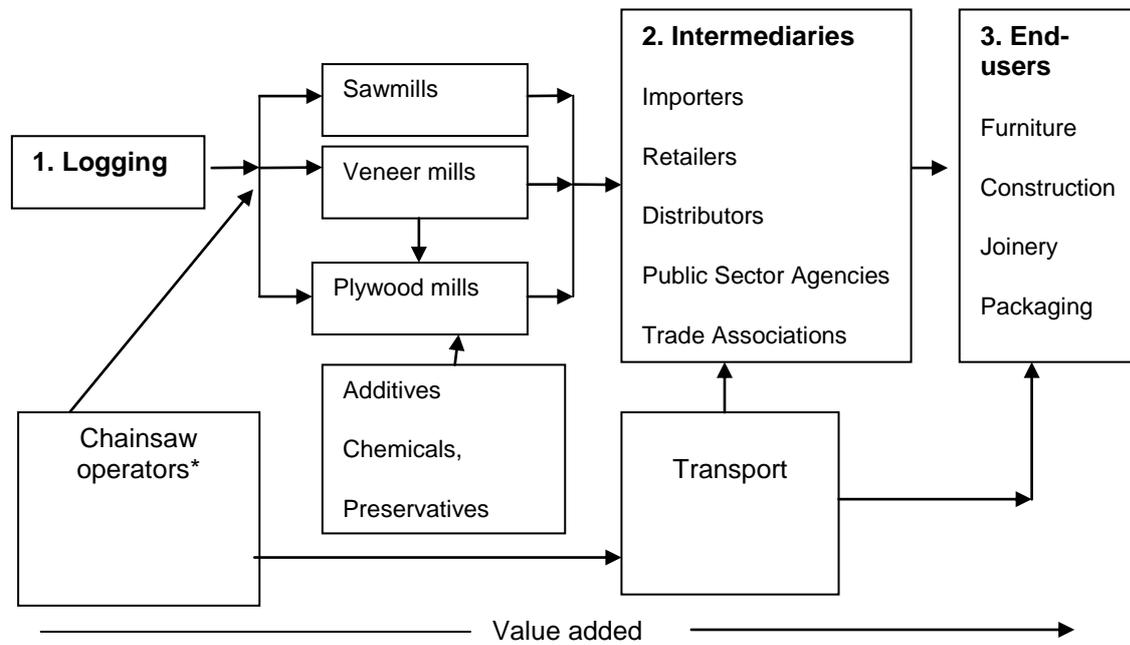
2.10 The Structure of the Ghana Timber Industry

The Ghana Timber Industry is classified under three categories of operations (Table 2.2) as follows:

1. Logging industry: consisting mainly of indigenous companies engaged in timber harvesting and usually small and fragmented with basic logging equipment.
2. Primary processing industry: consisting of saw, ply and veneer mills, which are dominated by foreigners and are mainly export oriented.
3. Secondary processing industry, consisting of manufacturers of furniture parts, mouldings, flooring, toys and other machined products.
4. In addition, informal chainsaw operator's that service the domestic market and whose material is from unknown or illegal sources. There is currently no system to keep material from unknown sources from entering the main production for export. This is a challenge to Ghana's pursuit of forest certification.

Figure 2.5 shows a typical timber industry structure map that emphasizes the supply chain for the timber trade. The intermediaries are a key driver for forest certification. The International Tropical Timber Organisation (ITTO) Tropical Market report 10/20, (2005) states that

Chinese buyers are interested in certified tropical timber due to the demand of certified timber by the European home improvement market.



*Lumber from chainsaw operators feeds into the domestic market only

Figure 2.5 Timber Industry Structure Map

The intermediaries and end users are beginning to influence the purchasing policies of countries and dictate the market requirements with emphasis on the use of timber from sustainably managed sources.

Activity Area	Number of Firms
Logging	220
Primary processing	
- Sawmilling	125
- Veneermilling	28
- Plymilling	16
Secondary Processing	252
<i>of which:</i>	
Small/Medium	178
Large	27
Flooring	7
Chip & Particleboard	1
Doors (medium/large)	10
Toys	4
Profile Boards/ Mouldings	25

Table 2.2 Structure of the Ghana timber Industry (TIDD, 2007)

NB: Some companies are involved in more than one area of activity.

State-owned enterprises (SOE's), which used to be a major feature in the timber trade in the 1970's to early 1990's, have given way to privatisation of firms within the forestry sector as part of Ghana's Economic Recovery Program and governments desire to lay emphasis on private sector development (Appiah, 1990). Appiah also classifies eighty percent of these firms as small to medium sized forest enterprises (SMFE's). Though these SMFE's contribute only about 30% of timber export earnings (TIDD, 2004) they offer considerable employment due the labour intensive nature of the work at these firms.

2.11 Trade Associations

There are three trade associations within the timber sector in Ghana.

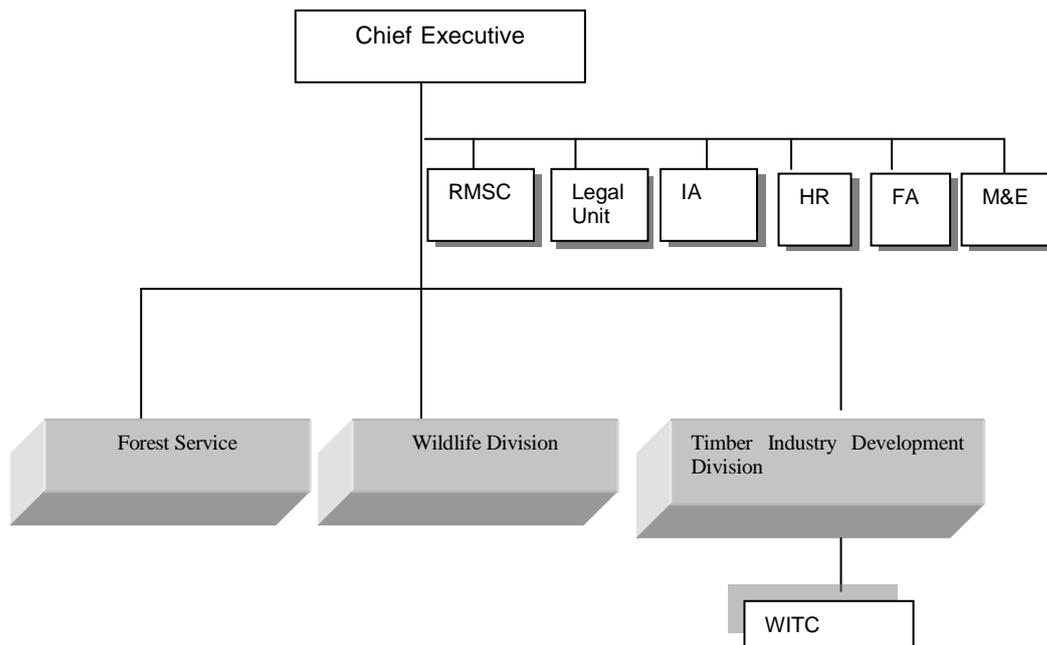
- (i) The Ghana Timber Association (GTA) - representing the interest of loggers and are mainly indigenous Ghanaians with small and fragmented companies.
- (ii) The Ghana Timber Millers Organization (GTMO) – This is a group of millers (plywood, veneer, sawmill). This group has a strong foreign (mainly of Lebanese origin) ownership of mills and also the strongest lobby group due to their political linkages. This group is a mixture of large scale and small and medium sized enterprises.

(iii) The Furniture and Woodworkers Association of Ghana (FAWAG) consists mainly of artisans and producers of machined wood products for the domestic market. A limited number of mills (i.e. 6) are engaged in exports. These mills have complained about access to raw material and are very dependent on chainsaw material which is illegally sourced for their input and will currently find difficulty in pursuing forest certification or certificate of legality. Some of the firms have integrated backwards up the forest supply chain and acquired forest concessions to guarantee access to raw material.

More recently there is the emergence of a fourth trade association, namely the Association of Chainsaw Operators. This is a grouping of operators of chainsaws and retailers of chain sawn timber in the timber markets. This group has a difficulty in gaining recognition from the Government due to the illegal nature of their activity. The use of chainsaw for conversion of logs into lumber for commercial purposes is outlawed in Ghana. Chainsawn lumber can only be used for communal purposes such as in community schools and palaces for the chiefs at the community level. However, the bold nature of the group in creating an organisation that is seeking recognition is a reflection of the state of regulation and enforcement of forest laws in Ghana and would definitely pose a key challenge to forest management and forest certification in Ghana.

2.12 Forest Sector Agencies

Since November of 1999 five public sector institutions in the forestry sector have been restructured to create the Forestry Commission of Ghana. The Forestry Commission has three (3) Divisions as shown in the Figure 2.6 below.



LEGEND

FA: Finance and Administration

RMSC: Resource Management Support Centre

HR: Human Resource;

WITC: Wood Industries Training Centre

IA: Internal Audit

Figure 2.6 Forest Sector Agencies

The Ministry of Lands and Natural Resource has oversight responsibility for the Forestry Commission. The objective of the institutional change is to improve coordination and facilitate the development of the forest resource in an integrated manner. Bringing together these three Divisions into a single unit has proved challenging in managing the change. The core values and cultures of the Divisions were so varied that it is taking time to achieve the required synergies in the work of the Forestry Commission of Ghana. This is therefore affecting the enforcement of forest regulations and the ability of Ghana to pursue forest certification and to implement the validation of legal timber programme.

2.13 Log Production

Log production in Ghana has reduced from a level of 2.05 million m³ in 1973 to 1.2 million m³ in 2010 (TIDD, 2010) due to controls introduced to ensure a balance in resource management. This shows that timber harvesting in Ghana is well below the AAC of 2.0 million m³. The production data has been challenged by civil society organisations who argue that up to three times the officially recorded volume is harvested by illegal operators. This high level of illegal activity and the challenge to official timber production statistics therefore

poses a challenge to forest management and forest certification in Ghana. Recent log production trend shows a steady production of logs since 2001(Figure 2.7).

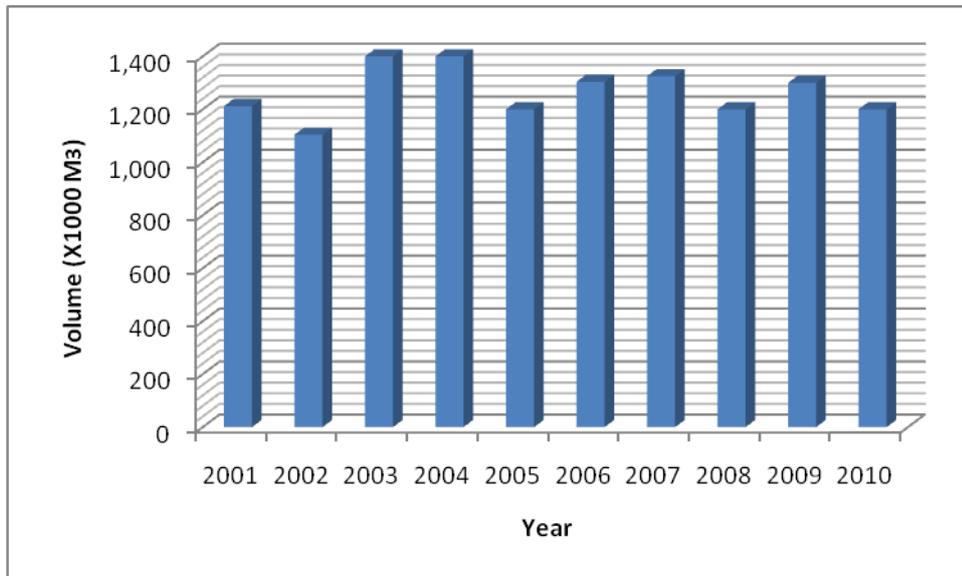


Figure 2.7 Log production trends : 2001- 2010 (TIDD, 2010)

2.14 Sawmill Production

Sawn timber production has shown a gradual decline until 1999 partly due to harvesting restrictions and regulatory measures introduced under the Forest Sector Development Plan (Attah, 2003). However, since 2000 it has shown a general increase and stabilising at an average of 500,000m³(Figure 2.8). This increase is attributed to the revision of harvesting levels in the off reserves from an AAC of 500,000m³ to 1.5million m³ in 2000 as a temporary measure to increase inflow of logs to processing companies. This approach of carrying out change in harvesting levels without recourse to the national forest inventory is challenged by NGO's (Young, 2006) and places Ghana's efforts for SFM in doubt. The capacity of the sawmilling sector in Ghana on the other hand has been growing and is estimated at 2.5 million m³ (Amankwah, 1997). The gap between raw material availability and milling capacity has caused mills to run at 50-60% of their installed capacity or lower (Coleman, 2000). This questions the profitability of milling in Ghana using logs that are legally sourced.

Log availability is a constraint to higher utilization of mill capacity and the Government of Ghana has removed the duty on imported logs to encourage further domestic processing for re-export (Anon, 2002a). Sawn timber production trends are shown in Figure 2.8. The

decrease in sawn timber production in 2008 reflects the difficulties as a result of the global financial, energy and food crisis.

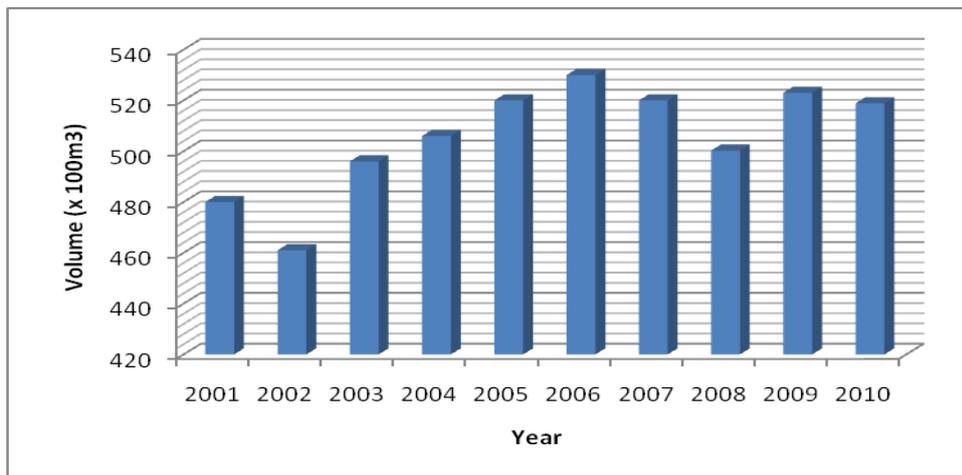


Figure 2.8 Sawn timber production :2001-2010 (TIDD, 2010)

2.15 Veneer production

Rotary veneer mills have increased their milling capacity with the market acceptance of Ceiba and other lesser used species (*Otie, Celtis, and Chenchen*). Current annual production of veneers is 150,000m³ of which 50% is exported (TIDD, 2004). Veneer production statistics for the period 1995 – 2005 is as shown in Figure 2.9

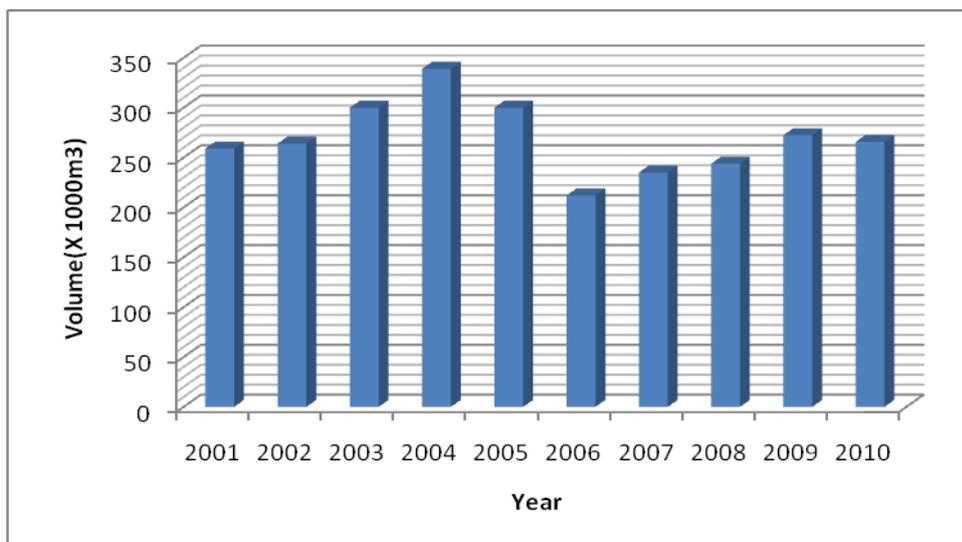


Figure 2.9 Veneer Production: 2001-2010 (TIDD, 2010)

2.16 Plywood production

Production of plywood has suffered a decline since 2008 and may be attributed to the global financial, energy and food crisis. Despite this decline domestic consumption of plywood has

shown an increase from 25,000 m³ in 2008 to 40,000 m³ in 2010. This apparently high increase in domestic consumption is also attributable to the informal regional trade in wood products, particularly to neighbouring West African countries such as Nigeria and Senegal. The plywood production trend is shown in Figure 2.10

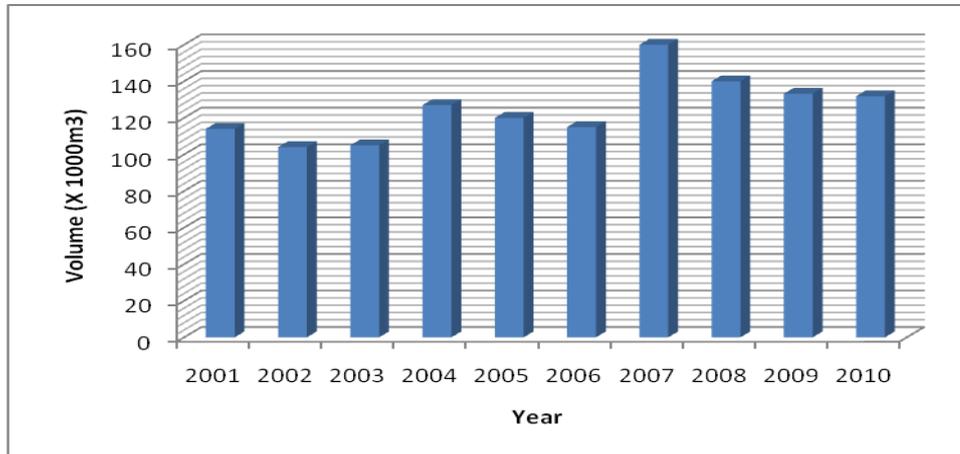


Figure 2.10 Plywood production :2001-2010 (TIDD, 2010)

The economic crisis in the Far East and the collapse of plywood prices did not affect the growth of the plywood volumes due to the buoyant domestic and regional markets (Attah, 2009). However in recent times, plywood production and sales from China are considered to have made an impact on the market and importers, and NGO's are asking for producers to provide evidence of the source of the raw material. This will influence the future sales of plywood from China (Johnson, 2005; Attah, 2009).

2.17 Furniture industry

Furniture factories in Ghana range from small-scale carpenters to large automated companies equipped with machinery capable of large-scale production but focused on production for the domestic market. Furniture and furniture part exports from Ghana have been limited to few companies but ceased in 2010 due to the liquidation of the main timber company. Hence in 2010 there were no exports (TIDD, 2010). Despite Ghana's objective of promoting further domestic processing, this sector is not experiencing any growth over the years and instead there is an increasing number of companies that are importing furniture to meet the growing demand as a result of the boom in the housing and construction industry in Ghana. However, the export trend for tertiary wood products exports is shown in Figure 2.11.

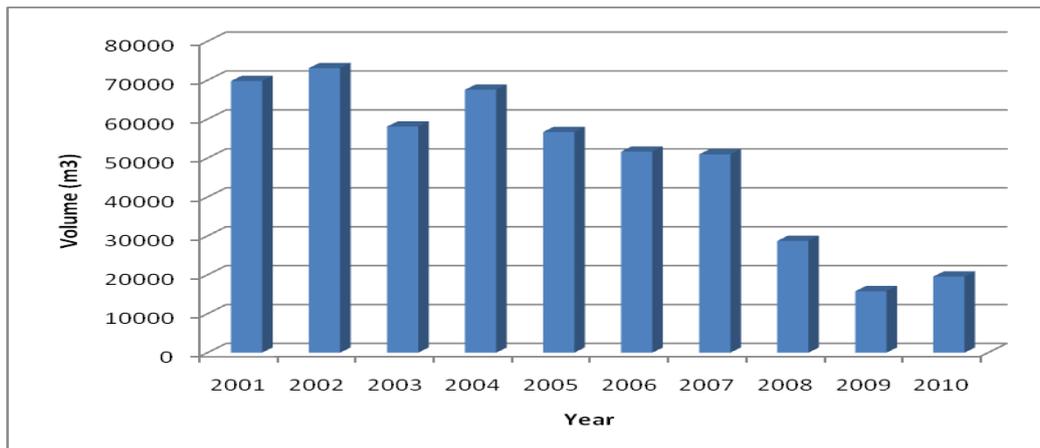


Figure 2.11 Trend of tertiary wood product exports : 2001-2010 (TIDD, 2010)

Tertiary product exports from Ghana experienced a steep decline from 70,000 m³ in 2002 to less than 20,000 m³ in 2010. This is contrary to Ghana's forest policy to shift from primary processing to tertiary processing of wood products. Tertiary product exports are mainly in the form of processed lumber/mouldings. The decrease in tertiary product exports is attributable to the loss in volume from exports of furniture and furniture parts to Europe. These were mainly garden furniture and the demand for certified garden furniture in Europe, particularly the UK market, has posed challenges for furniture companies from Ghana and resulting in the liquidation of one of its leading companies. Exports of tertiary products have challenges for certification in Ghana. Component parts of the tertiary products may be from different sources and there is a need for effective tracking systems at the company level. Such a tracking system is currently available in Ghana only for one company. This will require additional investments and cost to the Ghanaian companies thereby reducing their competitiveness on the international market. However, the Voluntary Partnership Agreement (VPA) between Ghana and the European Union offers opportunities for donor support for establishing the tracking system. Through its VPA agreement with the EU, Ghana has agreed to an expanded product scope and includes tertiary products.

2.18 Conclusion

Until recently forest policy reforms in Ghana have not been supportive of sustainable forest management. Initial policy initiatives in the colonial period alienated the communities and denied them access to the forests. Demand for timber in Ghana has outstripped the supply due to a rapid increase in the population and requirements in the sub region. These have resulted in an increasing level of illegal logging and chainsaw activities that limit the attainment of sustainable forest management.

The challenges to forest certification in Ghana are the conflict in land use most noteworthy between mining and forestry, the lack of engagement of the communities in forest management and control, inefficient resource allocation, weak legal framework and the fragmentation of forest concessions in the allocation of forest resources. The policy of reservation in the colonial period and in the early years after Ghana attained its independence implied the liquidation of the off - reserve areas and conversions to agriculture in particular for the growing of cocoa, the main export crop. This approach has constrained Ghana's efforts at sustainable forest management, particularly in the off-reserve areas. The current Timber Utilisation Permit system in the off - reserve areas coupled with the removal of the quota system for harvesting in such areas have implied that the off- reserve areas are not a target for sustainable forest management. Hence these areas will not qualify for forest certification. They can only qualify as legal timber if they conform to the laws and regulations in the forest sector in Ghana. The inability for Ghana's forestry administration to control illegal chainsaw harvesting, particularly in the off – reserve forest areas has also implied the depletion of the off- reserve areas at a higher than expected rate thereby increasing the pace of liquidation of these areas. Therefore any programme aimed at forest certification in Ghana must take into consideration the timber from the off – reserve areas and the need for an efficient system to be able to keep track of the flow of timber from the two areas, namely the reserve and off – reserve areas. The emerging issue of underwater timber will also pose challenges for Ghana but should be able to qualify as legal timber if requirements of legality are met.

At the operational level the absence of management plans for most of the forest areas has been a constraint to forest certification in Ghana. The Ghana Forestry Commission, which has the responsibility for management planning is not well resourced to undertake management plan writing for all the forest reserve areas. This therefore limits the ability of companies to meet the requirements for forest certification.

Benefit flows to communities are also limited and do not encourage their involvement in the management of forests. There is the need to address the generational demand for benefits from areas of reservations that have been carried out for public good. The flow of benefits to all segments of society in Ghana will ensure the engagement of communities in the sustainable management of the forests.

CHAPTER THREE

3 A review of the tropical timber trade

3.1 Introduction

This chapter reviews the tropical timber trade and current issues that impact on the trade in tropical timber. It reviews the changing trade flows in the light of market demand for certified or legally sourced timber. The chapter also reviews Ghana timber export trade trends as well as developments in the timber trade and its impact on the development of forest and product certification.

3.2 Global Timber Trade Trends

3.2.1 Production in tropical timber

Production in tropical timber (logs) has risen from 125 million m³ in 2005 to 135 million m³ in 2009 (ITTO, 2009). The leading producers of logs were Indonesia (34.1 million m³), Brazil (23.6 million m³), India (20.3 million m³) and Malaysia (17.7 million m³) accounting for 71% of global tropical log production. Figure 3.1 shows the share of tropical log production for the three regions, namely Asia-Pacific, Latin America and Africa.

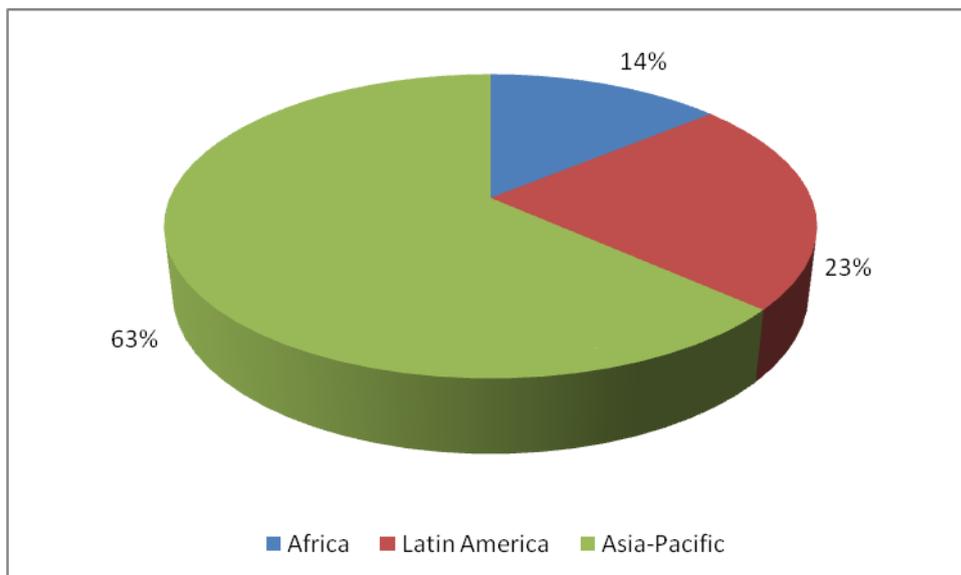


Figure 3.1 Share of tropical Log production - 2009 (ITTO, 2009)

However, international trade in tropical logs has experienced a decline in all the three tropical timber producing regions. Africa's change in log exports in the decade has been marginal,

reflecting the continued policy of log exports. However, the latter half of 2009 saw major log exporting countries such as Gabon and Cameroon introduce log export bans. The changes in the three regions are shown in Figure 3.2. It is worth noting that the environmentally sensitive markets, such as the Netherlands and United Kingdom, are hardly importing logs. China is a major importer of logs, particularly from the Asian and African regions, for processing into finished products in China for re-export into other markets such as USA and the United Kingdom. This poses a challenge for certification and verification of legal timber, particularly for the traceability of timber through the supply chain.

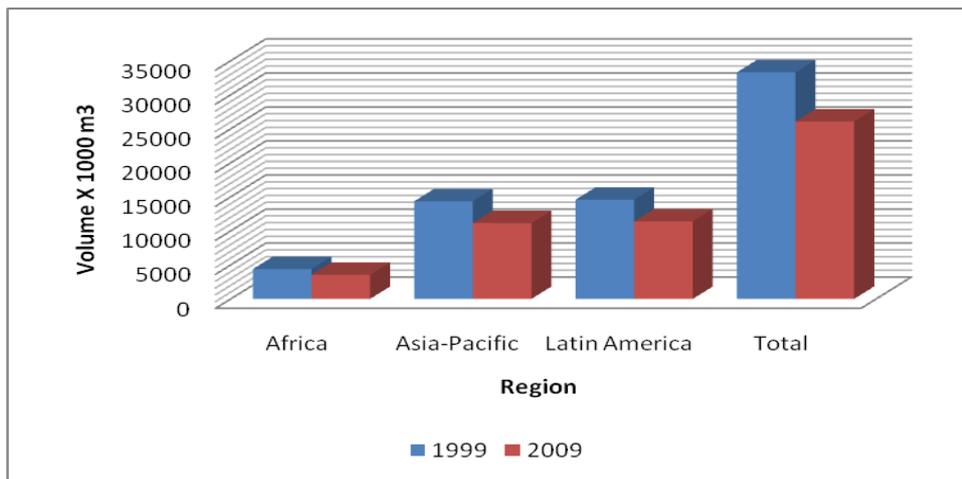


Figure 3.2 Log exports by region (ITTO, 2009)

Wood and wood products (including paper products) accounted for over US\$200 billion in 2000 (Peck, 2001), representing about 5% of global trade. Production of primary tropical timber products appears to have stabilized since 1999 (Figure 3.3).

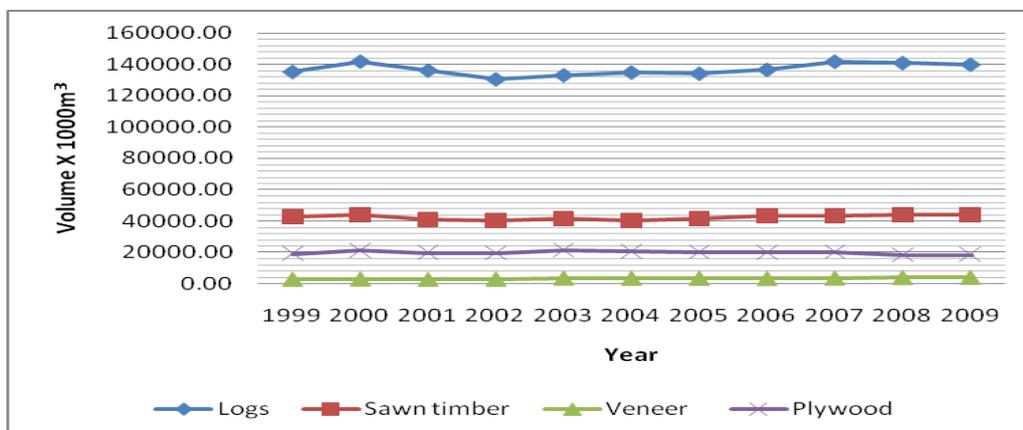


Figure 3.3 The global trends in the production of tropical timber primary products. (ITTO, 2009)

These primary tropical timber products on the other hand have experienced declines over the same period. The exports of primary tropical timber products (logs, sawn timber veneers and plywood) for the period 1999 – 2009 are shown in Figure 3.4. This trend is a reflection of the growing importance of the domestic market in tropical timber producing countries where domestic consumption is on the increase as a result of growing demand. This provides opportunities for tropical timber producing countries to diversify their production into the domestic and regional markets and hence avoiding the pressure for certification. Therefore any effort at the international level to promote forest certification and the production of legal timber must take into account the growing domestic market.

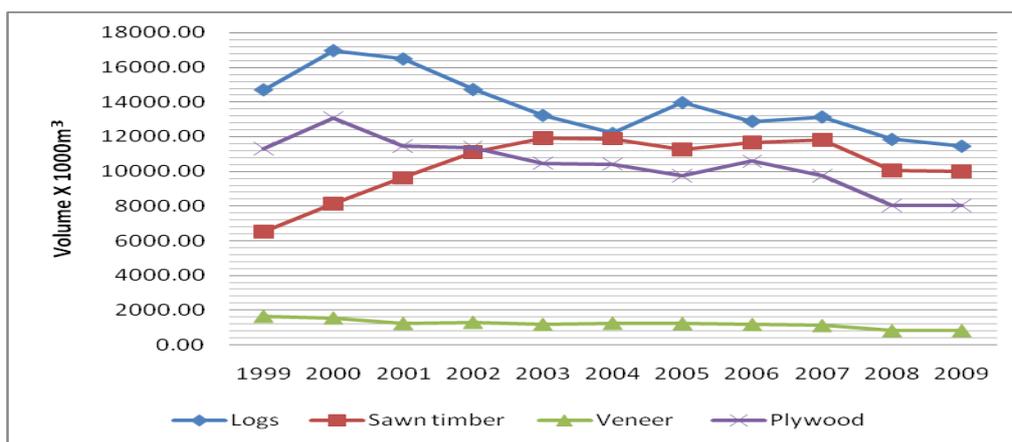


Figure 3.4 Topical timber trade trends (ITTO, 2009)

This trend is reflected in Adams' (2002) prediction of a gradual decline in timber harvested from natural tropical forests. He also attributes the decline in production and trade in tropical timber to the following main factors:

- The awareness created by the *Rio Conference on Sustainable Development* (1992) that has brought the issues of the environment and the role of forests in global warming to the fore. This is driving policy interventions in the key markets of Europe, particularly in the European Union.
- The call for boycotts of tropical timber by environmental non-governmental organisations (ENGO's) in the markets of Europe have resulted in tropical timber producer countries reducing their annual harvests to levels that will ensure sustainable forest management. For instance Ghana, which used to harvest 1.7 million m³ of logs annually, now harvests 1.0 million m³ annually due to the introduction of control measures aimed at sustainability (Appiah, 1990).

- Global concern for the trade in illegal timber and the role this has on good governance in producer countries has influenced procurement policies of governments in the developed countries. For instance, the WWF (formerly known as the World Wildlife Fund) has called on the UK government to present to the group of the eight most advanced industrialised countries in the world (G8)¹ a plan and timetable for the procurement of “green” timber for use in public buildings (Toyne et al, 2002). In July 2000, the UK government announced its procurement policy. This required that all government agencies and departments purchase timber from legal and sustainable sources. This concern for sustainability is reflected in the changing trade flows for tropical timber - a shift from the environmentally sensitive markets of Europe to the environmentally less sensitive markets such as China. China has become the world’s largest importer of tropical logs. Its imports peaked in 2007 at 7.9 million m³ but have since fallen to 5.6 million in 2009 (ITTO, 2009). The timber trade charts (Figures 3.5 to 3.9) reflect this change. China has become a major importer of primary timber products and an exporter of processed timber products. This changing nature of trade flows has implications for timber certification with the potential for laundering illegal logs in the absence of a tracking system for validating the production of legal or certified timber products.

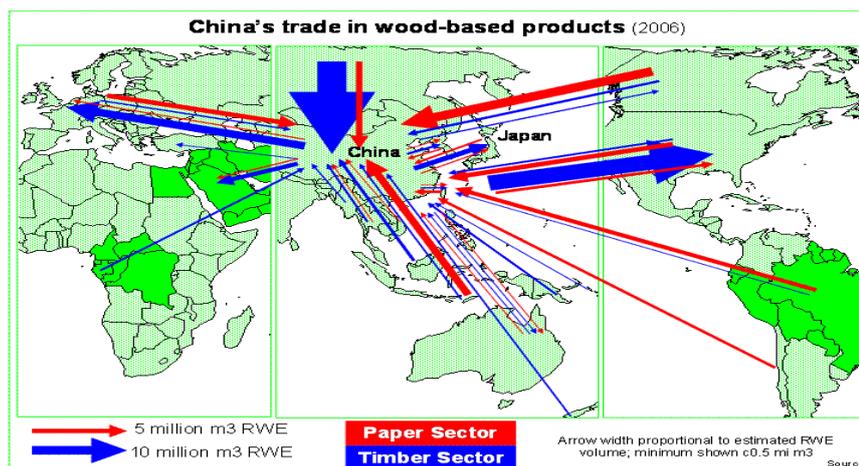


Figure 3.5 China’s Trade in wood- based products (www.globaltimber.org, 2006)

¹ G8 countries are USA, United Kingdom, Japan, France, Germany, Italy, Russia and Canada



Figure 3.6 Global Timber Trade flows (www.gloabaltimber.org, 2006)

The global trade flows since 2005 show a heavy trade within Asia for wood products and also from Asia, particularly China to Europe and the USA. China is also purchasing large volumes of timber from the region. Trade in wood products from Africa are mainly to Europe and China. China is increasingly importing logs from Africa. China's engagement in the Forest Law Enforcement Governance and Trade process will have implications in the future trade of timber products from legal and sustainable sources. There are also large imports from the Commonwealth of Independent States and Russia to China and Europe.

Trade flows for tropical timber primary products (logs, sawnwood and plywood) in 2009 are as shown in Figure 3.6 to Figure 3.8. China in 2009 was a major importer of tropical log products while Japan is a major importer of tropical plywood but mainly from the Asian region, particularly from Malaysia and Indonesia

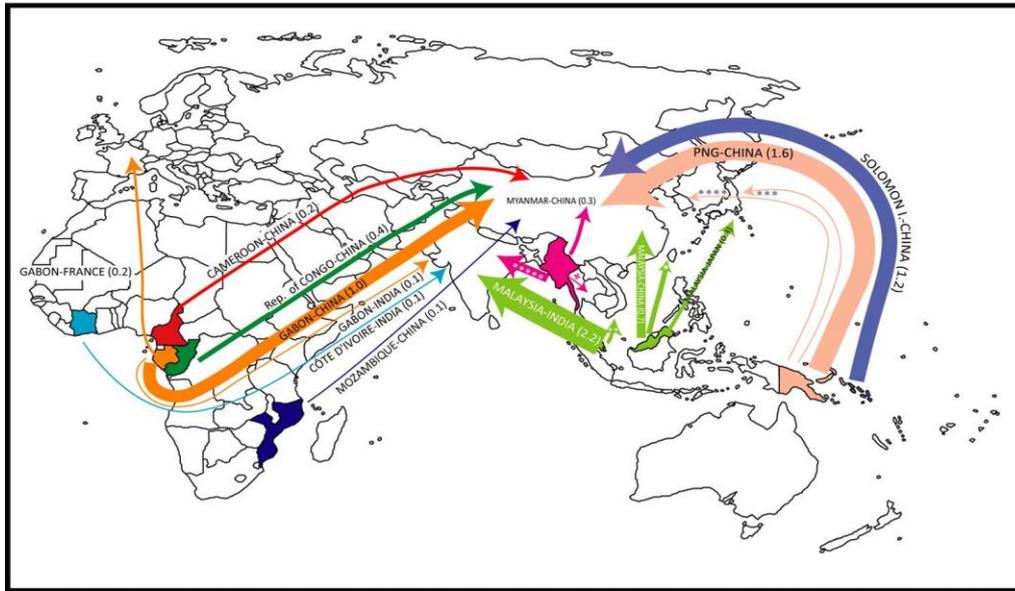


Figure 3.6 Tropical log trade flows in 2009 (ITTO, 2010)

Tropical log flows to China are mainly from, Cameroon, Congo, Gabon, Mozambique, Papua New Guinea and Solomon Islands. India is also a major importer of tropical logs. Exporting countries to India include Malaysia, Cote d’ Ivoire and Ghana. Ghana is however exporting billets of teak.

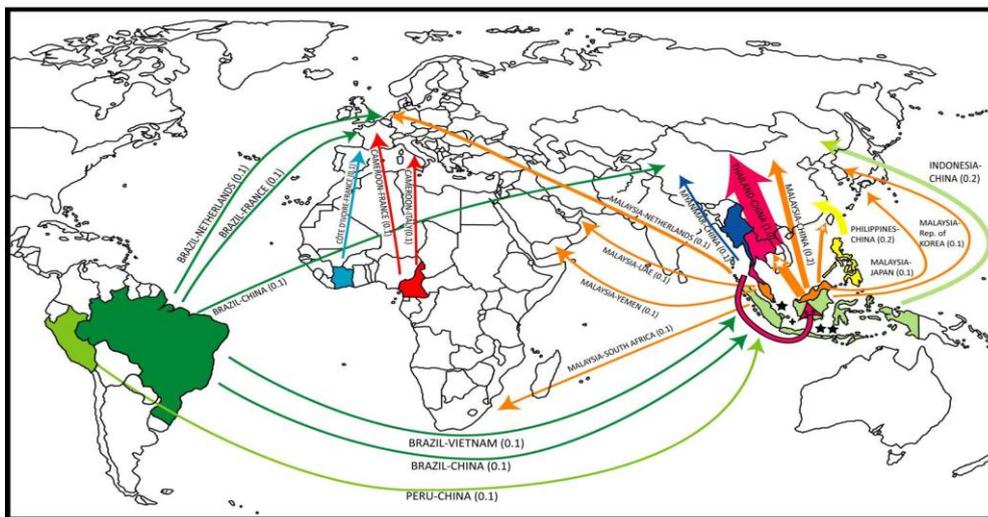


Figure 3.7 Tropical Sawn timber trade flows in 2009 (ITTO, 2010)

Key importers of tropical sawnwood include ‘China, France, Holland and Italy. Major exporting countries for sawnwood are Thailand, Malaysia, Indonesia, Philippines and Brazil.

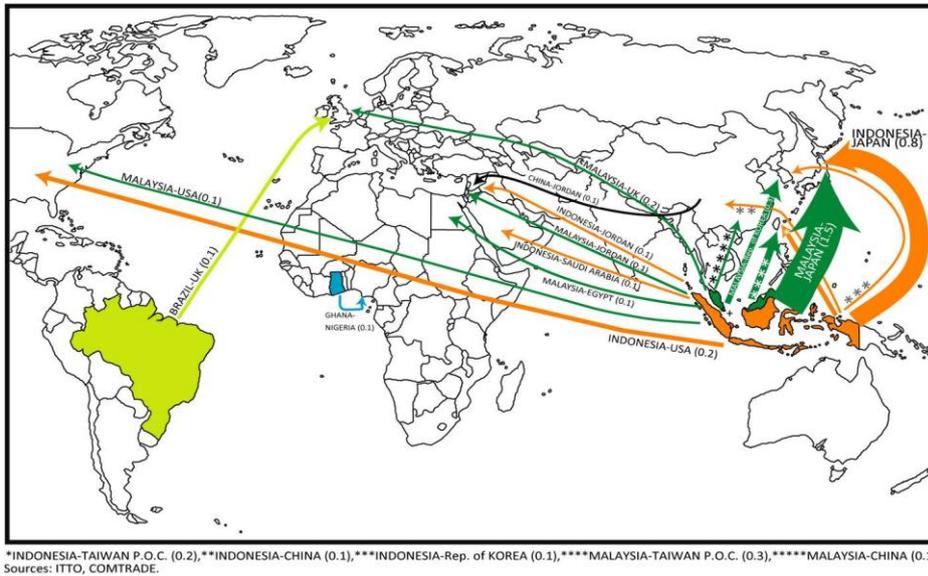


Figure 3.8 Tropical plywood trade flows in 2009 (ITTO, 2010)

Tropical plywood exports are mainly to Japan, USA and UK in 2009. Exporting countries are Malaysia, Indonesia, Ghana and Brazil. Ghana is exporting mainly to neighbouring West African countries, particularly to Nigeria which has become an emerging market for Ghana plywood. A market that is environmentally less sensitive.

3.3 Markets for West and Central Africa

This section focuses on West and Central Africa because the natural tropical forests in Africa are found in these regions. That is from coastal West Africa to the Congo Basin in Central Africa. Timber trade trends for West and Central Africa are shown in Figure 3.9 below:

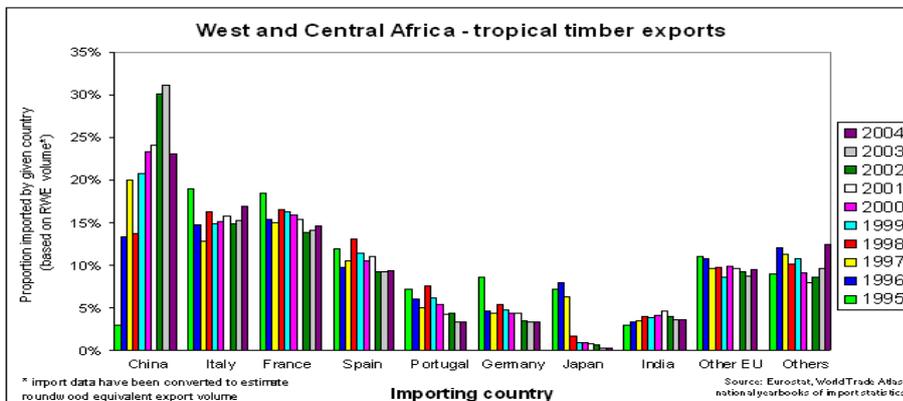


Figure 3.9 Markets for West and Central Africa (Globaltimber.org, 2006)

The main markets for West and Central Africa are:

- **China** has become an important player in the purchase of timber from West and Central Africa, standing at 30% of its total imports of timber. China's imports have risen from a market share of less than 5% in 1995 to 30% in 2004. Chinese imports have, however, been in primary products mainly logs for plywood production. The logs of African origin are used for the faces of plywood. The plywood produced is therefore a mixture of species and posing a challenge for forest and product certification, given the diversity in the source of material used in the production of Chinese plywood.
- **Italy** is an important market for tropical timber with its imports increasing from 630,000 m³ in 2003 to 712, 000 m³ in 2006, an increase of 13%. However, the market share for West and Central Africa in the Italian market has seen a decline from 18% in 1995 to 16% in 2004. Despite this decrease, Italy remains a strong market for West and Central African timber, particularly sawn timber. Three countries, Cote d'Ivoire, Cameroon and Gabon, accounted for 68% of the Italian imports of tropical sawn timber. Tropical timber in Italy is used mainly in the production of furniture, doors, flooring and windows. Trade with West and Central Africa has also been influenced by Italian investments into processing plants in Cote d'Ivoire, Ghana and Cameroon (Morasso, 2005). Although Italy is a less environmentally sensitive market, the growing of EU legislation on legal timber will pose a challenge for imports of tropical timber by Italy.
- **France** has historical ties with West and Central Africa which have influenced trade in tropical timber from the sub-region into France. France is a major importer of tropical logs with Gabon accounting to 60% of its tropical log imports (483,000m³) in 2005. This is mainly in Okoume (*Aucoumea klaineana*) logs for the production of plywood. Total imports of primary tropical timber into France are 1 million m³ accounting for about 20% of French timber imports. Market drivers in France have been price, environmental concerns and a change in consumer taste to lighter colours away from the traditional dark colour of Sapele (*Etandrophragma cylindricum*) and Mahogany (*Khaya ivorensis*). France's strong engagement in the leadership of addressing climate change will result in increased legislation in support of forest certification.
- **Spain's** imports of tropical timber from West Africa have seen a decline from 12% to 10% of tropical timber imports. In 2005 Cote d'Ivoire (34%), Cameroon (29%), and Brazil (27%) were the main suppliers of sawn timber into the Spanish market. Meanwhile, Cote d'Ivoire (45%) and Ghana (15%) were the main suppliers of veneers.

The market trend has also shifted to light coloured species thereby giving temperate species such as beech, oak and the softwood an advantage. The perception that temperate timbers are produced sustainably is further giving the softwoods an added advantage. This has resulted in a general shift away from tropical timber; the windows market is a particular instance where aluminium and PVC are favoured. Nonetheless, it is worth mentioning that, in recent times, wood is gaining back its lost shares from PVC due to environmental concerns on the use of PVC. Spanish markets are however price sensitive (Pedersen, 2005) and importers are sourcing wood products at competitive prices from South America. Brazil is the main supplier. The growing concern for the environment in the Spanish market coupled with EU regulation will in the near future provide opportunities for tropical timber that is sourced from legal and sustainable sources.

- **United Kingdom** – being one of the environmentally sensitive markets in the EU, imports of tropical timber have experienced a decline. The UK has also shifted from imports of primary products to imports of processed products, in particular finished products. The inability of African producing countries to provide processed products has limited their access to UK markets thus providing competitive advantages to temperate timber. West and Central African countries such as Cameroon and Ghana are key suppliers of African tropical hardwoods to the UK market. Cameroon supplies annually an average of €22 million of timber products to the UK market. This is mainly as sawn timber for the joinery market, as supplies of South American mahogany have reduced as a result of listing on CITES. Ghana is a supplier of a broad range of products to the UK market with value added products accounting for around 40% of Ghana's exports to the UK in 2006. The UK market therefore offers opportunities for value added products from legal and sustainable sources. Tropical timber producer countries can only gain access to this market if they embark on timber and product certification.
- **India** is fast becoming an emerging market for plantation timber, in particular teak. India is not an environmentally sensitive market and there is an increasing shift in supply to this region. India however remains an importer of logs. Tropical log imports accounted for 91% of the total log imports into India in 2006. Lower tariffs for imported raw material are responsible for this. India is expected to continue to be a major hub for imports of raw material for processing for domestic consumption. India's approach to forest certification will therefore be critical if timber laundering is to be avoided.

- **USA** imported 354,000 m³ of tropical sawn timber in 2005. Brazil accounted for 30% of USA imports of tropical sawn timber. Ghana and Cameroon from West and Central Africa, accounted for 14% of the sawn timber imports by the USA. Brazil again accounted for 30% of tropical veneer imports. Ghana and Gabon were the major suppliers from West and Central Africa accounting for 25% and 10% respectively of tropical veneer imports by the USA. With regard to plywood, USA is the second largest importer of tropical plywood. Asia, mainly Malaysia (33%) and Indonesia (29%), were the main suppliers. Other competing countries are Brazil (10%) and Ghana (0.4%).

It can be noted from Figure 3.6 to Figure 3.8 that there is a general shift in the exports of tropical timber away the environmentally sensitive markets of the EU, especially, Germany. Demand for hardwood timber in Germany is mainly in the construction and furniture sectors. Additionally, the decline can also be attributed to the poor reliability of African suppliers coupled with the low marketing strategies adopted by the African countries. African countries could use the availability of legal and sustainable timber to differentiate their products. Certification will therefore offer opportunities for tropical timber from West and Central Africa.

3.4 Global trends in Secondary Processed Wood Products (SPWP)

The trade in Secondary Processed Wood Products has risen from US\$68.5 billion in 2004 to US\$92.5 billion in 2008, (Figure 3.10). For the year 2008 tropical producing countries accounted for 12% of this trade (US\$ 11.1 billion). Tropical producers accounted for 16% of the SPWP trade in 2004. SPWP offers challenges for trade in timber from legal and sustainable sources due to material selection and flow of raw material through the supply chain. For tropical timber such extra processing could equate to added costs that affect pricing and reduce competitiveness of the resultant product.

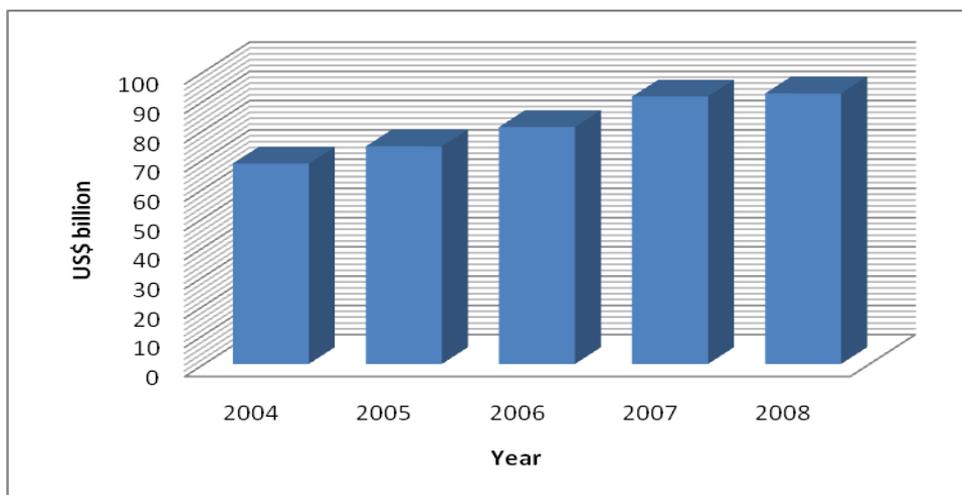


Figure 3.10 Global Trends in trade in SPWP (ITTO, 2009)

3.5 Ghana’s share of primary tropical timber trade

Ghana’s share of the tropical timber trade for primary products is shown in Figure 3.11. Ghana suspended the export of round logs in 1995 to encourage a shift to further domestic processing. However, the ban on log export was lifted for plantation timber in 2000 to encourage investments into plantations. This resulted in exports of large volumes of teak to India.

Ghana’s share of the world trade of primary tropical timber is 1.6% (ITTO, 2009). Indonesia and Malaysia together accounted for over 54% of the trade in primary tropical timber trade volumes in 2009. Ghana accounted for 2.1% of tropical sawn timber trade in 2009 (ITTO, 2009). Plywood exports from Ghana accounted for less than 2% of the tropical plywood trade. Plywood trade is dominated by Indonesia and Malaysia, who collectively accounted for over 90% of the trade in tropical plywood in 2009.

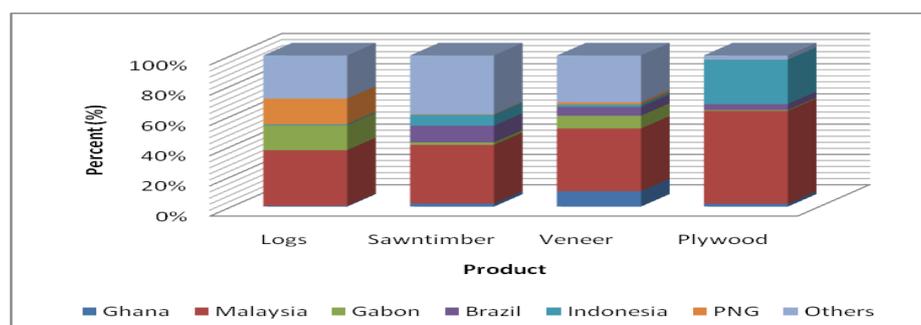


Figure 3.11 Ghana’s share of tropical timber trade in primary products (ITTO, 2009)

3.6 Ghana market for primary timber products

Ghana has earned an average of US\$ 192 million from the export of 426,000m³ timber products in 2009 (TIDD, 2009). The European Union is Ghana's major market accounting in 2009 for 43% of export earnings. This is down from 56% in 2004. The decline in the EU market may be attributed to the growing environmental requirements in the EU. From Figure 3.12, Germany which used to be a key market for Ghana wood products has experienced a steady decline in its imports from Ghana. The USA, however, is a growing market for Ghana's wood products. Rotary veneer, lumber and plywood are the main products exported from Ghana into the USA. However, with the passing of the Lacey Act in the USA imports of timber from Ghana could decline if Ghana is unable to provide verified legal timber.

Ghana suspended log exports in 1995 and progressed steadily towards further domestic processing. Plantation timber such as teak, cedrela (*Cedrela odorata*) gmelina (*Gmelina Arborea*) and rubber wood are becoming important in the timber export trade from Ghana. Teak exports to India have become a major export product, even though the volume has fallen from a peak value of 48,000m³ in 2006 to 21,478 m³ in 2009 (TIDD, 2009). Teak exports were mainly to India. Other markets of growing importance to Ghana are the West African markets. Senegal, for instance, is a major importer of Ghanaian lumber accounting averagely for 14,000m³ per annum for air dried lumber exports from Ghana. It is the second largest importer of air dried lumber from Ghana. In 2010 Nigeria became the largest importer of plywood from Ghana.

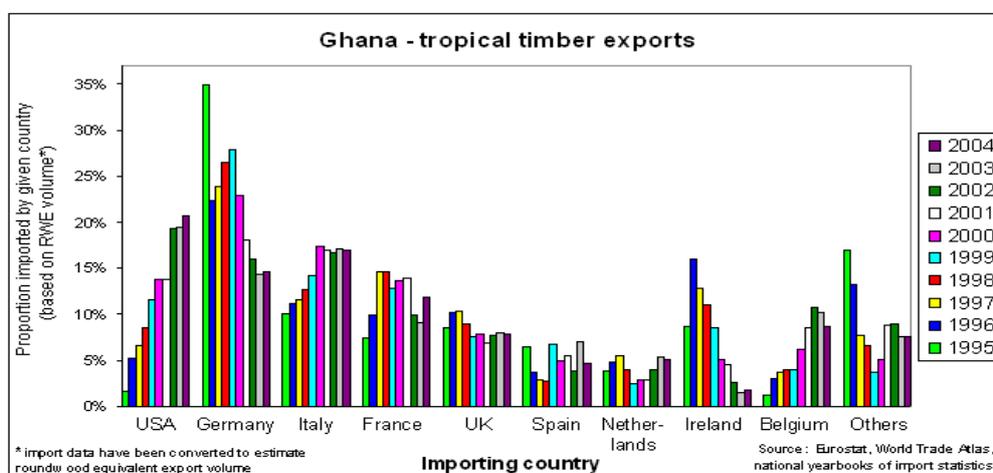


Figure 3.12 Key Markets for Ghana timber (Globaltimber.org, 2005)

Ghana's shift to sales to environmentally less sensitive markets would only pose challenges to forest certification for the mills in the segregation of timber entering processing units.

3.7 Constraints in the Ghana timber industry

Key constraints within the Ghana timber industry include:

(i) **Finance** - Most companies suffer cash flow problems (Appiah, 1990). Investments have been hard to attract. Lending rates from the banks in Ghana are currently at 25%. The poor record of loan repayments within the forestry sector has not favoured the sector and banks are reluctant to service the forestry sector (Gustav, 2007).

(ii) **Technology and Management** - Companies lack requisite skills at both the managerial and shop floor levels. The ITC (2002) cites mills in Africa as lacking behind other tropical timber producer regions in technology and the level of processing. This is a particular problem in Ghana that does not encourage linkages between supply areas and the market, thereby constraining the ability for Ghanaian timber firms to gain access to overseas markets.

(iii) **Marketing** - Marketing of timber in Ghana is synonymous with export sales. Market intelligence, advertising and pricing is undertaken by the Timber Industry Development Division (TIDD) on behalf of the industry. Firms in Ghana are small in size and therefore do not have the economies of scale to undertake market intelligence and advertising in key European journals. The Trade Associations also lack the capacity to coordinate the marketing needs of their members. These firms lack the basic structures for marketing their products. Hence, one would hardly find marketing departments in the timber firms in Ghana. Due to distortions in the Ghanaian economies, minimum selling and pricing parameters/elements are determined by TIDD with no relation to the cost of production or relationships that exist between suppliers and buyers. This aspect of the trade will be further put to the test if companies decide to use legal validation and certification as a means of differentiating their products.

The timber industry in Ghana is fragmented and lacks the necessary technology to effectively compete on the global market. It is an exporter of primary products and the growth in its further processing sector has been slow due to the constraints of finance, technology, management and marketing. Ghana's export volumes are small and this constrains its ability to be a global player. The Far East countries, particularly, Malaysia and Indonesia, dominate trade in wood products. Ghanaian firms are getting competition from other tropical timber producing countries in the Far East and also from temperate products. Substitute products such as aluminium, plastic and reconstituted wood products are gaining on wood. Although

wood is environmentally friendlier than some of these products, Ghana and other tropical timber producing countries have not been able to take advantage of this positive image for wood products in marketing their timber and timber products. This limits access to markets for tropical timber producing countries in markets that are environmentally sensitive.

3.8 Barriers to trade in tropical timber

A major obstacle to trade in the wood sector, particularly tropical timber, has been that of tariff/non-tariff barriers mainly in the form of legislation (tax regimes, environment, technical and health) and the activities of ENGOs. For instance, Greenpeace protestors occupied the UK Home Office construction site in London, claiming plywood used for shuttering was illegal timber sourced from Indonesia (TTJ, 2003). In May 2007, Greenpeace rolled out a banner to raise awareness and the need for action by ITTO to stop illegal logging in Papua New Guinea (PNG) at the opening session of the 42nd session of the International Tropical Timber Council meeting held in Port Moresby.

Environmental regulations and activities of ENGO's towards tropical timber in developed countries have a wider impact on their competitiveness. Flora and McGinnis (1991), cited by Barbier (1998), indicate that environmental regulations implemented on their own or in conjunction with export restrictions can have substantial impact on the timber trade. Such regulations and activities go a long way to restricting access to markets in the environmentally conscious countries.

Rangarajan (1978) lists the barriers encountered by commodities as cascading tariffs, prohibition of imports, quantitative restrictions on imports, duties or indirect taxes and unusual administrative or health regulations, which reduce imports. The erection of these barriers is aimed at protecting investments and employment in domestic processing industries in importing countries. In effect these are measures aimed at denying market access to exporting countries. These barriers are classified as follows:

- **Technical barriers to trade** – This is usually in the form of standards or technical requirements in the developed countries. For instance, the EU directive (Construction Products Directive) CE marking requires panel products to conform to requirements of the harmonised European standard (TTJ, 2003). CE marking is a mandatory conformity mark on products that are traded in the European Economic Area. This is considered by

tropical timber producers as an added cost aimed at making their plywood uncompetitive (Tomaselli, 2003).

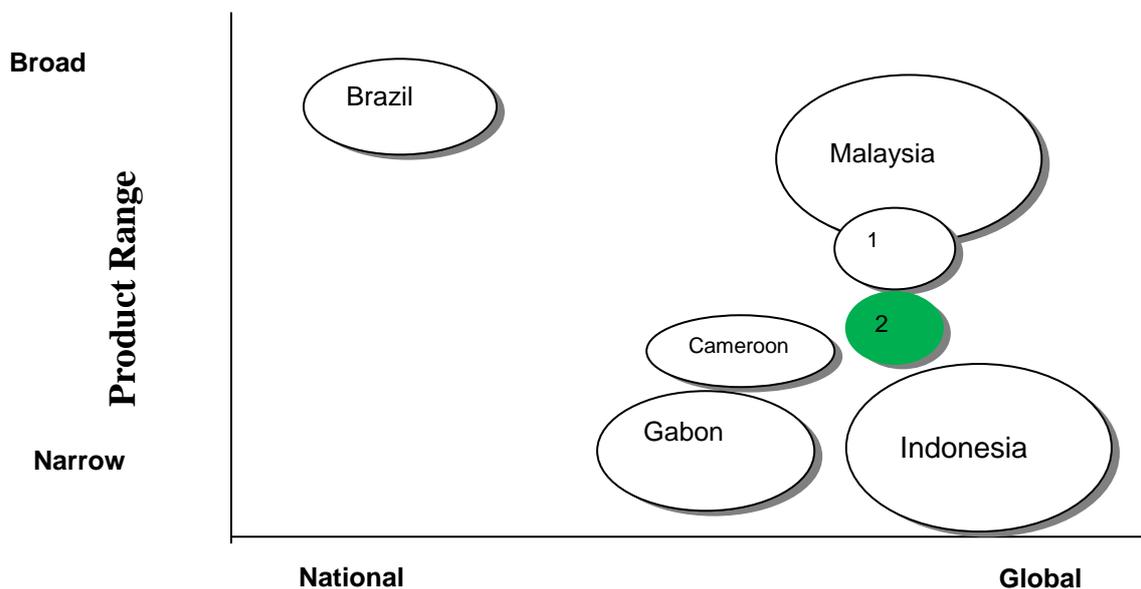
- **Imports restrictions on unsustainably produced timber** – Environmental NGO's have called for consumer-led boycotts in the developed markets and until recently have focused on tropical timber (Barbier, 1996; Rytönen, 2003). Such calls for boycotts are not productive and can only lead to further destruction of the resource due to loss of value from the forest and the need to convert the forests to alternative uses. This view is supported by Barbier (1994, 1996) arguing that boycotts lead to tropical forest being lost to other uses such as agriculture.
- **Certification and eco labelling** – Barbier (1996) argues that the certification and labelling of forest products have the potential of acting as trade barriers and could form a powerful non-tariff barrier that discriminates against the imports of forest products particularly when it is done unilaterally. However, Barbier fails to recognise that certification or eco-labelling could also be used on products to differentiate them, thus creating a brand and therefore gaining access to markets. This is the school of thought that is serving as a driver for forest certification with the growing business-to-business trade in certified wood products.

Although opportunities exist for using environmental credentials as a unique selling proposition, tropical producer countries in particular, view the growing demand for certified timber as a non-tariff trade barrier. This argument is supported by various authors. For example, Barbier (1996) and Bourke (1998) have found that although the GATT²/ Uruguay Round (1986-1994) has resulted in significant reduction of tariffs, forest products, particularly tropical timbers are coming under increasing non-tariff barriers such as restrictions on “unsustainably produced timber” and forest and product certification. For instance, the UK government's directive in 2000 which required government projects to source timber only from legal and sustainable managed forests (Toyne *et al.*, 2002). These policies are having adverse effects on tropical timber producers, particularly on the SMFEs that have difficulties in meeting the requirements.

² GATT – General Agreement on Tariff and Trade

3.9 Market positioning for key competitors in the tropical timber trade

Figure 3.13 shows the current positioning of key competitors in the global tropical timber market based on the product range and geographic scope of exports. The sizes of circles represent the relative trade volumes of primary products (ITTO, 2009). Malaysia and Indonesia are major players although Indonesia, by focusing on plywood production, has created a niche market for itself. However, Indonesia is considered a high risk country in trade in timber due to the perception of illegal logging in the country. Malaysia, on the other hand has a global reach and strong diversification of its product base. Brazil, which consumes over 80% of its production locally, is expected to experience a strong growth in its export markets, particularly if it is able to increase the level of forest certification. West and Central African countries have a low product diversification due mainly to the over concentration on raw material exports. West and Central African countries should therefore use forest certification as a means of differentiating its products.



Adapted from Grant, 1998

Key: 1 = Cote d'Ivoire 2 = Ghana

Figure 3.13 Positioning of key tropical timber countries.

Brazil has a strong production of FSC certified timber from plantations, while Malaysia and Indonesia have introduced their own certification schemes, namely the Malaysian Timber Certification Scheme and the Indonesian Eco-Labeling Scheme. Cameroon and Gabon have also been able to have some of its forests certified under the FSC scheme. This poses a challenge for Ghanaian shippers, who have not been able to gain any certification up to July, 2010.

3.10 Main issues impacting on market competitiveness

To establish the main issues that impact on market competitiveness for West and Central African forest products and services, it is important to undertake an environmental assessment by examining the Political, Economic, Social, Technological and Environmental factors.

3.10.1 Political

Political instability in the West and Central African region undermines the value and pricing of tropical timber from the area. Consequently, this results in the loss of those controls and governance structures that support SFM. Warlords tend to enter into various deals that undermine the pricing of tropical African timbers. The failure of governance structures in the forestry sector within countries experiencing conflict leads to a loss of confidence in supplies from those regions. Importers become weary of making purchases from such countries and regions to avoid trade

in illegally sourced material that could create a public relations disaster for their companies if they are known to have sourced timber from unsustainable sources. Political instability in the region has not supported the development and protection of the forest resource in the region and has failed to attract the needed investments in support of sustainable forest management (SFM). The conflicts have also resulted in negative perceptions about African timber, thus lowering demand and resulting in a shift in customer preference to other substitute species and products. The political instability in the region creates the perception of trade in illegal timber and provides an incentive for timber certification.

3.10.2 Economic

Africa is a vast continent with 53 countries. However, four countries, namely South Africa, Algeria, Nigeria and Egypt (SANE), account for slightly more than half of Africa's total GDP in both nominal and purchasing power parity terms. The forest endowed countries have low GDP's resulting in low demand on their domestic markets. However, a strong domestic market is required to create competitive advantage. A typical example is Brazil where domestic consumption of timber is high accounting, for about 80% of its production. This allows for the domestic market to stabilize prices when export markets collapse. The nature of the home market also determines how firms in the country will react to buyer needs. A sophisticated domestic market will lead to demanding buyers and hence an opportunity for advanced customer needs pushing companies to work towards higher standards.

To gain competitive advantage, West and Central African countries will have to develop their domestic markets for timber products. Development of the domestic market implies the need for procurement policies in the countries to encourage trade in legal timber on the domestic market. Certification targeted at the export market alone will not be supportive of SFM.

3.10.3 Social

Forests and the potential role they can play in addressing poverty, community rights and sustainable development, provides opportunities for West and Central African timber. Social issues have been flagged high in various initiatives at ensuring SFM. For instance, forest certification schemes promoted by the Environmental Non-

Governmental Organizations (ENGOs) demand social benefits and these can be leveraged to provide a competitive advantage for timber from the sub region.

3.10.4 Technological

Technological advancements have resulted in the development of engineered and modified wood products that are competing with tropical timber in various market segments. Additionally, technological advancement in the use of softwoods is eliminating the advantage of tropical timbers in some end use markets. Improved technologies in the jointing of wood have resulted in larger possibilities in the use of wood in the construction industry. This was a market segment that provided in the past a competitive advantage for tropical timbers, due to their strength properties and natural durability.

3.10.5 Environmental

The introduction of purchasing policies by the EU and the concern for illegal logging is influencing the trade in timber. There are various estimates in respect of premiums that are payable for timber from legal sources. However, it is evident that efforts towards SFM are at a cost and for tropical timber this will reduce their profitability and hence their competitiveness. This could, however, be turned into an advantage in gaining access to markets if firms in West and Central Africa can show evidence that timber and forest products are from sustainable sources. The opportunities offered can be strengthened by countries in the West and Central African region engaging in forest certification.

Additionally, investments and financing of investments in forest and forest products and services by financial institutions make environmental considerations and SFM key criteria for lending.

Consumers have become environmentally conscious and in the wake of the floods and heat waves and extreme weather conditions in Europe in the summer of 2007, the perceptions of the public could influence their choice of environmentally friendly material. Tropical timber production, which is perceived to be a major cause of global warming, could once again suffer from a loss of market share unless tropical timber producer countries engage in forest certification and the production of legal timber.

3.11 Conclusions

It is evident that market demand for certified timber is resulting in the changing trade flows from areas with high environmental awareness to areas of less environmental awareness. Forest certification will therefore create opportunities for countries with good forest practices. China has become a major player in trade in tropical timber, particularly, for logs. Africa and Asia are the main producers. For Ghana the West Africa market is a growing market. However, this market is not environmentally sensitive and does not provide pressure on Ghana to produce and trade in legal or SFM certified timber. EU procurement policies will however influence exports of timber from Ghana to the European Union. Procurement policies in the key markets for Ghana will place undue requirements on the Ghana forest industry. The EU has introduced the Voluntary Partnership Agreements (VPAs) and this forms an opportunity for the production and sale of legal timber. However, SFM can only be achieved if the domestic market timber supply is also brought under a legal regime of forest certification. A strong domestic market provides opportunities for trade in legal and SFM certified timber. A weak demand for certified products on the domestic market in Ghana constrains the development and growth of forest certification in Ghana. The demand for legal and SFM certified timber provides an opportunity for Ghana to differentiate its products and gain access to the environmentally sensitive markets. Though Ghana has a narrow product base its global reach provides opportunities for positioning itself to meet the market requirements.

CHAPTER FOUR

4 Forest and product certification

4.1 Introduction

This chapter reviews literature on forest certification and traces the global trends in the development of forest certification. It examines the different certification initiatives and the various models that are being used in the timber industry. It also reviews certification processes in other sectors such as agriculture, tourism, mining and cocoa industries to inform the development of the elements for the survey and the model. The section reviews the EU Forest Law Enforcement Governance and Trade (FLEGT) initiative and its relation to forest certification.

It is estimated that about 1.2 billion people living in extreme poverty depend on the forests for their livelihoods (Greenpeace *et al.*, 2006). This claim is supported by Atyi (2004) who identifies poverty as one of the most important underlying causes of forest degradation in developing countries. The decline of forest cover and forest degradation in the tropical rain forest resulting from unsustainable and illegal activities, is now acknowledged as a “global problem” with social, economic and environmental implications (Fischer *et al.*, 2005; Sharifi and Hussin, 2005). Clearing land for agriculture including cattle ranching, unsustainable harvesting (such as commercial logging, demand for fuelwood), forest fires, climate change, disease and industrial pollution are some of the major causes of deforestation (Varangis, *et al.*, 1993). However, deforestation arising from the clearing of forests for other land uses is perceived as being mainly a problem of the tropics.

Loss of forests in the tropics is reported to be 15.2 million ha/yr in the 1990s; 90% of which was conversion to other land uses such as oil palm and soya production. This is illustrated by the changes in land use that have occurred in Malaysia, a tropical timber producing country. Malaysia’s oil palm plantations have increased in area from 240,000 ha in 1967 to 3.3 million ha in 1999 (Greenpeace *et al.*, 2006a). Although these conversions are as a result of economic choice on land use, persons in the developed world, particularly the ENGOs, see it as forest destruction and seek to inform and raise awareness among the public on the effects of forest conversions.

These concerns for conversions of forests are reflected in the discussions and outcomes of the United Nations Conference on Sustainable Development

(UNCSD), held in Rio de Janeiro in 1992. The outcome of this meeting is an agreement on a non-binding authoritative statement on all types of forests. The desire to address these concerns has encouraged governments to develop sound criteria and guidelines for the sustainable management of all types of forests (Raison *et al.*, 2000).

This move by governments is fuelled by pressure from the ENGOs. It is worth noting that since the 1980s, the ENGOs and media have raised public awareness about the rapid deforestation in the tropics, particularly the loss of the tropical rainforests. These organisations have called for boycotts of tropical timber (Carbarle, 1995; Baharuddin and Simula, 1996). It has been argued by several authors that boycotts *per se* will not lead to SFM (Freris and Laschefski 2001; Teketay 2005). The relevance of this is that it leads to changes in timber trade flows as reflected in chapter 3, including notable trade diversions to less environmentally sensitive areas. This could lead to replacement of forests with other land uses in the tropics. This assertion is supported by FERN (2001) when they argue that the request from indigenous people's organisations in the South (developing countries) for recognition of the land rights of forest people resulted in campaigns to restrict the import of tropical timber so that timber from disputed areas will not enter the consumer markets. With the focus on tropical timber, the message provided the perception that the use of tropical timber is bad. This has created a negative image for tropical timber, resulting in calls for boycotts by non-governmental organisations in the developed world. Regardless of this assertion, it is the opinion of the timber industry and trade that timber still has better environmental credentials than plastics or aluminium. However, there remains a strong need for timber from doubtful or unknown sources to be avoided if the image of timber as an environmentally friendly material is to be revived.

A mechanism is therefore required to allow consumers to make an informed choice in the purchasing of wood; hence forest certification. Humphreys (2006) attributes the call for forest certification to the disillusionment of ENGOs in the activities being undertaken by the ITTO to address SFM in the tropics. He quotes WWF as saying that "*if the ITTO fails to actively promote tropical forest conservation then conservation organisations will have to seek other mechanisms to achieve this*". Sann and Thornber (2003) also attribute the emergence of forest certification to the

failure of governments and multilateral initiatives to curb forest deforestation and degradation. It can therefore be argued the emergence of forest certification is as a result of the failure of governments to react to the growing concern about deforestation and forest degradation.

Forest and product certification has therefore emerged as a response and an alternative to the calls for timber boycotts. Forest certification is perceived as a tool for sustainable management of forests. Timber certification which was originally targeted at tropical timber has however seen very little growth in the area of forests certified in the tropics. The growth in timber certification has been prominent in the developed countries (INDUFOR, 2002).

4.1.1 Previous studies

Previous studies on forest certification have focused on the impact of certification on trade (Carbarle,1995; Upton and Bass 1995; Baharuddin and Simula, 1996; Scharzbauer & Rametsteiner 2000; Sann & Thornber, 2003). Others (such as: Castaneda, 2000, Nussbaum and Simula, 2004, Humphreys, 2006) have examined differences in forest certification schemes, in particular the criteria and indicators. Easten *et al* (1993) examined the perceptions of Managing Directors on the effect of boycotts on the timber industry in Ghana and concluded that it was difficult to establish the effect of trade boycotts on the timber industry. The study however showed that the respondents concluded that the boycott was responsible for the reduced demand for tropical timber in Europe and that producers are not engaged in discussion relating to forest policy.

Cult (2001) examined the impact of certification on US hardwood manufacturers. This study was focused on the US and a particular segment. Becker (2005) examined the barriers to forest certification in the tropics. The author recognises the current trends in managing forests since the Rio Conference and in particular, the multiple uses of forests, the benefits to communities and the role of forests in maintaining biological diversity, provision of water and food, its ability to absorb carbon dioxide and counteract the effects of the environment and as a source of income for many developing economies. The paper however fails to make a linkage to the potential of forests to address issues of poverty and other cross sectoral activities that are critical to sustainable forest management. Becker (2005) tends to assume that FSC certification is the means for ensuring SFM. He has made a preference for FSC certification without evaluating the effectiveness and potential

of the other schemes, in particular regional/national schemes such as the African Timber Organisation Green Label or the Malaysian Timber Certification Scheme (MTCC). Although the author attempts to explain the choice of FSC scheme in terms of its presence in the three tropical regions, this could be viewed as being discriminatory in favour of FSC.

Despite the broad range of areas covered by studies in forest certification none have as yet examined the perceptions of SMEs on forest certification in Ghana. There has neither been any research to challenges for SMEs in Ghana to pursue forest certification.

4.2 Forest Certification concepts

In the past, the focus of forest management has been on sustained yield harvesting. This involved getting a better understanding of the forest dynamics and managing the forests such that the removals did not exceed the volumes that the forest could add through growth over any particular period. The focus was on production of timber and sustainable yield was equated to sustainable forest management. More recently, the concept of sustainable forest management has been broadened to include other dimensions of forest management namely, the economic, environmental, social and cultural dimensions. This approach to managing forests is in line with on-going debate at the international, regional and national levels. It is in harmony with the Forest Principles agreed at the United Nations Conference for Environment and Development (UNCED) in Rio de Janeiro, Brazil, 1992 (Castaneda, 2000).

The desire to address issues raised in Agenda 21 of the Forest Principles has led to various initiatives targeted at ensuring sustainable management of the forests. There have been initiatives by ENGOs, governments and industry. These have resulted in forest certification initiatives aligned to these three groups resulting in proliferation of certification schemes with varied objectives (Nussbaum and Simula, 2004). For instance, governments have tended to support national schemes, industry have tended to support industry led schemes such Sustainable Forest Initiative (SFI) or the Programme for Endorsement of Forest Certification Schemes (PEFC, formerly Pan European Forest Certification Scheme) and the ENGOs have largely supported the Forest Stewardship Council (FSC). More recently there is some level of

cooperation between some segments of the timber industry, mainly large scale retailers, in supporting the ENGOs schemes through its Global Forest Trade Network (GFTN) as well as producers and buyers' groups. This has the potential to create confusion in the market and places a burden on producer countries, particularly for SMFEs, in determining which scheme to adopt. It also has the potential of raising the stakes in terms of the credibility of certification schemes and access to markets.

As a concept that has been around for just over 10 years, certification has generated significant discussion and controversy (Nussbaum and Simula, 2004) in particular in forest policy discussions and for which the real benefit it provides forest owners and managers have also been questioned (Elliot and Schlaepfer, 2001).

4.2.1 Definition

There are a number of definitions for forest certification, some of which are stated below:

Certification is a process which is a written quality statement (a certificate) attesting to the origin of raw wood material and its status and/or qualifications following validation by an independent third party (Baharuddin and Simula, 1996; Teisl, 2003; Vlosky and Duery, 2005).

Certification is a voluntary instrument to improve access to markets of sustainably produced timber at a better price. Certification was aimed at increasing sustainability of tropical forests. Certification is seen as an incentive for sustainable forest management (Agyeman *et al.*, 2006).

Certification is essentially a process of conformity assessment, conducted by a third party, which takes place against a standard. In the case of forest management, such a standard can refer to performance requirements and /or the organisation's management system. Certificates are aimed at communication and can be linked with labels or trademarks used on products or otherwise (Augusto *et al.*, 2004).

Certification is an instrument designed to allow those engaged in certification to measure their forest management practices against standards and to demonstrate compliance with the standards. Timber certification as a process can also be used to verify claims made by producers or retailers in respect to the origin of the product (Baharuddin, 1995).

Certification of timber products involves an independent third-party organisation examining the practices of a company in order to certify that they are environmentally benign (Kiekens, 2000; Boutin, 2000; Heissenbuttel, 2000).

Certification is one of a number of market-based instruments that may contribute to improved management of forests and improved forestry sector development. The goal is to link trade in forest products to the sustainable management of the forest resource, by providing buyers with information on the management standards of the forests from which the timber came (FAO, 2001).

Certification is an economic market based instrument which aims to raise awareness and provide incentives for both producers and consumers towards a more responsible use of forests (Upton and Bass, 1995). The same authors go on to indicate the conditions and benefits of certification.

They list amongst others the following:

- A strong willingness to pay a premium by consumers that will absorb the extra cost associated with certification.
- Market access for wood products that originate from sustainably managed forests.
- Protection of market share and increased opportunities through product differentiation of wood products.
- Reduction in environmental risks, enabling companies to be perceived as being socially responsible and gaining access to financial markets for loans, insurance, etc.
- Improved image in “green” markets.

Certification involves both forest and supply chain certification.

It is evident from the literature reviewed and the definitions stated above that timber certification is in two parts, namely, certification of sustainability of forest management; and product certification. Certification of forest management relates to establishing the health of the forest and that the management of the forest is in conformity with the laid down standards and procedures. This is usually achieved

using Criteria and Indicators (C&Is) at either the national or Forest Management Unit (FMU) levels. The Criteria and Indicators take into account the environmental, economic and social impacts of forest activities and provide an operational tool for defining and assessing SFM at the national and FMU levels (INDUFOR, 2002). The C&I have also formed the basis of standards for the various forest certification schemes.

- There are 9 regional C&I processes developed in 150 countries and covering 85% of the world's forest area (Humphreys, 2006). There are however no global criteria and indicators (C&Is) and this can be attributed to the differences in forests worldwide. Nevertheless, Humphreys (2006) specifies the following as common to all the processes:
- Extent of forest resources
- Forest health and vitality
- Productive functions of forests
- Biological diversity
- Protective function of forests
- Socio-economic benefits and needs
- Legal, policies and institutional framework.

Despite these commonalities in C&Is and the standards used by the various certification schemes there has been no convergence on the use of a standard approach to forest certification. This has not encouraged the mutual recognition of schemes, resulting in certification “wars” amongst the various schemes. C&Is are however perceived as tools for meeting the health of forests over time and cannot be used to make claims of forest health.

Product certification on the other hand traces wood products through the supply chain and is sometimes referred to as the Chain of Custody Certification (CoC). This chain of custody certification aims to create a link between the producer and markets that are environmentally friendly (Baharuddin, 1995; Upton and Bass, 1995).

FERN, (2001) identifies forest certification as *“a tool to help consumers choose ethical and environmental products from well managed forests. The idea behind certification is that consumers, who are concerned about deforestation and forest degradation, will prefer to buy timber from well managed sources.”* FERN further

acknowledges the presence of chain of custody certification and the need for a label to communicate the environmental credentials of the product at the point of sale. To sum up, a certification scheme must contain three key elements, namely:

- Development of standards
- Certification against set standards
- Process of accreditation of certifiers.

Furthermore, FERN, 2001 define certification as *“the process whereby an independent third party assesses the quality of forest management in relation to a set of predetermined standards. The certifier gives a written assurance that a product or process conforms to the requirements specified in the standard.”*

For the purpose of this research, certification will refer to both forest and product certification and will be defined as follows:

A voluntary market based mechanism that seeks to communicate the environmental credentials of timber and timber products through a third party assessment against a set of forest management standards. Where the forest product changes hands/ownership, systems are put in place to ensure traceability of the material along the supply chain and through production to the origins of the timber.

Thus, a company pursuing certification will be one that has undergone an independent third party assessment of its forest management and supply chain and has been allowed to place a label on the product to indicate its level of environmental and social rating. Forest and product certification however does not reflect the quality of the product. Certification is used to demonstrate to stakeholders that a company meets the high standard of forest management (Gullison, 2003).

4.3 Development of Forest Certification

Since the United Nations Conference and Development in Rio de Janeiro there have been a number of initiatives to address forest degradation, in particular in the tropics. These initiatives have targeted forest issues as well as the cross cutting issues such as poverty reduction. International efforts that have been launched including the Forest Principles of the United Nations Conference on Environment

and Development (UNCED); Tropical Forests Action Programme (TFAP), the International Tropical Timber Organization (ITTO), Inter governmental Panels on Forests/Intergovernmental Forum on Forests (IPF/IFF) processes; the Helsinki and Montreal processes; the World Wide Fund for Nature (WWF) Target 1995 Group, and the Forest Stewardship Council (FSC) and the Programme for Endorsement of Forest Certification (PEFC). These initiatives have all targeted SFM and view forest certification as a means to achieve sustainability of the forests. However, FERN (2001) and Bass *et al* (2001), hold the view that certification provides for access to environmentally sensitive markets.

A wide range of initiatives are presently being undertaken regarding the certification of forest and forest products. Certification schemes are being developed at the international, regional and national levels. These can be found in both developed and developing countries. However the extent of development of forest certification in the developing countries is rather low compared to the developed countries (Eba'a Atyi & Simula, 2002).

The rationale behind forest certification is that, given a choice, consumers would prefer to buy products that are less harmful to the environment, hence the need for a mechanism to allow consumers to make that distinction (FERN, 2001). This is based on the premise that protecting the physical environment is considered an essential part of economic development policies that are geared towards fighting poverty and promoting economic development (Varangis *et al.*, 1993). Environmentalists therefore seek to create a balance between economic development and sound environmental practices. Forest certification is then viewed as a means to promote better forest management (FERN, 2001) and has gained the support of ENGOs and the private sector to help create a less harmful environment.

Despite the widespread concern, it is however worth noting that only a small number of schemes are currently operational. FERN (2001) and Nausbaum and Simula (2006) list the Forest Stewardship Council (FSC), the Canadian Standards Association's Sustainable Forest Management Standards (CSA), Certforchile (CERTFOR), the Sustainable Forestry Initiative (SFI) of the American Forest and Paper Association and the Programme for Endorsement of Forest Certification – formerly Pan European Forest Certification Scheme (PEFC), Malaysian Timber Certification Council (MTCC) and the Indonesian Lembaga Ekolabel Institute(LEI) as the existing schemes and initiatives in the tropics.

Growth in the area of certified timber has slowed down as a result of the global financial crisis of 2008 (Figure 4.1). The initial rapid growth in forest certification of 125 million ha per year mainly in the temperate and boreal forests in the period 2004-2005 has slowed down. Currently the average area of growth has fallen to 23 million ha per year since 2006. However, the recent resurgence of forests under the United Nations Framework Convention on Climate Change (UNFCCC) on Reduced Emissions from Deforestation and Forest Degradation (REDD) offers an opportunity for independent certification mechanisms that ensure environmental and social values are safeguarded through forest management (UNECE,2010).

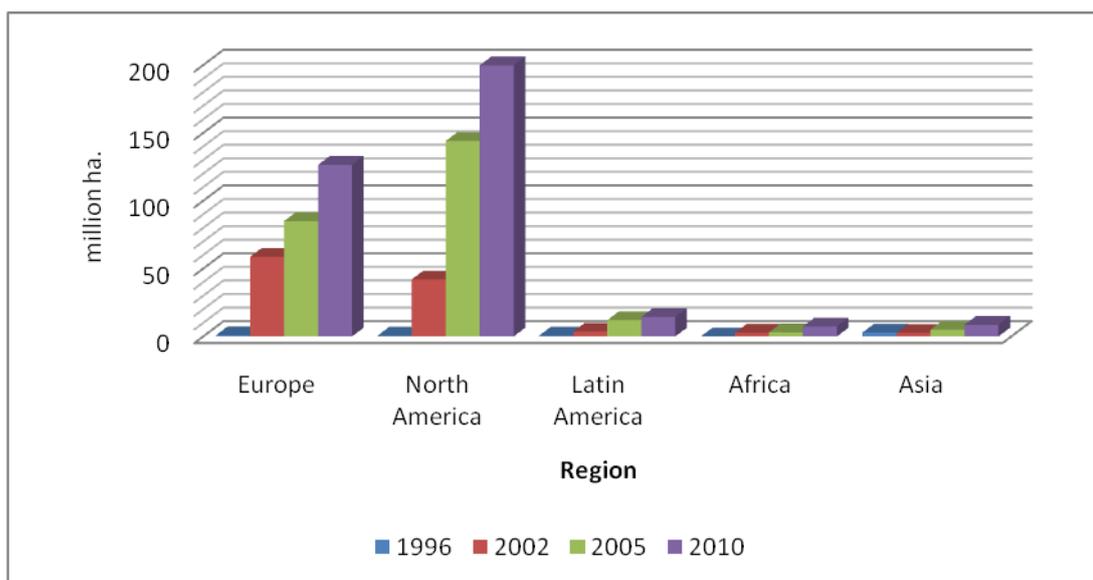


Figure 4.1 Growth of certified forest (1996-2010) (Baharuddin & Simula, 1996; Eba'a Atyi & Simula, 2002; Cashore et al., 2006 ; UNECE, 2010)

The global growth of area under forest certification has increased significantly from a level of 5.02 million ha in 1996 to a level of 357 million ha as at 2010. However, most of this growth is in the developed world, mainly in North America and Europe. The developed countries accounted for over 91% of the certified forests worldwide in 2010, up from 84% in 2006. This shows a significant shift in the balance from a situation where developing countries accounted for 70% of the certified area in 1996 (Baharuddin and Simula, 1996). This change can be attributed to the initial drive for SFM from the tropics and the call for boycotts on tropical timber in the mid 1980's. However, from the World Summit in 1992 (UNCSD), the issues of forest and forest degradation shifted in focus from just tropical forests to all types of forests including temperate and boreal forests (Upton and Bass, 1995).

The tremendous growth in the area certified by Europe and North America reflects the ability of the developed world to overcome the challenges to forest certification in comparison to the developing or tropical timber producer countries. Tropical timber producer countries had initially found the call for boycotts and the demand for sustainable forest management in the tropics to be an infringement on their national sovereignty and saw it more as a mechanism for the developed countries to gain control of their assets under the pretext of addressing environmental concerns. Developed countries on the other hand have stressed the need for global environmental management (Upton and Bass, 1995). This has led to the introduction of purchasing policies that favour timber and timber products that have been legally/sustainably sourced in the developed countries. A vehicle for facilitating the growth of global environmental management, in particular in the tropics, has been the introduction of the Forest Law Enforcement, Governance and Trade Process by the European Union as its response to the global problem of illegal logging and trade in associated timber products. The European Union is a significant consumer of wood products (TTF, 2006). This is a typical example of consumer influence on the market. This has been influenced by the environmental certification movement. The rationale is that consumers would choose to purchase products that cause no harm to the environment. This reasoning is supported by a number of studies that provide direct empirical evidence of positive attitudes and markets for environmentally certified timber products. These previous studies have been undertaken in the developed countries and have focused on the consumers. Hence there is a clear need for meaningful research with focus on developing countries; this PhD research is using Ghana as the test case in establishing producer attitudes towards SFM and timber certification. Other studies have also tended to look at export markets for tropical timber which are located in the developed countries, particularly the EU and the USA. Additionally, studies on perceptions on the domestic market to timber certification in the tropics, in particular in Ghana are non-existent. However, the domestic market could be a key factor in the development of forest certification. This is consistent with Porter's (1998) single diamond framework of demand conditions in which he argues that a large domestic market can lead to a competitive advantage since it can provide for economies of scale. In most developing countries the domestic market does not feature in the demand for certified products and this may be responsible for the slow growth in certification in the developing world. The current PhD research therefore seeks to

also investigate the role of the domestic market in the growth of forest certification in producer countries such as Ghana.

Various international initiatives have informed and provided guidance to the certification process. ISO Guides 61, 62 and 65 provide guidelines for the creation of certification schemes. The international discussions and recommendations on forest related political issues, considered at the Intergovernmental Panel on Forests (IPF)/ Intergovernmental Forum on Forests (IFF)/ United Nations Forum on Forests (UNFF), provide guidance on elements for the development of certification schemes that target sustainable management of forests (Baharuddin and Simula, 1996). The ITTO has also provided support for forest certification and sustainable forest management through the establishment of Criteria and Indicators. ITTO has, however, declined to support any particular certification scheme through a council decision. This is creating challenges for tropical timber producer countries given that they are committed to using ITTO criteria and indicators as the basis for their standards but hardly any international certification scheme is using the C&I of ITTO as their standard or base document. Hence, tropical timber producing countries who are pursuing certification in reaction to international market demands may have to comply with requirements of more than one certification scheme. This has increased cost implications to the firms in the tropics and is pronounced for SMFEs who have limited resources (Simula *et al.*, 2004). With the global financial, energy and food crisis, support by governments for forest certification will be on the decline due to the increasing deficits being experienced by many governments.

Existing forest certification schemes include those of the Forest Stewardship Council (FSC), The Programme for Endorsement of Forest Certification Scheme, the Sustainable Forestry Initiative (SFI), the Canadian Standards Association's Sustainable Forest Management (CSA), the Pan -African Forest Certification, International Standards Organization (ISO), Keurhout (Germany) and Rainforest Alliance at the International and Regional levels. National level schemes include the Malaysian Timber Certification Council Scheme (MTCC), CERTFOR (Chile), CERFLOR (Brazil) and the Indonesian Ecolabelling Institute (LEI). Studies on certification and certification schemes have tended to focus on the FSC, PEFC, CSA and SFI because they are either perceived to supply 90% of certified products in terms of forest cover (FERN, 2001) or because the scheme is operating globally

as is the case of FSC (Becker, 2005; FERN, 2001) or because FSC is the best established forest management certification currently operating (Thornber *et al.*, 1999). The criteria which are generally used tend to focus studies on developed countries and not the developing countries which are mainly producers of tropical timber. The studies also tend to isolate discussions on other schemes. Hence, models proposed or developed for certification have been based on the FSC standards. However, this study will focus on certification schemes that are of relevance to the tropical timber trade and are currently operational, namely FSC, PEFC, MTCC, CERFLOR and LEI. The focus is based on the recognition of difficulties and slow pace of growth of forest certification in the tropics.

4.4 International Schemes of relevance to Tropical Timber.

The following are descriptions of certification schemes that are of relevance to the tropical timber industry and trade:

4.4.1 The Forest Stewardship Council (FSC)

The Forest Stewardship Council was established in 1993 as an independent non-profit, non – governmental organisation. Originally based in Oaxaca, Mexico, its headquarters is now in Bonn, Germany. Its membership and support is made up of a coalition of business, environmental and social non-governmental organizations and individual members. Its highest decision making body is divided into two chambers, namely, the social and environmental with 75% voting power and the economic with 25% voting power. This creates an imbalance in favour of environmental groups making industrialists reluctant to participate in the FSC (Baharuddin and Simula, 1996). Additionally, the FSC scheme excludes governments in their processes thereby making tropical timber producer countries whose forests are mainly state controlled to be sceptical of the FSC intentions. It is worth stating that industry and government participation is critical to ensure success of such schemes and may account for the slow progress of certification, particularly FSC certification in the tropics.

The FSC's objective is to promote sustainable forest management. The FSC scheme aims at harmonising a global framework for performance standards and to act as an accreditation body for certifiers thereby providing an incentive in the market place for responsible forestry. So though the FSC targeted SFM, the underlying philosophy is to use market mechanisms to effect the required change towards

sustainable forest management. Initially targeted at tropical timber, the scheme has had patronage from the temperate timber areas. The FSC scheme seeks to provide consumers with credible information regarding the origin of wood products through a labelling scheme. The FSC label allows for a product made from several sources of raw material, such as paper and chip products, to use its WWF logo as a label provided 70% of the timber originates from certified sources. The other 30% should originate from known sources. Wood from controversial sources, such as High Conservation Value Forests, illegally logged areas and areas of existing dispute must be avoided.

The FSC has over the years developed globally applicable forest management standards and has established a set of guiding principles required to demonstrate sustainable forest management. More recently the FSC has set up several regional forest certification schemes (FERN, 2001). FSC certified wood products are marked with a distinctive logo. This logo is promoted to consumers by encouraging business to business trade. In effect the FSC has adopted a marketing approach to placing its scheme on the market.

FSC Standards

The FSC's standards are performance based and comprise the 10 principles as listed below:

1. Compliance with applicable laws and FSC principles – Forest management shall respect all applicable national laws and international treaties and agreements to which a country is a signatory.
2. Tenure and use rights and responsibilities – long term tenure and user rights to the forests shall be clearly defined, documented and legally established.
3. Indigenous people's rights – recognise and respect indigenous peoples' legal and customary rights.
4. Community relations and workers' rights – forest management operations shall maintain or enhance the long-term social and economic well-being of forest workers and local communities.

5. Benefits from the forest – use of forest resources efficiently to ensure economic viability.
6. Environmental impact – Conserve biological diversity and protect the ecological functions of forests.
7. Management plans – implement long term management plans. Management plans should reflect the level of intensity.
8. Monitoring and assessment – monitor management performance and environmental and social impacts.
9. Maintenance of natural forest – protect high conservation value forests. Sites of major environmental, social or cultural significance shall be conserved. Such areas shall not be replaced by tree plantations or other land uses.
10. Plantations – to manage plantation forest so as to reduce pressure on natural forests.

The FSC has developed Criteria and Indicators to implement these general principles which form the basis of FSC certification. The FSC scheme has a strong focus on social and environmental issues. It has introduced national and regional setting standard procedures and the generic standard is expected to be adapted to fit local conditions. FSC standards are compliant with ISO/IEC Guide 59 Code of Good Practice for Standardization, World Trade Organisation (WTO) Technical Barriers to Trade (TBT) Agreement – Annex 3 and International Social and Environmental Alliance (ISEAL) Code of Good Practice for setting social and environmental standards (Wenban-Smith, 2005).

Meidinger (2003) states that the FSC standards are too high for tropical forestry to reach in one step and advances for the development of a phased approach to forest certification in the tropics. This approach is favoured by many authors such as Eba and Simula (2002) and also championed by many tropical timber producing countries. Additionally, the FSC standards are perceived to be high not permitting SMFEs to be able to access the facility. Though the FSC have introduced the Small and Low Intensity Managed Forests (SLIMF) it still does not appeal to SMFEs from the tropical timber producing areas. The SLIMF is a policy initiative that has been developed to allow for certification bodies to identify operations that are eligible for assessment and monitoring using streamlined procedures (FSC, 2005). This is designed to reduce the cost of certification for small and low intensity managed forest management units. The specific criteria will vary with country and

ranges from 100ha to 1000ha. Despite this arrangement, SMFEs are still unable to meet the requirements, particularly the social and environmental requirements. This is creating difficulties for SMFEs in the tropics resulting in the slow rate of growth of forest certification in tropical producer countries. Humphreys (2006) attributes FSC failure in certifying forests in the tropics to the high standards of FSC and the world unresolved land conflicts with local communities.

Group certification of small holders, which has also been introduced by the FSC, seeks to address the concerns of SMFEs and allows for several small enterprises to be covered by one certificate, held by the group manager (FSC, 2005). This is targeted at reducing costs by offering economies of scale, provided that group members are similar in character. The difficulty for the tropics appears to be the lack of uniformity in the character of group members. This PhD research will consequently aim to capture characteristics of groups in the forest industry to highlight the possibility of implementing group certification.

Thornber *et al.* (1999) identified the reference to local communities in the FSC Principles and Criteria (P&C) as a barrier to community managed forests since the standard considers the local community as an element of the forest environment to be managed rather than the potential managers of the forest resource. This may in itself be a reflection of the lack of understanding of the traditional management systems of local or indigenous communities.

The FSC have used national schemes that are based on FSC Criteria and Indicators to drive national standards. For example, the FSC have established a regional (Africa) office in Kumasi, Ghana to promote its scheme in Africa and support the Global Forest Trade Network (GFTN). This has since moved to the capital Accra. The GFTN is supported by the WWF as a partnership between ENGOs and companies to improve the quality of forest management worldwide. The FSC has therefore provided office space and support for Ghana's National Working Group. This has brought into question the neutrality of the National Working Group in promoting other standards in Ghana and providing a choice of certification for the timber industry in Ghana. This seems to be reflected in the lack of progress in forest certification in Ghana over the last three years since Ghana timber industry and Government continue to be suspicious of FSC intentions given that Governments are not involved in the FSC process.

- FSC does not itself engage in certification but uses its accreditation procedures to register certifiers. FSC accreditation is for five years and is subject to reevaluation. Almost two-thirds of FSC certified forests are in Europe, one-sixth in North and South America and the remainder in Asia and Africa. A critique of the FSC scheme is summarised as follows:
- Although the FSC scheme targets the inclusion of stakeholders in its three chambers – social, economic and environmental, these have in effect excluded governments from participation. Governments are major stakeholders to SFM in the tropics thus making the scheme non-responsive to tropical timber producer countries. It is therefore regarded as a major flaw in the FSC process given that FSC is a strong advocate of stakeholder consultations but then is keeping governments away from its process though governments are major stakeholders in tropical timber producing countries.
- FSC is both a standard setting and accreditation body but to be credible there needs to be independence in the two functions.
- Access to FSC certification by SMFES needs improvement to accommodate the seemingly lack of uniformity in the character of SMFES.

The FSC model therefore involves:

- The development of forest management standards under a common protocol (Principles, Criteria and Indicators).
- Accreditation of certification bodies.
- Establishing protocols with select schemes such as the UK Wood Assurance Scheme and Keurhout.
- On product label.

The FSC brand is being promoted in the market place by the ENGOs such as WWF, Sierra Club and Greenpeace. The FSC cause has also been supported by some financial institutions such as the World Bank. It can be argued that FSC was first in the market and therefore has the first mover advantage in the market. Over time FSC has built a brand around its scheme hence the demand for FSC certificates in the market and the perception that FSC is the only global scheme (FERN, 2003).

4.4.2 Program for the Endorsement of Forest Certification (PEFC)

Faced with threats, some small scale forest owners and governments in Europe that were antagonistic to FSC set up the Program for Endorsement of Forest Certification (PEFC) in 1999. The PEFC originally had a regional focus, within the European Union, as reflected in their former name of Pan European Forest Certification Scheme. It has now broadened its scope to include the certification of forest from the tropics.

Some ENGOs, however, perceive the PEFC scheme to be of a lower standard than the FSC and that the scheme will not promote sustainable forest management (Bass *et al.*, 2001). This assertion makes SFM the core reason for certification and runs counter to the objective of FSC that seeks to provide incentives in the market to support SFM. The PEFC scheme also aims at providing a framework for mutual recognition of schemes. The PEFC like the FSC has a distinctive logo. Its C&I, which are not binding, are based on the Helsinki Process (now the Pan-European Process).

PEFC has six principles and criteria as stated below:

1. Maintenance of appropriate enhancement of forest resources and their contribution to global carbon cycles
2. Maintenance of forest health and vitality
3. Maintenance of productive functions of forest
4. Maintenance, conservation and appropriate enhancement of biological diversity in forest ecosystems
5. Maintenance of protective functions of forests.
6. Maintenance of socio-economic functions and conditions.

These criteria allow for modifications at the national level and are flexible. The standards seek to be credible, flexible, cost effective and transparent. National certification schemes that meet PEFC requirements may apply for endorsement and use the PEFC trademark to convey the origins of the product. Accreditation by PEFC is undertaken by the national accreditation body, unlike the FSC which does its own accreditation. PEFC is seen as being pro – SMFEs.

The PEFC scheme allows for 30% wood traded under its logo to be from unknown sources. However this then requires the separation of material and could result in added cost thereby making it unattractive to SMFEs. It must be stated, that although PEFC started as a European scheme, it has now expanded to include tropical timber though no tropical timber has as yet been certified under this scheme. Malaysia currently is the only country that has submitted its standards for endorsement by PEFC (Freezailah, 2006).

The criticism of the PEFC scheme includes the following points:

- No uniform set of standards between countries, creating a large variation between national schemes. This implies that the PEFC label does not provide for a label with consistent quality to consumers.
- The PEFC scheme does not address the issue of legal customary and traditional rights related to the forest land should be clarified and respected. In Sweden under the PEFC scheme the winter grazing rights of the Sami people are ignored. Environmental and social groups have not been party to the drafting of the PEFC standards.

The PEFC model involves:

- Developing standards
- Granting recognition to national standards
- Allowing for on product label

PEFC has 225 million ha of certified forests. PEFC has endorsed the national standards for Gabon, Malaysia and Brazil.

4.4.3 The Sustainable Forestry Initiative (SFI)

The SFI was launched in 1994 by the American Forest and Paper Association (AF&PA). The AF&PA is the national trade association that controls about 90% of paper production and about 50% of solid wood production in North America. The scheme was developed in response to public concerns about the forest products' environmental performance, making special reference to their ability to protect wildlife and water bodies. This was a reaction from the USA forestry sector to the United Nations Conference on Sustainable Development (UNCSD). The SFI standards have been developed by industry for industry (FERN, 2003). From its inception, it had not engaged other stakeholders, such as the ENGOs, and this lack of ENGO consultation was a major criticism of the scheme. However, in recent times SFI have broadened stakeholder consultation to include representatives of

environmental, conservation, and academic groups. Its stakeholders also include loggers, family forest owners and governments.

The SFI standard and certification process is system based. It uses the SFI 2010-2014 Standards for its certification program. SFI principles for sustainable forest management are as follows:

1. Sustainable forestry
2. Forest productivity and health
3. Protection of water bodies
4. Protection of biological diversity
5. Aesthetic and Recreation
6. Protection of special sites
7. Responsible fibre sourcing practices in North America
8. Avoidance of controversial sources including illegal logging in off-shore fibre sourcing
9. Legal compliance
10. Research
11. Training and education
12. Public involvement
13. Transparency
14. Continual improvement

These principles have been grouped into the following objectives, namely

- Forest Land management objectives
- Fibre sourcing objectives

The SFI is governed by an 18 member Board of Directors organised into three chambers of environment, social and economics. The three chambers have equality and diversity. Unlike the FSC, the SFI includes government in its chambers. This is one of the key strengths of SFI in recognising the role of government in forest ownership and regulation. SFI standards are reviewed every five years and changes can only be made with the approval of the Board of Directors.

Strong elements in the SFI program are:

- Its flexibility in forest management planning. It allows forest management planning to reflect the scale of operation and therefore addresses the needs of SMFEs.
- The recognition and acceptance of certificates from the American Tree Farm System (ATFS) and the Canadian Standards Association.
- Provision of community outreach and training programs to promote SFI standards across North America.
- Inclusion of strong social component in its standards that cover labour laws, including those of the International Labour Organisation (ILO).
- Funding of SFI is from contributions from program participants and no fee is paid to SFI by companies pursuing forest certification.
- SFI received PEFC endorsement of its standards and program in 2005.

SFI undertakes accreditation of certification bodies. The certification bodies undertake audits of companies being certified. Audits are undertaken every 12 months after the first certification and allows for continuous improvement by the certified companies. Certified bodies under the SFI scheme include Bureau Veritas Certification (BVS), Société Générale de Surveillance (SGS), PriceWaterhouseCoopers and KPMG Performance Register Inc. Accreditation bodies for SFI are American National Standards Institute, ANSI-ASQ National Accreditation Board and the Standard Council of Canada. These organizations are all members of the International Accreditation Forum.

The SFI certification model involves:

- Industry development of standards through a multi-stakeholder process

- Standard has objectives, performance measures and indicators
- Accreditation of certification bodies
- Code of conduct for members
- On product label and chain of custody certification

4.4.4 The Canadian Standards Association's Sustainable Forest Management Standards (CSA)

The Canadian Standards Association (CSA) was established by a coalition of forest industry associations in Canada. It was formally adopted in 1996 with the objective of promoting the use of sustainable management standards nationally. The scheme did not use on or off product labels in 2003 and at the time could have been considered more of a “registration” than a certification scheme (FERN, 2003). The CSA has now established a chain of custody certification (CoC) using the standards developed by PEFC. This is based on inventory control and allows for 70% from sustainable sources. Three inventory control systems are used. These are:

1. Input/output System which is based on the understanding that a batch of products can be labelled as sustainable and carry the CSA SFM mark if the amount output meets a minimum threshold requirement and in addition none of the raw material should have come from controversial sources.
2. Minimum average percentage system for composite material meets the average threshold requirement of the raw material and in addition none of the raw material should have come from controversial sources.
3. Physical separation in which the raw material received must be identifiably labelled and kept separate throughout the production and transportation to the consumer.

The CSA has received endorsement by the PEFC and undertakes mutual recognition with the PEFC scheme. The scheme is operational only in Canada. The CSA is a system-based standard but with a framework of performance requirements built into it. It has six criteria and 21 indicators.

The CSA scheme can be criticised on the following basis:

- Process dominated by vested interest groups.
- CSA does not provide to the public audit reports which are a key requirement for timber certification and hence the transparency of the CSA is disputed.
- CSA members set their own performance levels. There is no indication that the CSA scheme has led to an improvement in forest management in Canada (FERN, 2003).
- To date CSA audits have been carried out on large forest companies and do not cater for SMFEs.

The CSA is a national scheme, dominated by trade groups and without a strong brand. It does not cater for small-to-medium sized enterprises or tropical timber producers.

4.4.5 The International Organisation of Standards (ISO)

ISO is a federation of worldwide national standards bodies and it seeks to promote the development of standardisation in many sectors. *“ISO standards are developed by technical committees which should include qualified representatives of industry, research institutes, government authorities, consumer bodies, ENGOs and international organizations from all over the world”* (Upton and Bass, 1995). Thus ISO has a broad representation of stakeholders and unlike the FSC scheme it does include governments. In fact membership of ISO is the national bodies responsible for standardization and only one body per country is accepted. However ISO allows for a *“correspondent”* member. Correspondent members are *usually* in developing countries that do not have their own standards body (Upton and Bass, 1995). For the forestry sector the ISO 9000 and ISO 14000 series are used. These are process or system based, i.e. they are developed to measure processes/systems rather than products and hence are not performance based. The ISO 14000 standards provide a basis for Environmental Management Systems (EMS). The ISO 14000 series, which was adopted in 1996, provides the international standard for self declaration of environmental management systems. It is a process standard for environmental management systems and can be implemented in any type of enterprise in any sector. The ISO 14000 series is not industry specific and allows organisations to establish their own environmental policy so long as they keep to all domestic laws and regulations. Under ISO standards, firms may use first, second or third party certifiers unlike the FSC where certification is always undertaken by an independent third party.

The flexibility with the ISO 14000 is one of the main criticisms against it though developing country producers generally find this approach preferable. However, because ISO 14000 is assessing the system and not activities in the forest, it is argued that it will not ensure Sustainable Forest Management. The ISO has guidelines for a chain of custody (CoC) system for tracking timber through the supply chain - a requirement in the environmentally friendly markets to ensure a chain of custody and access to the markets, particularly in the European Union which is a key market for many developing tropical countries such as Ghana.

The ISO 9000 series on the other hand was the forerunner to the ISO 14000 series and is a quality management system standard. The ISO 9000 was developed from the British Standard (BS) 5750 and is administered by accreditation and certification bodies. ISO 9000 certifies that consistent business process has been applied. It does not, however, guarantee quality of the product or service. It however has nothing to do with the environment (Johnson, 1997). Johnson further states that the ISO 9000 is established to remove barriers in international trade in terms of different quality requirements in the various markets that could make it costly for producers to meet varying quality requirements in the different markets they serve. The ISO 9000 is similar to the ISO 14000 in that both are voluntary as is the case for certification. These are management rather than performance related. The differences between the two standards lie in the fact that ISO 9000 deals with quality management while ISO 14000 deals with environmental management. ISO 14000 has a wider target audience than ISO 9000 that targets commercial customers.

ISO reviews its standards at regular intervals of not more than five year intervals. ISO develops standard but does not check if the standards are being implemented by users in conformity with the requirements of the standards. This is left to the suppliers and their clients in the private sector (ISO, 2007). ISO uses the services of certification bodies to offer independent third party certification.

ISO identifies 3 types of environmental labels. These are:

- Type I – Labels based on voluntary multi-criteria product Life Cycle Assessment of environmental effects and the certification is undertaken by an independent third party certifier.

- Type II – Labels based on self declarations of environmental claims by producer, retailer or importer on product and items.
- Type III – the provision of quantified on product information in accordance with pre-set requirements for the consumption of the public. A substantial number of firms in the timber sector have used the ISO 1400 Environmental Management System in marketing their products.

4.4.6 Pan African Forest Certification Scheme (PAFC)

Under the threat of boycotts and the slow pace of certification in African countries, the African Timber Organisation (ATO) and the Inter African Association of Forest Industries (IFIA) sought to create the African Green Label/Pan African Forest Certification Scheme. This was viewed as a strategy to promote certification on the African continent (INDUFOR, 2002) and had the support of the African Timber Organisation (ATO). The ATO is a regional grouping of African timber producing countries namely, Angola, Cameroon, Central African Republic, Congo, Democratic Republic of Congo, Cote d' Ivoire, Equatorial Guinea, Gabon, Ghana, Liberia, Nigeria, Sao Tome and Principe and Tanzania.

The ATO started the development of its Principles, Criteria and Indicators (PCI) for the management of African Tropical Forests in 1993. This was adopted to form the basis of a future African Certification scheme in 1996 by the ATO Ministerial Conference. Since then and with the assistance of the Centre for International Forest Research (CIFOR) and the International Tropical Timber Organisation (ITTO), the ATO PCI have been harmonised with the ITTO C&I in 2001.

The ATO objectives of a regional certification scheme are to ensure cost effectiveness for certification, promote sustainable forest management and provide African forest owners with access to markets mainly in the European Union - its major trading partner for wood products (Baharuddin and Simula, 1996). From a recent study, (INDUFOR, 2002), respondents proposed the following as objectives for Pan – African Forest certification:

- Promotion of SFM in the African region
- Promote a common reference base for forest certification in different African countries
- Increase the recognition of African products in world markets

- Raise awareness of SFM and verification of origin of timber, in particular among SMFEs.

However, a major constraint to the development of forest certification in ATO member countries is the lack of financial resources of the ATO coupled with the fact that various schemes, in particular the FSC are dealing directly with individual companies in Africa thereby reducing the interest for a regional scheme (INDUFOR, 2002). Furthermore African forests have different levels of management and will therefore require different standard in working towards SFM

4.4.7 ATO/ITTO Principles, Criteria and Indicators (PCI) for SFM

The reviewed ATO principles, criteria and indicators are harmonised with the ITTO' C&Is. The harmonisation was as a result of the desire of the African member countries of the ITTO to avoid the use of two sets of criteria and indicators. The ATO had developed its set of PCI's and at the same time (1992) the ITTO had just revised its C&I. This prompted the ITTO African member countries to seek the support of the ITTO through an International Tropical Timber Council decision Decision 4(XXIX) adopted in November 2000 for collaboration between ATO and ITTO to make the ATO PCI consistent with the ITTO C&I. The outcome is a unique and harmonised set of PCI's applicable to natural tropical African forests (ITTO, 2003). This has 1 principle, 5 criteria and 33 indicators and 45 sub-indicators at the national level and 3 principles, 15 criteria 57 indicators and 140 sub- indicators at the forest management unit (FMU) level. These form the basis for the development of verifiers and standards of performance for assessing SFM at the forest management unit level. The principles are as follows:

Part 1: National level

1. Sustainable forest utilization and maintenance of the multiple functions of forests are a high political priority

Part 2: FMU level

2. The forest management unit (FMU), designated for whatever form of land use, is sustainably managed with a view to supplying required goods and services

3. The main ecological functions of the forest are maintained
4. According to the importance and intensity of forest operations, the FMU manager contributes to the improvement of the economic and social well-being of workers in the FMU and of local populations.

Despite the support provided by the donor community the development of the Pan-African Forest Certification scheme has not been achieved primarily due to differences in the levels of forest management in individual countries, the instability in the forest rich countries such as Cote d'Ivoire, Republic of Congo, DR Congo and Liberia and the lack of financial resources to drive the certification process by the ATO. Additionally, due to the lack of resources and commitment by member countries, the ATO PCI has not been effectively promoted. It is driven by member governments and the trade associations. It fails to engage the NGO community hence it lacks the credibility required to gain acceptance in the market. The PAFC Scheme is not operational and no commitment made as to the model for the scheme. However Abreu and Simula (2004) have proposed a phased approach to certification for the PAFC. Gabon has used the ATO standards to gain endorsement by PEFC for its national scheme.

4.4.8 Keurhout Foundation

Keurhout is a verification scheme based in the Netherlands and is industry and trade driven in response to the demands by the Dutch ENGOS. Keurhout undertakes valuation of certificates and is not itself a certification body. Keurhout uses the Board of Experts to evaluate the certificates. The certificates are evaluated against Keurhout protocols for legality and sustainability. The Board of Experts is autonomous in its decision making. Keurhout uses national standards as a basis for its assessment and verification. Keurhout has been engaged in the certification of African forests based on ATO's PCI. Keurhout has recognised the problems of African countries and strives to address these problems in its operations. Keurhout allows for a phased approach to certification. This flexibility by Keurhout does not then enjoy support from the NGO community and its credibility has been questioned. The Keurhout Foundation was established in 1996 by the Dutch Ministries of Foreign Affairs, Agriculture and the Netherlands Timber Trade Association (NTTA). Keurhout has a board of experts and a board of appeal. Keurhout validates SFM in producer countries and the CoC in the Netherlands.

Keurhout has a membership of 3000 with its members accounting for 75% of the market. The Keurhout requirements are as follows:

- Protocol for validation of legal timber (LET protocol) – 2004. This protocol has been developed for the Validation of claims of legal timber. This is meant to distinguish between timber with a demonstrable legal origin and timber that does not satisfy claims of legal origin (NTTA, 2006). This protocol like many others recognises legal origin as an indispensable prerequisite for sustainable forest management. This protocol recognises that legal origin and legal compliance fits into the concept of progress towards SFM. The protocol requires that timber with legal origin should be harvested in compliance with the relevant laws; that protected areas and species, minimum limits and volumes to be harvested are respected. The rules and legislation refer to laws and rules at the sub-national, national and international levels including international treaties and agreements ratified by the country. In fact some ENGOs have argued that meeting requirements for legal origin can promote SFM (Kyeretwie, 2007)
- SFM protocol – this protocol was drawn up on the basis of minimum requirements for SFM (Keurhout, 2007). This involves the Keurhout Hall mark and comprises additional protocol for the validation of reliability and quality of SFM certificates.
- Validation of SFM certification systems (SYS protocol) (NTTA, 2006).

Keurhout have since 1999 entered into a form of cooperation with the FSC (Bosdijk, 2001). A major challenge to Keurhout certification is their dealing with ENGOs. Countries involved in the Keurhout system are Denmark, Netherlands, France, UK, and Belgium. Keurhout uses certifying bodies such as SGS. The use of third party for verification of claims of legality is a strong point in the Keurhout protocol. Keurhout protocols require that third party certifying bodies must comply with ISO/IEC Guide 62, 65 and 66 and must be accredited to the International Accreditation Forum (IAF). The Keurhout approach is represented graphically as follows:

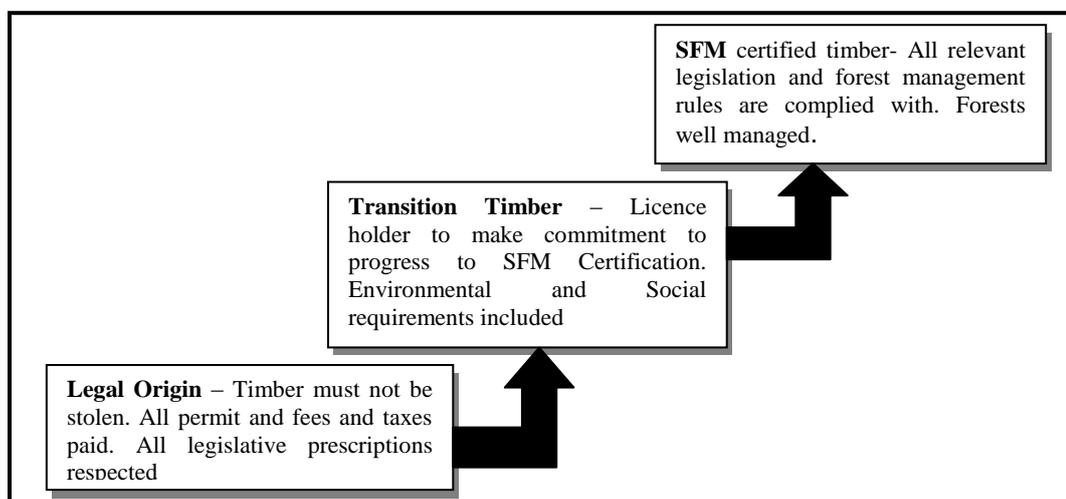


Figure 4.2 The three levels of Keurhout certification

The Keurhout certification system uses national standards and those of third party certification bodies to assess its protocols. In the absence of national standards or those of certification schemes it uses the ISO standards. The Keurhout system also uses the phased approach to certification and has three levels (Figure 4.2)

- Keurhout has an on product label for communicating its credentials with the market. The label is in two forms as follows:
- Keurhout -Sustainable system: Under this system a total of 49,037ha have been certified. Gabon became the first African country to have part of its forest (1,185 ha) certified under the Keurhout system.
- Keurhout – Legal system: Under this system 4317 ha from Malaysia have been certified with 28 Chain of Custody certificates (Keurhout, 2007).

This system allows companies to move at their own pace and it is a model that Ghana and other tropical timber producer countries should consider adopting. The system also encourages Business-to-Business (B2B) relationships to drive the certification process. Its credibility is however being questioned by the ENGOs because it is private sector driven. Producer countries in considering this model should engage the ENGOs early in the process to address their concerns so as to gain their support.

4.4.9 National Certification programmes

A number of certification schemes are under development at country level. Bass *et al.*, 2001 have divided national schemes into three groups:

- Schemes that are aligned to the FSC or PEFC in their development. For instance CERTFOR, of Chile. These schemes have developed quickly and also gained market acceptance.
- Schemes that develop independently but with time seek compatibility with the major schemes such as FSC and PEFC. This is the case for the Lembaga Ekolabel Institute, Indonesia and that of the Malaysian Timber Certification Council Scheme. These national schemes have experienced difficulties in gaining market acceptance and have therefore in recent times moved towards aligning their schemes with the front runners in the market, namely the FSC and PEFC. This approach is currently being pursued by Ghana and offers tremendous gains for tropical timber producer countries.
- Schemes that do not have links to any umbrella scheme. This was the approach adopted by all the tropical timber producer countries; however this approach is giving way to the second group above. Countries have found it difficult to promote and penetrate markets with their national schemes.

National schemes from the producer countries have mainly used ITTO C&I and FSC PCI as a framework for their standards development. Some selected national schemes in the tropical timber producing areas that are gaining increasing recognition in the market place are discussed below.

4.4.9.1 Brazil

Certification in Brazil is mainly from timber plantations. Very little is from the natural forest due to a high concentration of illegal extractions from the Amazon forests that feeds into the domestic market. Brazil consumes about 90% of its timber production on the domestic market. The domestic market is therefore a driver for speeding up forest certification in Brazil. The lack of awareness and demand on the domestic market appears to influence the pace of development and growth in forest certification. The creation of the Global Forest Trade Network in Brazil which seeks to promote trade in certified timber products by creating linkages between producers and buyers of timber products has further enhanced the trade in certified timber products in Brazil.

Forest certification in Brazil is consumer driven, in particular by the northern consumers where land use changes in Brazil are perceived as forest destruction and

linked to the tropical timber trade. The irony of Brazil's progress in forest certification is that the certified forests are plantations rather than natural forests.

Introduction of FSC certification into Brazil met some resistance due to the fact that industrialists/millers perceived the standards as inflexible and the use of foreign certifiers as “meddling” in the Brazilian timber industry. It is however worth mentioning that FSC continues to be the main scheme in Brazil that has certified forest, mainly plantations. The fact that Brazil with its vast natural forest is certifying plantation timber reflects the challenges facing natural forests in the tropics. As a result of the perception of inflexible standards of FSC by the industry in Brazil, the industrialists (Brazilian Silvicultural Society) have come together to create and promote a national standard – CERFLOR that was established in 1991. The scheme became operational in 2002 (Eba'a Atyi & Simula, 2002; DEPA, 2003) and only for plantation timber. The CERFLOR scheme is administered by the National Accreditation Agency, INMETRO.

4.4.9.2 Ghana

Ghana signalled its intention to develop a national forest certification scheme in 1992. National standards have been developed and field tested and the current standard is the Ghana Forest Management Certification Standards and Checklist (FMCSC Version 5), published in May 2005. The Standards (FMCSC) have harmonised the Ghana Standards with the Forest Stewardship Council's (FSC) Principles and Criteria and the ATO/ITTO Principles, Criteria and Indicators (PCI's) for the sustainable management of African natural tropical forests (FC, 2005). The standards have been further developed into the FSC format and renamed the Ghana Forest Certification Standard (GFCS). The GFCS however does not cover forest plantations. The development of the GFCS is government driven and is expected to be used to promote SFM in Ghana. The standards were developed by the National Working Group with funding from the Forestry Commission. In recent times the National Working Group has been supported and accommodated by the FSC – African regional office. This could cast doubts on the independence of the national working group in developing a national system.

FSC is working closely with the Producer group (GFTN) in Ghana to promote forest certification at the company level. The GFTN is working with six companies under the Producer Group Initiative (PGI) in Ghana to achieve forest certification using the FSC standard. The GFTN provides technical advice, information and training to the six companies that seek to be certified. Assistance provided to the

companies includes the writing of management plans, baseline studies and training on reduced impact logging. These companies are adopting a phased approach to forest certification. This is creating some confusion in Ghana given that companies are torn between the national schemes and implementing the FSC scheme which is being promoted by the NGO community (e.g. WWF, Friends of the Earth and Forestwatch) in Ghana. Ghana's GFTN was funded by the DFID from 2003 to 2006. Despite support from the GFTN no company in Ghana has attained certificates of attestation of sustainable forest management. Ghana's principle for certification is presented in Table 4.1

Principle One	Sustainable forest utilisation and management and the maintenance of multiple functions of forests are a high political priority
Principle Two	Compliance with laws and regulations
Principle Three	Land tenure, stakeholder and resource rights
Principle Four	Conservation and maintenance of biological diversity
Principle Five	Rights and responsibilities of workers
Principle Six	Economic benefits from forests: revenue generation and the equitable distribution of costs and benefits
Principle Seven	Forest management systems

Table 4.1 Ghana's Principles for Certification

Ghana's principle one which makes reference to SFM as a high political priority reflects the desire for government involvement in forest certification in Ghana. The role of government is perceived as an issue for the current research and will form a central point in the questionnaire to be used for the survey. There are key differences between the FSC Principles and those of the Ghana Forest Certification Standard. The differences are highlighted in Table 4.2

PRINCIPLE	GHANA FOREST CERTIFICATION STANDARD	FSC STANDARD	REMARKS (FSC AND GFCS equivalence)
Principle One	Sustainable forest utilisation and maintenance of multiple functions of forests are a high political priority.	Compliance with laws and FSC principles	FSC Principle 1 equivalent to GFCS Principle 2
Principle Two	Compliance with laws and regulations	Tenure and use rights and responsibilities	FSC Principle 2 equivalent to GFCS Principle 3
Principle Three	Land tenure, stakeholder and resource rights	Indigenous people's rights	Ghana has no indigenous people as defined by the UN Working Group on indigenous people
Principle Four	Conservation and maintenance of biological diversity	Community relations and workers rights	FSC Principle 4 equivalent to GFCS Principle 5
Principle Five	Rights and responsibilities of workers	Benefits from the forest	Equivalent to FSC Principle 3
Principle Six	Economic benefits from forests: revenue generation and the equitable distribution of costs and benefits	Environmental impact	Not implicit in the Ghana standard
Principle Seven	Forest management systems	Management plans	Ghana has a broader principle
Principle Eight	Not applicable	Monitoring and assessment	Monitoring and assessment not included though it could be implied under Ghana Principle 7
Principle Nine	Not applicable	Maintenance of high conservation value forests (HCVF)	No principle on HCVF's
Principle Ten	Not Applicable	Plantation	Ghana has no principle on plantations

Table 4.2 Comparison of Principles for GFCS and FSC

4.4.9.3 Malaysian Timber Certification Council (MTCC)

The MTCC was launched in 1999 as the National Timber Certification Council (NTCC). The MTCC is an independent organisation with funding from the Malaysian government and a levy from industry. MTCC seeks to develop a voluntary national certification scheme. The MTCC is governed by a Board of Trustees that is made up of government, academia, private sector/industry, research

institutions, and ENGOs. It must however be stated that since 2001 the ENGOs in Malaysia, such as the WWF Malaysia, have withdrawn from the Board due to concerns in respect of transparency and the consultative process (WWF Malaysia, 2001).

The MTCC, which undertakes both FMU certification and Chain-of-Custody certification, plays the following role:

- Receives and processes applications for certification.
- Arranges for assessments to be carried out by independent assessors registered under the scheme.
- Decides on all applications based on reports from independent assessors.
- Undertakes peer review as a requirement for forest management certification.
- Provides for an appeals procedure for aggrieved parties.

Present institutional arrangements for the MTCC scheme are as shown in Figure 4.3.

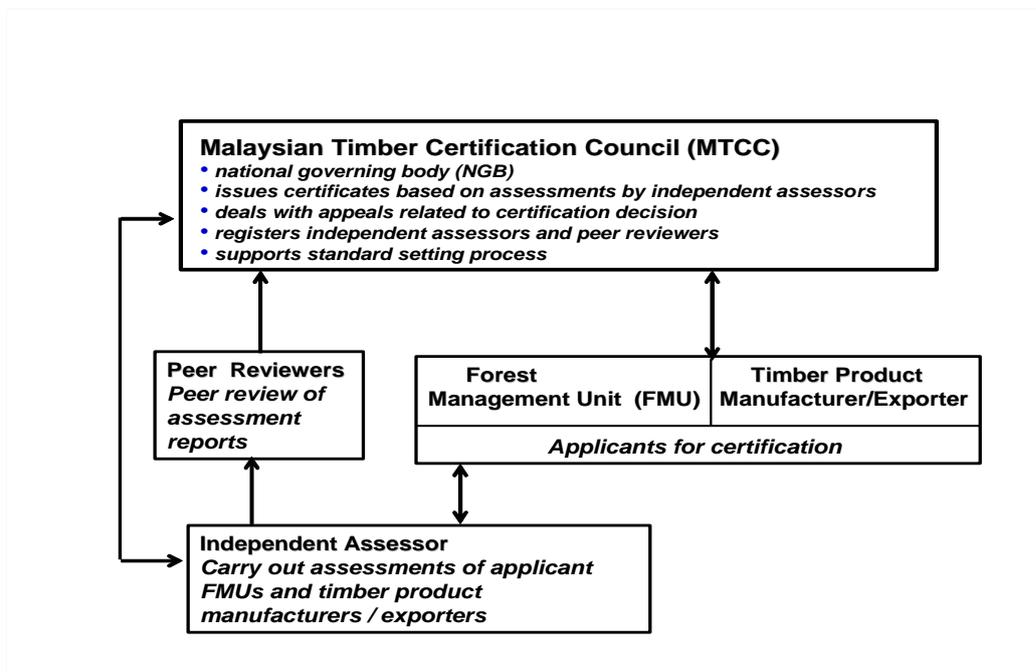


Figure 4.3 Institutional arrangements for MTCC scheme (MTCC, 2006)

Under this institutional arrangement, the Department of Standards Malaysia will undertake the accreditation. This can be viewed as lacking transparency since the Department is a state body. The MTCC is also a state supported body. Malaysia has

also reviewed its national standards, Malaysian Criteria and Indicators for Forest Management Certification (MC&I, 2002) to conform to the FSC standards. Malaysia has submitted its standards to the PEFC for endorsement (MTCC, 2006). The MTCC standards are based on the ITTO Criteria and Indicators for the management of natural tropical forests. To date the MTCC scheme has issued 9 certificates for FMU's covering 3.85 million ha of permanent forest reserves in Malaysia (MTCC, 2008). Under the MTCC, 113 Chain of Custody Certificates have been issued (MTCC, 2008). This is an increase of 33% over that of 2006. Though the MTCC is scheme is not gaining recognition by ENGO's as a result of the perceived weak stakeholder engagement, in particular the indigenous people, many government procurement policies have evaluated and accepted the Malaysian scheme as meeting criteria for legality but not sustainability. The MTCC scheme has been listed by the governments of the Netherlands, UK, and Germany as being responsive to the requirements of the procurement policies of these countries (MTCC, 2006; TTF, 2006). The MTCC model is to align itself with the two main certification initiatives, namely PEFC and FSC, thereby providing access to markets in the EU. This is similar to the approach adopted by the UK wood assurance scheme in seeking both FSC and PEFC certification in the UK. Since May, 2009 MTCC have received endorsement for the PEFC making it the first national scheme from the tropics to be endorsed by PEFC (PEFC, 2009). This is expected to provide an advantage to Malaysian timber in the environmentally sensitive markets.

More recently, Malaysia has engaged the EU in negotiations for the Voluntary Partnership Agreement (VPA) under which Malaysia will export only legal timber to the EU. This will be a big challenge in respect of how this is managed within its current progress on forest certification. As at May, 2010 Malaysia was yet to reach an agreement with the EU on the VPA. The key challenge for Malaysia is the issue of indigenous people and their rights. This for Malaysia has political implications and is therefore creating some challenges for the Malaysian government in its negotiations with the EU.

4.4.9.4 Indonesia

As far as the development of national systems is concerned, Indonesia is probably one of the most advanced countries. A decision has been taken to establish a national timber Eco-Labeling Institute and substantial work has been carried out to develop the criteria for assessment and tracking procedures. The Indonesian

Ecolabelling Institute (LEI) was established in 1998 and engaged ENGOs, industry and government in its formation and development. LEI's objective was to promote sustainable forest management in Indonesia through the implementation of a certification scheme. The Indonesian ecolabel seeks to provide information so that consumers can make a choice and distinction in favour of environmentally friendly products. It will reward producers for operating in an environmentally friendly manner through price premiums or access to markets (LEI, 2006).

LEI does not engage in certification, but accredits certification bodies whose role is to evaluate whether the forests and companies that are covered by the certification scheme are managed in accordance to the LEI standards (DEPA, 2003). LEI are responsible for certification and labelling in the natural forests, plantations and community based forests. The LEI scheme has taken into account community forests which are usually SMFEs, in the development and implementation of the scheme. LEI issues certificates for sustainable management of forest and chain of custody. LEI are adopting a phased approach to forest certification. Since 2000, LEI have been engaged in a joint protocol with FSC.

The LEI certification comprises:

- Standards in the form of Criteria and Indicators for sustainable management of plantations and natural forests
- Accreditation programme managed by LEI
- Procedures for certification, auditing and complaints
- Procedures for chain of custody certification and the usage of the LEI' Logo.

The LEI scheme has had support from donors and the NGO community such as the ITTO, WWF and the FSC. In 2004, WWF worked with local ENGOs to grant LEI certification to the first sustainable community based forests two *Wonogori* community groups managing teak forests (www.lei.or.id, 2006). The certification covers an area of 800ha of teak and mahogany. WWF has been the promoter of this community based initiative and has created a linkage to the market for these groups. LEI's scheme that targets the community groups has a shorter process and seeks to reduce the cost of certification for these community groups. The total forest

certified or in the process of being certified in Indonesia is about 3 million ha (LEI, 2006).

The challenges for certification in Indonesia have been due to the following:

- LEI's reluctance to adjust to the FSC international system. This is attributed to the national pride.
- Lack of recognition for the rights of the indigenous communities in Indonesia. LEI certification has been attacked by ENGOs for lack of a broad stakeholder consultative process.

4.4.9.5 Chile

CERTFOR is a Chilean national scheme that is designed specifically for plantation timber. CERTFOR was developed in 1999 using a series of criteria and indicators (C&I) (Naussbaum and Simula, 2006). The C&I were based on the Montreal Process. The governing structure of CERTFOR is a non-profit organisation that represents a cross section of stakeholders. Under CERTFOR almost 1 million ha of plantations have been certified. Since 2002 CERTFOR has been a member of the PEFC. CERTFOR uses on-product labels to provide recognition in the markets.

4.4.9.6 Gabon

In 1993, Gabon was the first African country to pursue forest certification, when it adopted the FSC scheme (Purbawiyatna and Simula, 2008). This initiative was private sector driven. However, when the company Leroy, Gabon had its certificate withdrawn, due to lack of stakeholder consultation in the management planning and certification process the private sector lost interest and this created a big setback for forest certification in Gabon (Purbawiyatna and Simula, 2008). Hence, the private companies sought to pursue certification through the Dutch Keurhout initiative. The private sector opposed FSC certification in Gabon and rather encouraged the development of the National and Regional Scheme. Both the private sector and the Government are promoting the Pan African Forest Certification Scheme (PAFC) Gabon.

Gabon has therefore approached certification through the promotion of a national forest certification scheme. Gabon's certification system is based on the Pan African Forest Certification Scheme (PAFC). This is based on the harmonised ATO/ITTO Principles, Criteria and Indicators (PCI). The mission of the Pan African Forest Certification Scheme of Gabon is *"to promote the implementation of the Gabonese system of the PAFC based on the ATO/ITTO PCI"*.

The PAFC Gabon has 4 colleges as its structure. The colleges are as follows:

- Forest owners and Beneficiaries (Ministry of Housing, urban development, village communities, etc.)
- Professionals college (SNBG, industry, Artisans, etc.)
- Social College (labour unions, etc.)
- Environmental college (NGOs, Scientists, etc.)

These colleges are governed by a 12 member board with a president.

The summary of the PAFC Gabon in developing its certification scheme is as tabled below:

Date	Activity
1995 – 2001	Development of ATO/CIFOR PCI
1998	ITTO PCI
2000	Harmonisation of ATO/ITTO PCI
2002	Validation of ATO/ITTO PCI by Ministers of ATO
2004	PAFC Gabon a member of the PEFC Council
2004	Creation of institutional structure
2005 - 2006	National consultative process to validate PAFC
2005	Application for recognition of PAFC Gabon by PEFC

Table 4.3 Summary of development of forest certification in Gabon(PAFC, 2008)

Funding of PAFC Gabon is through subscriptions, grants, donor support, etc.

The model developed by Gabon is to establish a national scheme and seek recognition for the national scheme by various international schemes/initiatives. Gabon has now received endorsement of its national standards by PEFC. Gabon also appears to supporting a regional scheme that can be modified at the national level to take on board differences in countries.

More recently, the private sector in Gabon has engaged in the WWF Global Forest Trade Network (GFTN) that supports the FSC scheme. The GFTN is running in Gabon, Ghana and Cameroon.

In more recent times, Gabon has indicated their intention to pursue and voluntary partnership agreement with the EU. This will result in the introduction of a phased approach. Gabon has certified about 3million ha of forest under the PAFC (PAFC,

2007). PAFC Gabon is championed by the Inter African Forest Industry Association (IFIA) who seeks to encourage a regional forest certification scheme.

4.5 Lessons learned in promoting national schemes

The national schemes that appear to be a dominant approach to certification in the tropics have difficulty in gaining acceptance in the markets. Furthermore, the credibility of these national schemes and standards is too often questioned and attacked by the ENGOs, such as, the FSC. The latter bodies perceive weakness in national laws, regulation and consultation process in standards development. They also highlight the lack of social components in national schemes and would like to see more emphasis upon the rights of workers and those of indigenous peoples included, which sometimes are a source of concern to national governments in some tropical timber producing countries due to issues of sovereign rights.

Despite the development of the above mentioned national standards in the tropics, progress of certification has been slow. This can be attributed to the fact that a large number of companies in the tropics are SMFEs and are not able to implement these standards due to constraints that include cost, lack of clear directions from the state institutions responsible for forests and the weak private sector engagement in the forest certification process. Nausbaum *et al*, (2002) cite Higman *et al*, (2002) as having shown that standards can be a significant barrier to SMFEs in obtaining certification. The authors cite some areas of limitations in respect of standards to the SMFEs as:

- Length and language of the standards
- Irrelevance of some requirements to local situations that only add length to the standards but not value
- Inappropriate requirements of some standards as a result of a top down approach in many tropical timber producing countries.

Promotion of national certification schemes can be expensive, particularly in competing against those ENGO schemes that had first mover advantage in the market and over time have gained acceptance as the only credible schemes. Lastly, governments are least trusted so schemes that are national and are being championed by governments are not perceived as being credible. It would therefore be easier for national schemes to align with the major schemes, in particular the FSC.

4.6 Underlying Models for existing forest certification schemes

The model adopted for forest and product certification is very much dependent on the:

- standards being used, and the extent of flexibility of the standards,
- objectives of the standards and
- interest of parties in the standards.

The objectives are either linked to markets or to sustainable forest management. These standards, however, do not generally take into account the requirements of the SMFEs or community forest owners. The approach has been for companies to use the standard of an international scheme (FSC or PEFC) or national schemes (UKWAS, MTCC, LEI) as reference standards. Despite these differences the procedures for certification in the various schemes are similar and shown in Figure 4.4

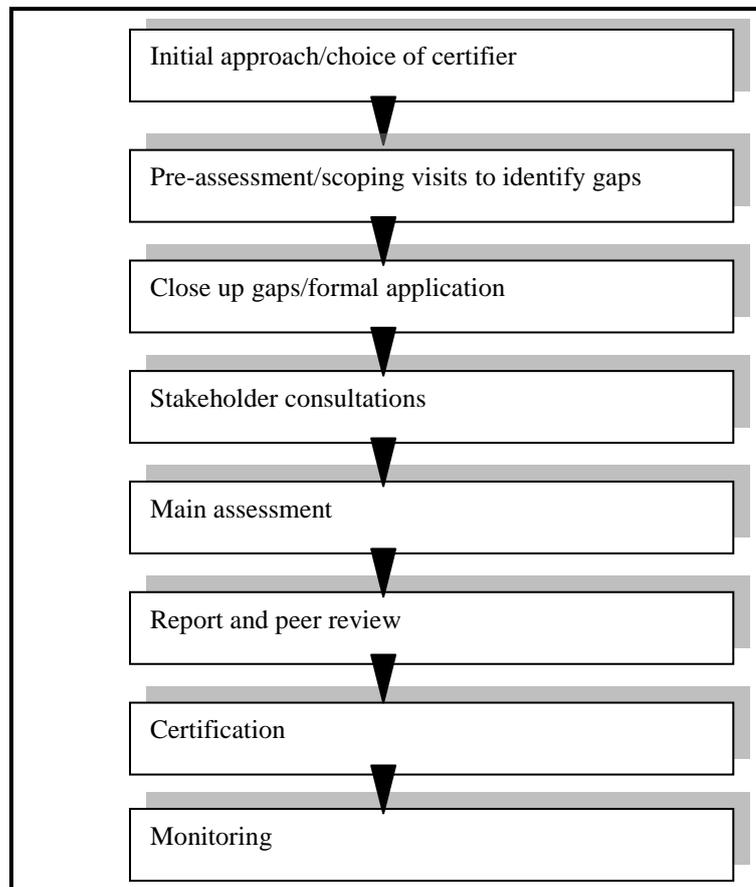


Figure 4.4 Certification Process (UKWAS, 2000)

A key component in the certification procedure is stakeholder consultations, in particular the engagement of indigenous communities. Raison *et al.* (2000) cite weak stakeholder consultations in the development and implementation of forest certification. In most tropical timber producing countries key stakeholders are often not organised and remain voiceless due to the perpetuation of colonial systems that removed the forest communities from gaining access to and control of natural resources. Consultations are noted to be a governance issue in forest management and a means of ensuring transparency. Various intergovernmental initiatives such as the Intergovernmental Panel on Forests/United Nations Forum on Forests (UNFF) recognise the importance of stakeholder participation and the related concepts of openness and transparency in the certification process (Cadman, 2002). Carbarle and Freitas (1995) also argue that transparency is achieved through check and balances in decisions that make use of public consultations, peer review mechanisms and public disclosure of information. This assertion is supported by Becker (2005), who argues that forest certification requires stakeholder participation in political decisions to be successful and credible. Becker views the absence of stakeholder participation as a limitation to governance and a barrier to forest certification. Fischer *et al.*, (2005), on the other hand, argue that the lack of government support and trained personnel in producer countries explains the slow pace of forest certification in the tropics. Fischer also attributes the lack of government support as being responsible for the poor participation by SMFEs in forest products certification. Hence, for the SMFEs in Ghana, this research will seek to verify the importance of stakeholder participation and identify a process to engage the different stakeholders and establish a mechanism for supporting their participation so as to eliminate governance barriers in the implementation of forest certification. The research will also evaluate the existing schemes and the extent to which SMFEs in Ghana perceive the level of their engagement in the certification process. Additionally, the research will seek to establish perceptions on the role of government in forest certification in Ghana.

4.6.1 Existing frameworks

In examining models for forest and product certification, it is important to consider the frameworks for standards since the standards will form the basis for any future models that are proposed. The existing frameworks for current international standards are as shown in Table 4.4

COUNTRY	INTERNATIONAL FRAMEWORK FOR FOREST STANDARD
Ghana	ITTO, ATO, FSC
Bolivia	FSC
Brazil	ITTO, FSC
Canada	Montreal Process, ISO
USA	Montreal Process
Germany	Pan – European
Norway	Pan – European, FSC
UK	Common audit protocol with FSC
Indonesia	ITTO, FSC
Malaysia	ITTO, FSC, German Tropenwald Initiative ³

Table 4.4 International framework for standards (Adapted from Bass and Simula, 1998)

It is evident from Table 4.4 that there are seven major frameworks for forest certification. However, the utilisation of these frameworks is largely dependent upon the differences that exist on the state of forest management in countries. Companies, particularly from the tropics will require longer periods to reach SFM. This is attributed to wide gaps between existing management standards and the requirements for forest certification (Durst *et al.*, 2006). For instance, INDUFOR (2002) reviewed the feasibility of a Pan-African scheme for the countries of West and Central Africa and proposed four options of forest certification for the region with 7 variants due to the differences that exist in the state of African forests. This would therefore imply variations in the standards to be used in different countries, reflecting the extent of diversity in the region. The FSC have been quick to react to differences in countries and have encouraged modifications at the country level to their standards. None of the options and variants proposed by INDUFOR takes into

³ German Tropenwald Initiative (TPI) was founded in 1992 as a joint effort between the German Timber Workers Union (GHK), the German Federation of Timber Processing Industry (HDH) and the German Timber Importers Federation (VDH) to deliver a system of certification and labelling of tropical timber from sustainably managed forests.

account the SMFE requirements. It is worth stating that the existing schemes, particularly the FSC, attempt at addressing the requirements of SMFEs through the introduction of group certification. Some have argued that the group certification appears to lower the standards and requirements of the respective schemes. The objectives of certification and the interests of stakeholders also tend to influence the model that is used. The research will therefore seek perceptions on the model that will facilitate the adoption of certification by tropical producer countries in particular the SMFEs.

4.6.2 Phased Approach to certification

It is generally accepted and recognised that the process of implementing responsible forestry standards so as to achieve forest certification is challenging hence there is the need to develop phased or stepwise approaches if certification is to become more accessible to forest managers in many parts of the world (Nussbaum *et al.*, 2003). Several studies (Proforest, 2003; Abreu and Simula, 2004) have proposed phased approaches as a means of facilitating certification, particularly for the SMFEs. The phased approach to certification is proposed because forest owners, particularly in the tropics are finding it difficult to bridge the gap between current forest management practices and the requirements under existing standards and certification schemes. Phased approaches provide a mechanism of introducing incentives for forest managers/owners during the improvement period. Hence, there is a reward for the transition to responsible forest management and certification (Nussbaum *et al.*, 2003). Purchasing policies are also targeting a step-wise approach to gradually achieve the long-term objective of sourcing wood products from responsible sources. The step-wise approach is aimed at rewarding producers that have made progress to SFM and are committed to achieving forest certification.

Given the short supply of certified material on the market, there is a growing demand for practical tools to support phased approaches and Nussbaum *et al.* (2003) have proposed the Modular Implementation and Verification (MIV) to allow for consistency and a credible mechanism for delivering a phased approach and for which there would be communication to the market in the form of an “on-product” label. The MIV is based on the FSC standard. Stakeholders that are hostile to FSC, particularly the tropical timber producers, will be reluctant to adopt a system that depends on FSC standards and the need to adapt the MIV to other standards.

4.6.3 Modular Implementation and Verification

The MIV model provides a predefined set of modules that cover thematic areas of forestry standards (ProForest, 2003). However, the choice of modules is left to the forest owner. The MIV is seen as a tool for a phased implementation of forest standards and certification. Under the MIV, Nussbaum *et al.* (2003) identify a number of elements that reflect responsible forestry and are consistent with forestry standards.

The principle is to make progress gradually by addressing the requirements in each element. These elements are considered as groups or phases and forest owners pursuing forest certification can address them one step at a time. This approach is presented in Figure 4.5

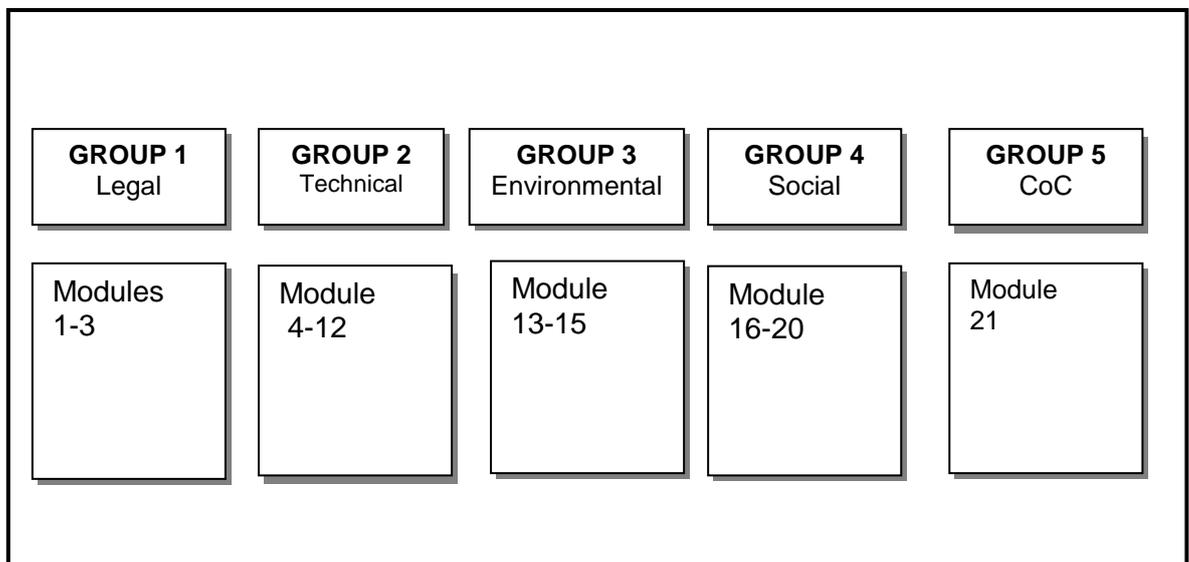


Figure 4.5 Schematic diagram of Modular Implementation and Verification (Adapted from Nussbaum *et al.*, 2003).

The components of the MVI groups as proposed by Nussbaum *et al.*, 2003 provide for a modular approach (see Appendix 2). Twenty-one MIV modules are divided into 5 groups – Legal, Technical, Environmental, Social and Chain of Custody. These groups reflect the topics or principles contained in the standards. The groups are further subdivided into modules and each module can be addressed separately allowing a phased approach to both implementation and verification (Nussbaum *et al.*, 2003). The requirements for each model are well defined, allowing for a standardised progression by companies implementing the scheme. Nussbaum *et al.* argue that the MIV provides for consistency and clear communication because “everyone knows what each module requires”. This is an understatement since in

the first instance companies may be applying different standards and the modules that can be developed would vary. For instance, the modules that can be developed from the FSC standard will be different from those of national standards. Hence unless the base standards are harmonised, it is unlikely to have consistency. It will therefore be critical in the research to establish the perceptions of the SMFEs on the standards used by the various schemes since this will form the basis for the development of the appropriate certification model. What is clear is the need for an effective communication mechanism on achievement under each module. Therefore communication with the market is critical in developing any model for implementing forest and product certification. Producer countries such as Malaysia have had difficulties in communicating the credibility of their scheme with the market. Malaysia has not been able to promote its standards in the external markets. Additionally, the ENGOs have been very hostile to the Malaysian scheme from its inception due to the perceived lack of stakeholder engagement in the Malaysian process.

Nussbaum *et al.* propose that under the MIV model minimum requirements are agreed upon prior to the establishment of relationships for supply of certified timber products.

It would therefore appear that the focus is not necessarily to achieve sustainable forest management but to address market concerns and gain access to markets. The MIV is targeted at meeting the needs of buyers in implementing responsible purchasing. Hence it can be argued that any future model being proposed should be clear on its objectives. The objectives for a company to engage in certification must either be to meet market requirements or to achieve SFM. Under the proposed MIV some special provisions have been made for SMFEs and low income community forest. The MIV allows for the model to be adapted for various user groups. However the model does not indicate how this can be achieved. It has been widely acknowledged that forestry standards are not written in a way that makes them easy for small forest owners to use (Nussbaum *et al.*, 2003). In trying to maintain the underlying conditions for good forest management, the adapted versions of standards retain the complexity of the original standards from which they were developed. Hence the use of the modular approach only allows for a simplified interpretation of the requirements for small forest owners. It is worth stating that the development of the MIVI has been through the use of technical committees. The level of consultation of the MIV with various stakeholders is not indicated. Hence one can argue that Nussbaum *et al.* (2003) failed to indicate the structure of the

development process, and the extent of stakeholder consultations, since these could affect the level of acceptance of the model by the forest industry and trade, in particular SMFEs. The model was also developed with the FSC standard in mind and is not sufficiently generic to allow for adoption by other schemes or initiatives.

4.7 Tropical Forest Trust (TFT) Wood control system

The Tropical Forest Trust (TFT), have introduced a model that provides for a wood control system that keeps illegal timber out of the production process. The control system contains seven elements as follows:

- A policy to eliminate illegally sourced or produced wood products.
- Wood origin control measures must exist.
- Procurement policy by the company to exclude illegal wood from its supply chain.
- Chain of custody must exist to trace wood flows.
- Internal audits must exist.
- Independent third party audits must exist.
- Stakeholders must have access to reporting systems on progress.

The TFT model recognises the need for stakeholders to have access to reports on progress. The TFT model seeks to address market requirements. The TFT model therefore seeks to link the supply chain from forest to consumer using its membership categories, namely Producer, Supplier and Buyer. It encourages trade in certified wood products between the categories. This model does not make any provisions for SMFEs and this must be factored into the model in the future if it is to be acceptable to tropical timber producer countries.

The TFT has been responsible for achieving the first FSC based certification scheme in Africa. This was achieved by *Congolaise Industrielle des Bois (CIB)* in Northern Congo in the Kabo Concessions. CIB is a large sized enterprise in the Congo. A major influence in the achievement of forest certification under the FSC scheme is the support of over US\$ 1 million that was provided by the International Tropical Timber Organisation and managed as a project. Total funding requirement for the project is in the region of US\$ 2.3 million. Roberts (2006) cites pigmy community engagement, the introduction of collaborative decision-making, the protection of High Conservation Value Forests and recognising the customary rights of the indigenous people as key achievements of the project.

4.7.1 Independent Validation of legal timber

Forest certification is a market based instrument that aims at promoting SFM (INDUFOR, 2002). However, in the absence of supplies of certified wood products on the market, there is a growing demand by consumer countries for timber to be sourced legally. This calls for a different model in certification since legality is seen as the first phase in timber certification. Figure 4.6 below shows a possible approach to SFM certification.

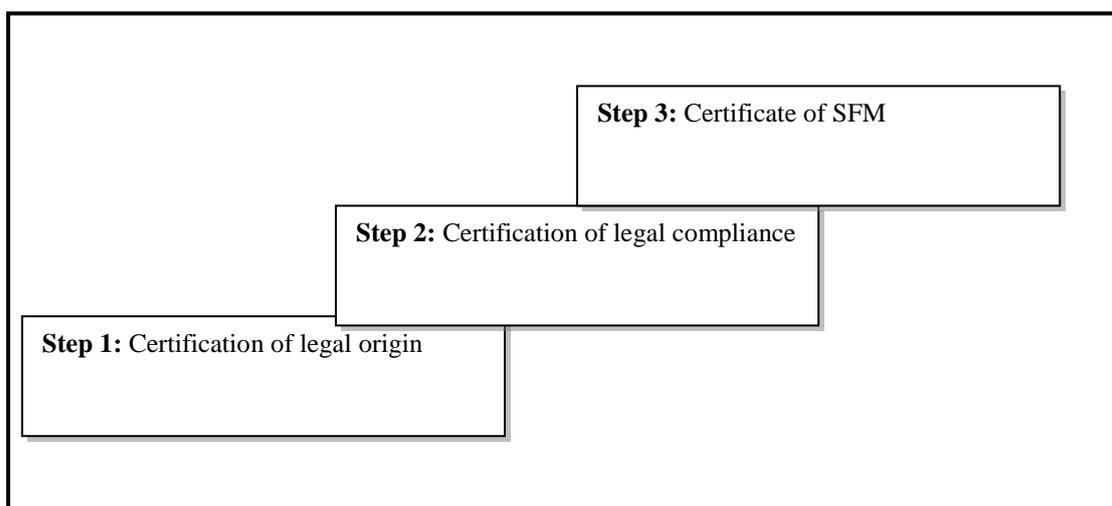


Figure 4.6 A model for independent validation of legal timber (SGS, 2006)

Independent Validation of Legal Timber (IVLT) being pursued by some governments covers the first and second steps in Figure 4.6. As companies pursue step 1 they will have to make commitments to the step 3 within a specified period otherwise their license is withdrawn. The existing Standards, Principles, Criteria and Indicators are used to create the respective steps/phases. This allows companies to plan their engagement of forest certification and reduce the capital outlay while improving their cash flow as they pursue full certification. The IVLT system provides a potential for law enforcement in producer countries, market access and reliable information to all stakeholders. For this model a key element will be the extent of stakeholder consultations in arriving at the definition of legality. In Ghana the process for the design has been questioned by Forestwatch, Ghana (Opoku, 2006) who indicate that the process has been limited to a few public officers and that civil society have not been engaged in the development process. This has allowed Ghana to address this concern through a multi-stakeholder consultative

forum (The VPA Steering Committee) in its engagement with the EU on negotiations for the VPA.

4.7.2 Global Forest and Trade Networks (GFTN)

The ENGOs have been a key driver in influencing changes in trade in wood products (Fripp, 2005). They have been able to push the private sector companies to address weaknesses in their supply chains. They have also encouraged governments to develop public sector procurement policies.

GFTN has sought to promote forest certification by adopting a model that links producers and buyers of certified timber through the Producer and Buyer Groups.

The GFTN uses its Principles, Criteria and Indicators of legality. Though GFTN is linked to the WWF and FSC, the standards used vary from the FSC standards and includes principles that go beyond forest management to industry and transportation of processed products to meet the needs of its producer and buyers groups. These standards are targeted at producers and acknowledge the role governments play in managing forests. The Principles, Criteria and Indicators are shown below:

- Principle 1: Land and Tenure use rights
- Principle 2: Physical and Social Environment
- Principle 3: Community relations and workers rights
- Principle 4: Timber harvesting laws and regulations
- Principle 5: Forest Taxes
- Principle 6: Log identification, transfer and delivery
- Principle 7: Timber processing sales and shipping

The model being used by the GFTN is to create opportunities for trade on a business-to-business level. This model does not take into account the SMFES. For instance in Ghana the four members of the GFTN are within the top ten exporters. This model provides support to the NGO community to create awareness among producers and drive the process to forest certification by companies. The objective under this model is not clear though it may appear that SFM is the objective. It can however, be inferred that access to markets is the prime objective.

4.7.3 IKEA Model

IKEA, an international home furniture retailer sought to gain market advantage by branding itself as being environmentally friendly. This is an example of a private sector initiative to source wood exclusively from legal and sustainable sources (Lounasvuori and Ali, 2006). IKEA recognised early enough the demand for certified timber but acknowledged that obtaining certified timber would be difficult hence the need to phase its requirements. IKEA therefore adopted a “staircase” model that has four levels as follows:

- Level 1: IKEA requires that the entry point of level 1 must be from legal sources. All controversial sources of timber, in particular, illegally logged areas, High Conservation Value Forests (HCVF) or conflict areas must not be allowed into the supply chain. Suppliers are expected to be committed to progression and can stay at level one for a maximum of 3 months. Level 1 suppliers must state the region and country of origin of the wood. High valued tropical species such as teak must be certified to IKEA level 4 or FSC equivalent.
- Level 2: This level requires wood from legal sources and if from plantations they must not have been established by conversion before 1994. This level is the minimum standard for existing suppliers. The wood must not originate from protected areas unless it is independently certified as coming from sustainably managed forests.
- Level 3: This level requires commitment and preparation to certification. Forest management in transition towards sustainable forest management and certification and
- Level 4: Well managed forests. This is full certification and is verified compliance with IKEA recognised standards.

It can be argued that for IKEA the approach adopted is used to gain market acceptance and create an image of a company that is socially and environmentally responsible for the purpose of gaining competitive advantage.

- Abreu and Simula (2004) in a study on implementing forest certification in the tropics have analysed the existing models and initiatives and have proposed three options that bear semblance to the IKEA and MIV models for implementation of phased approaches to certification by tropical timber producer countries. These are:

- Option 1: Baseline and Action plan requires that the chosen certification standard is divided into legal, economic, environmental and social components of SFM and these form the basis for defining the phases. The base line allows for a minimum requirement of which verification of legality should form a part.
- Option 2: Cumulative phases approach requires that the FMU demonstrates some level/percentage of compliance. The levels of compliance to be achieved can be divided into 4-5 levels. These levels will correspond to the degree of compliance. Full compliance with legal requirements will form a compulsory part of level 1.
- Option 3: Predefined phases approach that requires that the standard is broken down into a predefined number of levels with specific requirements. At each of the levels the requirements need to be established for the three sustainability dimensions, namely the social, economic and environmental. Determination of the requirements for the levels will be through a participatory process of engaging stakeholders.

Abreu and Simula further provide preconditions for phased approaches as:

- Full certification should be the goal
- Mechanisms to support producers must exist. This brings to question the role of governments in providing support in producer countries.
- Phased approaches should be at the FMU level
- There should be a predetermined time frame with action plans that are addressing the gaps in performance
- Clear and adequate communication is critical
- Transparency is a must
- Flexibility and adaptability
- Independent audits
- Absence of conflict of interest in the work of the auditors.

4.8 Experiences from other sectors

This section reviews the experiences from other sectors to establish factors that can be included in the survey questionnaire and the process for developing the

certification model suitable for SMFEs in tropical timber producer countries. Experiences are drawn from the tourism, agriculture, cocoa and mining sectors.

4.8.1 Green Globe 21 International Ecotourism Standard

The tourism industry is fragmented and is comprised mainly of small businesses who do not consider environmental issues a priority (WWF, 2000). For this reason the experience from this sector is relevant to the research in addressing environmental issues that relate to SMFEs. WWF reports that many small businesses in the tourism sector are not even aware of the presence of certification schemes. Smaller businesses and those that are less committed to environmentally responsible behaviour find cost as a barrier to certification.

The Green Globe certification process established in 1994 and drawing on the principles of Agenda 21 seeks to contribute towards environmentally sustainable tourism. The Green Globe 21 uses an ecotourism standard and certification scheme (Abreu and Simula, 2004). The Green Globe uses ISO 14001 that reflects a process system rather than a performance system. Like forest certification the Green Globe scheme requires multi-stakeholder consultations.

To achieve Green Globe certification, an ecotourism product will have to demonstrate compliance with eight principles by meeting the relevant requirements of the standard. Green Globe uses a benchmark as minimum standards. The Green Globe 21 (GG21) certification scheme uses a 3 step process model, namely Affiliation, Benchmarking and Certification (ABC).

A marketing logo is used to reflect performance that exceeds the minimum requirements. Green Globe allows the use of its logo as soon as a company commits to undertaking the certification programme. This model allows some flexibility by allowing the use of the logo as a result of a declaration to commit to certification. A second distinct logo is awarded when the company achieves certification and provides a basis for consumers to differentiate the two labels. This can create a credibility problem when consumer awareness is low.

For the Green Globe Certification scheme WWF, (2000) cites constraint to certification as follows:

- a lack of consumer awareness and demand
- a lack of credibility, especially for Green Globe

- too many competing and confusing schemes which mean that both industry and consumers don't understand their meaning and requirements

4.8.2 The Kimberley Process Certification system

The Kimberley Process Certification System (KPCS) was established in 2003 for rough diamonds as a result of the need to control trade in conflict diamonds. The process involves governments, industry, United Nations systems and ENGOs. The KPCS is not legally binding, but a voluntary process based on minimum standards. The KPCS model has a peer review mechanism (PRM). The review team has three governments and one each of ENGOs and Industry. The PRM creates legitimacy without recourse to fully independent monitors. Under this model, independent monitors function as advocacy groups. The Kimberley Process is a concerted effort by ENGOs on an international scale that has contributed significantly to a change in public perceptions (Verifor, 2006). The success of the KPCS is the support it receives from the industry. The key feature is the participation of governments in the Kimberley process. This is missing in major forest certification schemes and the slow pace of development of forest certification in the tropics can be attributed to the lack of engagement of Governments. Governments are the managers of forests in almost all tropical timber producing countries.

The KPCS is a simple and workable international certification scheme based on national certification schemes and on internationally agreed minimum standards.

The basic elements of the agreement are:

- Internal controls with an audit trail
- Kimberley certificate accompanying each export. There is no trade in diamonds unless accompanied by a certificate
- Each importing country is expected to notify the exporting country.
- Shipments must be made in tamper proof packages.
- Member states to submit quarterly export statistics on trade.
- Centrally maintained website to facilitate the comparison and verification of exports.

This process is similar to the verification of legal timber that is being proposed by the EU under its Forest Law Enforcement, Governance and Trade initiative.

The potential for access to markets has made this seemingly voluntary mechanism obligatory. The KPCS offers a model of effective collaboration between industry, producer states and civil society. The success of the KPCS lies with the three pillars of its governance systems namely, Governments, Civil Society and Industry.

4.8.3 The US Lacey Act

The US Lacey Act is a legislation that forbids the trade in fish and wildlife obtained illegally in a foreign country. The law seeks to protect fish and wildlife and support its sustainable harvest. The US Lacey Act was first adopted in 1990 and named after its sponsor Fletcher Lacey, a well known naturalist (Ozinga *et al.*, 2002). Animal species are subject to the Act when they are taken in violation of regulations in another country and for plant species when it is in violation of US regulations. Plants covered are restricted to species in the Convention on Trade in Endangered Species (CITES) list. Since 2007, the Lacey Act has been extended to cover timber thereby making it illegal to import, sell or possess timber that is illegally produced (Brack, 2007). McClendon, 2007 views this as a burden for SMFEs in the USA arguing that undue responsibilities are being placed on these companies.

The Lacey Act requires all shipments of timber, fish and wildlife to be marked and labelled on all shipping containers. Penalties are imposed for non compliance.

Ozinga *et al.* (2002) and Brack, (2007) report that the model provided by the Lacey Act could be of relevance to controlling illegal logging and could inform legislation outlawing the imports, transportation, purchase, sale and receipt of timber from illegal sources. This model requires regulation rather than a voluntary mechanism that is championed by certification schemes. It has a strong government involvement and less of the industry and NGO engagement.

The model under the Lacey Act is a country-based legislation. A regulation from a consumer country and this could be perceived by producers as being discriminatory. Producers would also argue for the lack of consultations with their countries/governments.

4.8.4 The Convention on International Trade in Endangered Species (CITES)

CITES is a multilateral agreement that seeks to control trade in endangered species of fauna and flora thereby preventing unsustainable trade. The Convention entered into force on 1st July 1975 with 80 member party countries. As at 2006 CITES has a membership of 169 partner countries (Brown and Swails, 2006). CITES has governments as parties to the agreement with ENGOs as observers. It is however increasingly dependent on the advisory role of ENGOs to the Secretariat.

The success of CITES implementation is to a large extent dependent on national governments and their effective enforcement of domestic laws. Unlike forest certification which targets export markets and uses nongovernmental channels, CITES is very dependent on governments and controls at the national level which in turn will influence the domestic market.

CITES uses a permit and licensing system to regulate trade in endangered species. The permit is applied to a three tier listing as follows:

Appendix I: List of all species threatened with extinction or may be affected by trade. Appendix I species require both an export and import permit by a management authority and only after the issuance of a non – detriment finding by the designated Scientific Authority stating that the export will not be detrimental to the survival of the species being exported. For appendix I species an export license is not granted until an import permit is obtained. This allows for control at the producing and the importing end.

Appendix II: This list covers species not currently threatened with extinction but may become endangered if commercial trade is not strictly regulated. Appendix II species require an export permit only. However, it is expected that the Scientific Authority monitors and reports on the status of the species such that it can control the extraction of the species and stop its trade when there are indications that the species is threatened with extinction.

Appendix III: These are species listed by range states (producer countries) or individual countries that require the cooperation and support of other countries to

control trade so as to prevent over exploitation within their borders. Appendix III species only require a certificate of origin for commercial trade in the species.

The listings of commercially important timber species currently cover twenty (20) out of 135 regularly traded species (Brown and Swails, 2005).

The institutional structure to support CITES has at its apex the Conference of Parties (COP) that is the representatives of National Governments that meet once every three years to review the CITES listings and progress of their implementation. The Standing Committee of COP is the executive body of 14 regional representatives from the five continents that meet to ensure inter-sessional coordination. The Standing Committee has two Technical committees – the plants and animals committees that provide advice to the COP.

The Model used by CITES is based on the following:

- The willingness of all parties to track the movement of listed species crossing their national borders by verifying the origins of the species and authenticating the validity of the certificates. This is premised on a self regulatory treaty that uses national legislation (Brown and Swails, 2005)
- Annual reports used to monitor progress and to identify gaps in implementation of CITES (www.cites.org, 2007).
- CITES secretariat works with national government to strengthen their national legislation to regulate trade in endangered species.
- Self reporting by countries complemented by intelligence and information from ENGOs and the secretariat.
- Exports governed by a permit system and issued by the designated National Authority. Permits have security features such as stamps or seals. Permits also use a numbering system to facilitate tracking of shipments.
- Encourages the exchange of information between exporting and importing countries through their customs agencies.

Brown and Swails, (2006) cite Young, (2003) reporting that CITES success is dependent on the political will of governments in documenting information on domestic implementation and encouraging remedial actions. This model uses the strong role of governments. However, the dependence of the political will of governments in the tropical timber producer countries is a source of concern in the

model given that the private industry sector in developing countries is usually able to influence the political leadership as a result of their very strong lobby.

4.8.5 Fisheries Certification

In the fisheries sector, product certification and eco-labelling are considered tools for the sustainable management of fish stocks (Wessells *et al.*, 2001). The aim is to create markets based on incentives for better fisheries management and to reduce illegal and unregulated fishing. In this sector, product certification is a measure that is driven by governments and mutually agreed upon to report all legally landed fish that is traded and sold both on the domestic and international markets. This is a variation from the certification process in the forest sector which is driven by the NGOs instead of governments. Secondly, in the forest certification process there are no mutually agreed measures or systems. Product labelling in the fisheries sector does not necessarily involve the retail level but for timber the “on product” label at the retail level is important.

The global agreements that govern fisheries management are the UN Convention on Law of the Sea (2001) and UN Agreement on Conservation Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (1995).

The institutional arrangements for fisheries certification include the following;

- Defining the scope of the certification process.
- Establishing standards for fisheries management and for the accreditation of certifiers.
- Developing procedures for the chain of custody.
- Costs of certification.

In the fisheries sector, certification is used as a monitoring and enforcement activity. Some examples of schemes in the fisheries sector include:

- Marine Stewardship Council (MSC) – Its equivalent in the forest sector is the FSC certification. Similar to the forest sector, the MSC is an independent international non-profit making body that has its head office in London. It is collaboration between an ENGO (WWF) and the Private sector (Unilever) to promote sustainable and responsible fisheries management and processing globally. MSC have established Principles and Criteria to guide the

management and production of sustainable fish. It undertakes independent third party certification. MSC is not itself involved directly with the certification but accredits third parties to undertake the certification.

- Nordic Technical Working Group on Fisheries Eco-labelling – This is a voluntary certification based on FAO Code of conduct that provides technical guidelines for fisheries management. It has been developed for use in the North Eastern Atlantic Region.
- The Marine Aquarium Council (MAC) – A non-profit international organisation based in Hawaii, USA. Membership is from the aquarium industry, conservation groups and governments and it is involved in the conservation of coral reefs through its standards and awareness creation programs. Accreditation is awarded by MAC to third party certifiers.

These approaches in the fisheries sector have to a large extent involved governments. An important aspect in the fisheries sector is also the collaboration between the ENGOs and Private Sector. In the forestry sector this has been difficult until recently and there is suspicion and mistrust between the industry, environmental groups and governments. The fisheries sector also appears to have a common understanding in respect of standards in use in the certification of fisheries management. Harmonized standards and mutual recognition of standards in the fisheries sector is an advantage.

4.8.5.1 Monitoring fish exports from Ghana to the EU

The EU introduced rules and regulations in order to guarantee fish and fish products exports to the EU are safe for human consumption Bird *et al* (2006). The model used and lessons learnt from this are as follows:

- Bilateral agreement between the Governments of Ghana and the EU on behalf of their member countries.
- Health certificates to be issued by an appropriate government agency, in this case the Ghana Standards Board – a government agency.
- EU and Ghana agree on competent National Authority.
- EU retains the right to conduct in-country audits of standards.
- Exports to use only entry points with official fish inspectors.

The introduction of these procedures has prompted a significant reduction in the number of exporters from 2000 to 29 exporters (Bird *et al.*, 2006) with this fall being attributed to the cost associated with compliance. This they contend has

displaced the SMFEs in the fish sector that were mainly responsible for exports from Ghana to the EU. Bird *et al.* (2006) further report of a drop in the domestic market price of fish through the availability of fish on the domestic market. This has lessons for the forestry sector given the current engagement of the EU and Ghana in Voluntary Partnership Agreement on timber to keep out of the EU market illegal timber.

4.8.6 Cocoa Certification

Concerns were raised on the use of child labour on cocoa farms in West Africa. These farms provided raw material for the production of chocolates. To address these concerns the cocoa industry worked with U.S Senator Tom Harkins and U.S. Representative Eliot Engel to develop an industry wide solution to the problem. Certification was perceived as one of several key approaches to address the problem of child labour on cocoa farms in West Africa (www.cocoaverification.net, 2008). The chocolate and the cocoa industry therefore cooperated in working towards providing a better life for cocoa farming families worldwide. This involved a partnership between governments, NGO's, labour experts and industry to implement certification for cocoa farming labour practices as part of its broad objective of promoting economic and social development within cocoa farming communities (www.cocoaverification.net, 2008). This was meant to ensure that cocoa was produced using responsible labour practices. Although initially the governments of the West African cocoa producing countries indicated that this was a cultural practice, they have in the last two years cooperated with the cocoa industry and NGO's to implement the certification scheme. The scheme involved the production of reports through studies on child and adult labour on cocoa farms by governments. The reports are produced by independent verification bodies to ensure the integrity of the process.

The approach adopted under cocoa certification is as follows:

- Agreeing on clarity of definitions and procedures for cocoa certification. This is a missing gap in the forest certification process where governments are not involved in the consultation process in most schemes, particularly the FSC.
- Draw on the examples of other certification and verification systems
- Strong role of local governments, NGOs.

- Costs were not passed on to the farmer/ producer. This is not the case in forest certification.
- Provided guidance handbooks for verification and encourage third party feedback mechanisms.
- Offer a parallel process feedback from those not engaged in the verification regime and provide opportunities for correction.

The cocoa certification process used a multi-stakeholder governance structure as a driver for establishing a credible verification system. Key features of the certification model are the need for efficiency, transparency, credibility, sustainability, financial independence and the engagement of multi-stakeholders.

In deciding on a model the cocoa industry looked at two approaches, namely the “Centralised accreditation model” that is being used by the Fair Labour Organisation and the Social Accounting International. Under this model private auditors such as Société Générale de Surveillance (SGS) apply for accreditation. The challenge for this approach has been the engagement of not for profit organisations and private profit organisations. The other model that was considered and adopted is the Multi-stakeholder Team Model where independent organisations appoint a group of independent monitors that work on a contractual basis. The organisation not involved in the verification process accredits the verifier. This allows for stakeholders to be part of the verification process and provides for strong ties with the stakeholders.

Under this scheme the strong point is the government and multi – stakeholder engagement. The approach to verification and certification is the collection of information from the cocoa farm on labour practices and related issues. Based on the information the Government issues a certification report that provides a detailed review of labour issues in the cocoa farming sectors and identifies actions required to address the issues. Credibility and transparency is achieved through independent third party verification.

4.8.7 Palm oil Certification – Round Table on Sustainable Palm Oil (RSPO)

The RSPO was formed in 2004 by the private sector and WWF with the objective of promoting the growth and use of sustainable oil palm products through credible global standards and engagement of stakeholders (www.rspo.org, 2010). RSPO certification involved multi-stakeholders from industry, NGOs (both social and

environmental), banks, investors, growers and manufacturers. The approach adopted by the oil palm industry emphasizes cooperation along the supply chain and unlike in forestry provided the opportunity for dialogue and collaboration. The process adopted by the RSPO was for an initial period of two years to allow for field testing of criteria and indicators so as to provide guidance for continued improvement. From the onset the RSPO took onboard the challenges to small oil palm producers.

The criteria and indicators for the certification of oil palm have adopted the three pillars of sustainability, namely, economic, environmental and social. These have been used in the development of the criteria and indicators. RSPO has an Executive Board made up of representatives from the various stakeholders (7 sectors of the oil palm industry) as follows:

SECTOR	NUMBER OF SEATS
Oil Palm Growers	4
Palm Oil Processors	2
Consumer goods manufacturers	2
Retailers	2
Banks/Investors	2
Environmental NGOs	2
Social/development NGOs	2

Table 4.5 RSPO Executive Board

Unlike the forestry sector and in line with the approach adopted by FSC in forestry governments have not been involved but this may be largely due to the fact that the private sector is the main grower of oil palm as against timber that has strong government ownership in managing the forests.

Third party verification is undertaken by RSPO accredited certifiers. Cost of certification is borne by the company importing the oil palm or the company making the request, hence unlike that of forest certification the cost is underwritten by the buyer and not the supplier. There is also evidence that for oil palm a premium is paid for RSPO certified products and RSPO through its communications working group that provides tools in support of its members to market certified oil palm.

The 8 principles and 39 criteria used in oil palm certification are similar to those used in the forest sector. In situations legality, economic and social values and workers rights are considered important. A major difference is the explicit principle on transparency in the oil palm certification system. RSPO was introduced to minimize the proliferation of many schemes. RSPO does not cover genetically modified (GM) oil palm. RSPO anticipates that GM palm oil will not be in the market for several years. However, there is no definite statement to exclude it. It is silent on its future position on GM. This reinforces the collaborative nature of this sector compared to the adversarial nature of the forest sector.

The oil palm certification also has used the phased approach. First it adopted a two year trial period and then used the following options in the supply chain for certification of sustainable oil palm:

- Option 1 – This product contains RSPO certified palm oil
- Option 2 – This product contain $x\%$ RSPO certified palm oil
- Option 3 – This product supports the trade in sustainable palm oil

This approach allows for continuous improvement that can be undertaken in phases and shows a high level of flexibility in the market.

These private initiatives, such as the Lacey Act, the Kimberley Process, CITES Cocoa and Oil Palm certification, have sought to control illegal production and trade in natural resource and their effectiveness is acknowledged. These have to a large extent involved governments in the broad stakeholder consultations. These are models that offer lessons for the forestry sector and any approach to developing a model for forest certification in Ghana should take into account these experiences. Hence these lessons in the implementation of the initiatives from other sectors will feed into the development of the questionnaire for the research work.

4.9 Development of forest certification in Ghana

Forest Certification and its associated product certification is taking a global dimension in the light of emerging issues at the various international fora such as meetings of the UNCED, United Nations Forum on Forests (UNFF) and the International Tropical Timber Organisation (ITTO). The development of the ITTO criteria and indicators had provided a basis for SFM in the tropics/member countries of ITTO in line with its Objective 2000 (Poore, 2003). ITTO Objective 2000 encouraged member countries to attain trade in wood products from

sustainably managed forest by the year 2000. This led to a number of policy changes and the adoption of a number of guidelines for achieving SFM in member countries of ITTO to achieve SFM. This was in reaction to the alienation of governments from the FSC process that was geared towards concerns of northern consumers (Forestry Department, 1996).

For Ghana this required major policy changes and resulted in the introduction of the Forest Policy of 1994 and the Forestry Development Master Plan of 1996 (Donkor, 2003). These changes were targeted at creating a balance between resource base and industry and curbing the over-exploitation and destruction of forest resources, poor forest management and unsustainable utilization of timber resources that characterized the forestry sector in Ghana (MLFM, 1996). Factors that have contributed to the unsustainable use of Ghana's forest have included weak and outdated concession rules, poor enforcement of forestry regulations due to resource gaps and commitment of forestry personnel, inefficient forest management policies and ineffective implementation of policies and management prescriptions (MLFM, 2005).

To address these problems, the government took the lead role and organised a national stakeholder forum in 1996. The forum agreed that certification should be embraced as an important tool in forest management and accountability and certification was perceived as a means of gaining access to Ghana's major markets which are environmentally sensitive. Ghana therefore viewed certification as a strategic marketing policy that would impact on Ghana's future trade in wood products. This initiative was government driven with the objective of implementing a national certification scheme.

However, given the resistance to government role and the lack of resources the process became dormant.

The re-launch of the National Working Group (NWG) in 2002 and the support received from the FSC regional office located in Ghana is casting doubts on the neutrality of the NWG. The lack of support from the central government to the NWG tends to reflect the weak political commitment of the Ghana government in advancing certification in Ghana (Teketay, 2005). Teketay (2005) identifies poor

communication and weak structures for disseminating information in Ghana as a constraint to promoting forest certification.

Major progress has been made in Ghana with the establishment of the producers group under the GFTN. Four companies that account for about 40% of Ghana's timber exports are members of the producers group. The GFTN – producers group, Ghana has received technical support from WWF and financial support from the Department for International Development (UK) (DFID). It is evident that this initiative has not targeted the SMFEs for support and engagement. As at December 2010, only 3 companies had received FSC certificates for controlled wood. None of the Ghanaian companies had as yet received certificates for sustainability. The key milestones in Ghana's efforts at forest certification is shown in Table 4.6 and the detailed road map in Appendix 3

Date	Activity	Major outcomes
November 1995	Launching of Ghana the Ghana certification process	Adopted and initiated a certification process through stakeholder consultations
August 1996	Establishment of National Committee on Certification (NCC)	Ministry of Lands and Natural Resources mandated NCC to coordinate the development of a credible certification scheme
December 1997	Publication of draft Standards Document	Technical Working Group of NCC publishes standards, principles, C&Is documents
November 2000	Forest Management Certification Standards and Check list – Version 4 published	Revised standards reinforce forest management standard and facilitates its application in the field
April 2004	ITTO & ATO Project PD 124/01 Rev.2(M) implemented	Harmonization of Ghana Standards with the ATO C&Is
May 2005	Forest Management Certification Standards and Checklist – Version 5 published	Harmonization of Ghana standard with FSC, ATO/ITTO Principles, Criteria & Indicators
April 2007	Ghana Forest Certification Standard developed in FSC format	Stakeholder consultations on Ghana standard in the FSC format to facilitate FSC endorsement
July 2010	Submission of Ghana standard to FSC for endorsement	Awaiting endorsement and formal communication from FSC

Table 4.6 Ghana Road Map for Certification (National Working Group, 2005)

4.9.2 Constraints to Development of forest certification in Ghana

Despite efforts at certification within the decade Ghana is yet to see its forests certified as sustainable. From literature reviewed the following are constraints to Ghana developing and implementing a certification scheme:

- **Absence of political commitment** – though Ghana’s Forest Certification scheme was driven by the government of Ghana in its desire to respond to its international commitments and SFM is contained in its forest policy and forestry development plan, it has neither provided resources nor guidance to forest owners or industrialists in Ghana. It has also kept the ENGOs at an arm’s length. ENGOs have complained of the lack of a consultative process on forest certification related issues in Ghana (FERN, 2005). Interestingly political

commitment for sustainable forest utilization and management and the maintenance of multiple functions of forest is Principle 1 of the Ghana Forest Certification Standard.

- **Lack of clarity in the objectives of certification** - Ghana appears not to have a clear strategic choice on its reasons for engaging in forest certification. On the one hand it appears to reflect its desire to enhance its forest management practices. On the other hand, it appears to be reacting to market requirements. This is reflected in its current shift away from putting in place a system for forest certification to that of a legal assurance/validation of timber system which targets access to markets and improved flow of revenues to central government treasury from timber production and exports. This could also be its reaction to purchasing policies being introduced by the EU and the call by the donor community for improved governance and transparency in the forestry sector.
- **Land tenure** – Land tenure under the current legislation (Act 124 of 1962) continues to be a core issue in that land in Ghana is vested in the President. Bird *et al.* (2006) recognise the complexity of land and tree tenure in Ghana and report of the difficulty in gazetting the *Dede* Forest reserve. This forest was first proposed for gazetting in 1935 but was only gazetted twenty years later due to disputes of land tenure. Bird *et al.* further cite Hawthorne and Abu-Juam (1995) as stating that *Dede* Forest reserve has since disappeared.
- **Lack of capacity in the private sector to undertake certification** - the ENGO community is poorly resourced and without donor funding is unable to play their watchdog role, thus affecting governance structures in the forestry sector in Ghana.
- **Recognition of national schemes** - Difficulty in getting the national scheme to be recognised by the existing international certification schemes. Although Ghana has itself harmonised the standards with the FSC, PEFC, ATO/ITTO PCI's it is yet to submit its standards for endorsement by the FSC and PEFC. These external agencies have not been engaged in the process of harmonisation. This reflects the poor flow and exchange of information in respect of certification in Africa (Teketay, 2005).
- **Lack of clarity in the type of scheme**, i.e. national versus international to be used in Ghana. FSC is supporting the national initiative in Ghana. However the NWG is yet to communicate to industry its strategy for certification in Ghana.

The research will therefore seek to establish industry's knowledge about forest certification.

- **Communication** - Poor communication of progress of forest certification in Ghana. For instance, Abenney (2005) indicate that Ghana has embarked on a stepwise approach to forest certification. He reports that two companies, namely Samartex and Ghana Primewood, have developed Action Plans while three other companies, namely John Bitar Co. Ltd., Suhuma, and Ehwia Wood Products Ltd⁴ have undertaken baseline studies. However the literature reviewed does not acknowledge Ghana as adopting a phased approach and its standards do not indicate which elements will form the phases and how many phases are to be undertaken in the proposed phased approach. This is a source of confusion in respect of communication to the market and consumers. Abreu and Simula (2004) state that clear communications, including commitment made by producers, are important. Producers are also not aware that Ghana is adopting a phased approach (Ghassan, 2006). This apparent lack of awareness is one of the practical challenges facing the adoption of forest certification by forest owners (Ozanne and Vlosky, 1997; Rickenbach, 2002).
- **Differences in the types of forest in Ghana** – Ghana has two types of forest areas, namely, reserved forests and outside reserve forests. These have differences in management practices. Outside forest reserves are not intended to be managed sustainably and there is a liquidation policy for such areas. FSD (1996) provides guidance in respect of the differences between the two groups in Table 4.7.

⁴ . As at the December 2010 Ehwia Wood Products Ltd had been liquidated.

Key certification requirements	Forest Reserves (FR)	Outside Forest Reserves (OFR)
Tenure	Land and trees owned by traditional authorities, corporate and private persons. Land and forest vested in the President on behalf of the landowners.	Land in private or traditional ownership. Trees vested in the President. Rights to planted trees belong to the planter.
Land use	Natural Forest	Agriculture (farms, fallow, tree crops)
Policy	Sustained yield based on polycyclic selection logging and natural regeneration.	Non-forest land uses take precedence. Liquidation as policy. No management plans.
Policy instrument	Strict regulation and control. Sanctions applied.	Timber Utilization permits granted for short term (1-5 years)
Planning	Management plans are the responsibility of the FSD. Operational plans are prepared by contractor within confines of the TUC.	Operational plans provided by contractors and landowners. No formal plans for unencumbered.
Standards	Compliance with logging manuals and obligations of TUCs	Compliance with logging manuals and TUCs/TUPs. Interim measures that require the approval of the farmers prior to exploitation.

Table 4.7 Differences in the types of forest in Ghana (FD,1996)

Off reserve forests are not managed on a sustainable management basis and there is no likelihood that such forests can be certified. Hence this area can only obtain legal status but not sustainability status.

The traditional land ownership structures (communal) do not promote land tenure, which is a requirement for forest certification. In Ghana this poses some problem in gaining acceptance by some international schemes that require long-term ownership by the forest owner. This has legal implications and may call for a review of existing laws. Secondly, reviewing the laws could also infringe on the rights of the forest owning communities who have always had communal ownership of the land and could be a possible source of conflict. The challenge for certification would be the ability for various certification schemes and standards to balance this requirement.

From Table 4.7, It is evident that management plans are the responsibility of the Forest Service Division (FSD) of the Ghana Forestry Commission. Certification requires that management plans are written by the forest owners (Proforest, 2005). In a review of forest practice and certification status in Ghana, Proforest (2005) found a wide gap between current forest management (policy, planning and implementation) and the requirements of FSC and for which the writing of management plans by FSD, a public sector agency, was identified as a major gap. This review also identifies the following issues:

- Financial resources to promote certification in Ghana are lacking. Forestry competes for resources with other sectors of the economy such as health and education. The private sector, on the other hand, prefers to invest in other sectors of the economy that have higher returns. Timber companies who may want to pursue certification will find the extra costs prohibitive since most of the companies in the Ghana forestry sector are SMFEs.
- Low literacy levels in Ghana do not promote documentation, particularly for the small and medium sized enterprises. Documentation is a requirement for certification, in particular FSC certification.

The major challenges to certification in Ghana as identified by pre-assessments conducted by leading certification bodies include the following:

- Delay in the conversion of leases into Timber Utilisation Contracts (TUCs) in line with current laws and regulations. With the passing of Act 547, timber producers that owned concessions were required to within six months convert the concessions to TUCs. This has not been done hence all operators that hold concession agreements and still operating are perceived to be operating illegally.
- Management planning for both natural and planted forests (Lack of documented management plans) are not available because they are yet to be approved.
- Existing yield allocation model not adequately adapted to forest conditions.
- The uncontrolled use of exotic species for reforestation in forest reserves.
- Lack of monitoring of forest growths to validate Silvicultural assumptions and establishment and maintenance of functional Permanent Sample Plots (PSP) network.

- Social responsibility agreements not meeting required formats and exclusion of settler communities in drafting and negotiation procedures.
- Setting aside representative samples of forest types and High Conservation Value Forest (HCVF) and the basis of conservation areas in Ghana.

4.9.3 Certification and SMFEs in Ghana

Development of forest certification has focused on the large scale enterprises. This is a reflection of the international attention in forestry for improving the conditions of large scale forest enterprises (Sun and Chen, 2003).

Ways need to be found by which small and medium-sized forestry enterprises can better contribute to forest certification in Ghana so as to improve the prospects for sustainability. SMFEs are largely “invisible economies that get ignored in most policy development (Thomas *et al*, 2003). This is reflected in the process of forest certification. Standards developed which have not reflected the needs of SMFEs. This is supported by various authors that report of difficulties of SMFEs on achieving forest certification (Baharuddin and Simula, 1996; Thornber *et al.*, 1999; Meidinger, 2003).

There are many definitions for SMFEs which usually covers some or all the characteristics of SMFEs such as number of employees, revenue and turnover, range of products, markets etc. (Carson, 2003). Definitions of SMFEs even within a country have varied. In Chile companies are classified according to their turn over; in South Africa, SMFEs are classified by turnover, gross asset value and number of employees; while in India any industrial concern with fixed assets less than 10 million rupees is classified as an SME (IISD, 2004).

In the USA, SMEs are defined as any firm that employ 500 persons with annual sales of less than \$5 million. In Japan the SMEs are considered to be companies with less than 300 employees and with a turnover of less than \$300 million.

The UK Companies Act 1985 defines a company as an SME for its first financial year if it meets two of more of the following requirements in that financial year. Once a company has qualified as an SME it will continue to be one unless it fails to meet two or more of the requirements for two years in a row. Where a large company reduces in size to become a small or medium-sized company, it must meet two or more of the requirements for two successive years. Companies with turnover

of £5.6 million and employees of no more than 250 are considered to be SMEs (www.proquest.umi.com, 2006).

Rickenbach (2002) on the other hand defines small-to-medium sized forest industries as those having less than 1000 acres.

In Ghana the National Board for Small Scale Industries (NBSSI) define SMEs as companies that employ between 9 and 29 workers, have fixed assets excluding land and buildings that do not exceed US\$100 000. The Association of Ghana industries on the other hand define SMEs as those employing up to nine workers (Daily Graphic, 2004).

It is evident that there is no clear definition for SMFEs (Gibbs, 1993). There is a multiplicity of definitions for SMEs due to the nature of the SME environment. In developing countries there are said to be over 50 definitions of SMFEs (PEF, 2004).

Others such as the European Commission (EC, 1992) argue that it is the policy intervention which matters rather than the definition. For the purposes of this research the author will be guided by policy issues such as promoting certification in SMFEs as well as the characteristics of SMEs such as revenue, number of persons employed, forest area and mill capacity amongst others.

There is a general agreement that SMEs form the bedrock of most African economies; however financial support for them is limited (Baah-Wiredu, 2006). Sraha (2003) also cites micro business as the engine of growth but argues that it is a general practice for new governments to make lofty promises to support SMEs. However immediately the governments settle down after assuming power, they forget about their promises and pay only lip service and nothing is done to support or improve the conditions of the SMEs. PEF (2004) argue that the legal framework in Ghana does not provide assistance to SMEs and these SMEs are therefore constrained by:

- Finance, since they are not credit worthy as a result of their low asset base
- Technology, since a low financial base does not allow them to invest in technology. For the forest industry and forest certification it will be difficult for

the SMEs to acquire technology to support the tracking of their material. This research will therefore seek to examine the effect of the technology gap

- Marketing, since marketing is not well developed in the SMEs. There is the lack of market information and the ability to track market changes. This would be examined to establish its effect on the ability of the SME to adapt to certification due to the lack of market information on the demands and requirements of the market. This could imply the lack of knowledge on global trends which Sraha, (2003) identified as a constraint facing SMEs in the Accra-Tema Area of Ghana.

4.9.4 Certification Initiative for SMFEs in Ghana

The Centre for the Promotion of Imports from Developing Countries (CBI) of the Netherlands, in collaboration with the Timber Industry Development Division (TIDD) of the Ghana Forestry Commission is implementing a project that seeks to promote timber and timber products from sustainable sources in Ghana to the European Union market.

Under the project, awareness is created for timber certification and the participating companies are offered assistance to achieve certification to enable them trade certified wood products. The project is also expected to make it possible for participating companies to write their own forest management plans, a requirement under the FSC standards and scheme.

There are six participating firms made up of SMFEs (ProForest, 2005). These firms have been introduced to the concept of clustering as a means of creating the critical mass for SMFEs to enter and retain their positions on the export market. This cluster of SMFEs is called the Kumasi Wood Cluster (KWC). Under the project it is expected that the estimated cost of certification for the KWC would be in the region of US\$5000 per year for a 30 000 ha forest concession.

Sponsorship of the project is from CBI, DOEN Foundation and the Inter-Church Organisation for Development (ICCO). The donors require participating companies in the cluster to indicate their willingness to be FSC-certified. This can create a difficulty if the national standards do not harmonise with those of the FSC. Participating firms will be compelled to obtain certificates based on two systems which would end up being costly. Simula *et al*, (2004), argue that costs due to certification continue to be a key issue for producers.

The FSC based certification project for KWC is expected to use the Modular Implementation and Verification modules (MIV).

A scoping study by ProForest, (2004), shows that there is inadequate capacity for SFM certification implementation. This study identified as a weakness in Ghana the policy of the Forestry Commission to write management plans for the concessionaires. The study summarises its evaluation of certification in Ghana as:

“Forest Certification has proved to be very challenging in many respects for Ghana (and indeed Africa) and there are no easy answers to addressing these challenges by the forestry sector. However it has been recognised that one of the effective ways of overcoming certification challenges in Ghana is by implementing initiatives such as the KWC or the Producer Group Initiative that is capable of providing model examples for the forestry sector.” (ProForest, 2004)

It is clear from the above statement that there are challenges to implementation of forest certification in Ghana. The KWC model of clustering SMFEs to take advantage of cost reduction is good, however in the Ghana situation where forest concessions (FMU's) are widely spread amongst group members and the volumes of harvest permitted per group member relatively small and spread one wonders the cost advantage gained in the group certification.

ProForest also found the project time frame of two years to achieve forest certification for these companies as unrealistic and was of the view that companies must adopt a phased/stepwise approach to forest and product certification. Participants of the KWC have agreed to use the MIV concept to facilitate stepwise progress towards certification though ProForest was of the view that MIV is not well understood. This will however be based on the FSC scheme rather than the national scheme. As at August 2010 none of these companies had achieved certification and the project has stalled.

4.10 Barriers to forest certification in the tropics

Becker (2005) defines a barrier as *“any element whose presence greatly hinders the establishment of forest certification in a particular country or region. The identified barriers are classified as either direct or indirect. Direct barriers are those that are explicitly and singly responsible for the inability of forest certification to be*

launched in a country, and should be addressed first in any implementation strategy".

Some of the direct barriers include:

- **Tenure security.** These could be defined as tenure security, social and political conflicts involving the use of forest resources. Various certification schemes such as the FSC require “*long term tenure and user rights to the forests be clearly defined, documented and legally established*”. This ensures that the forest is not mined but that forest owners, knowing that they have long term tenure will be interested in conserving the forest. This thinking may not be valid given that the objective of the forest owner is usually not known and even if known his priorities may differ from that of sustainable forest management. Kishor and Constantino (1993); Becker (2005) Gullison (2003) all cite insecure tenure rights as a factor that greatly favour forest conversion over long term management for sustainable timber production. Land tenure in regions such as Asia and Africa is problematic due to the presence of undocumented land ownership or because land is in the hands of the state. This to a large extent has been influenced by the colonial administration who sought to have control of lands. This situation has not changed and land acquired by the colonial administration has not reverted to the owners. In Ghana this situation was made more critical under the Concessions Act of 1962 (Act 124) when all timber lands both in the reserved and off reserves forest areas were placed under the jurisdiction of the President (Bird *et al*, 2006). Hence the local populations have been disenfranchised and timber originating from such areas will not qualify for forest certification under the existing forest certification schemes.
- **Governance** – Becker (2005) and Gullison (2003) argue that the lack of democratic dialogue, political instability and inequality in the distribution of benefits serve as barriers to forest certification. This is also a major constraint in the legal requirements for the Voluntary Partnership Agreement with the EU. In a recent meeting in Ghana the chiefs (landowners) raised concerns in respect of the benefit sharing between the landowners and the state. With the state taking about 60% of the stumpage. There is usually also the lack of broad stakeholder consultations sometimes due to the absence of formal groupings of the stakeholders thereby making identification and engagement of the stakeholders difficult. This sometimes results in the disenfranchising of some key stakeholder groups resulting in weak forest governance. Political instability in

areas such as the Democratic Republic of Congo and Liberia has also resulted in breakdown of governance in these countries leading to increased illegal logging that does not support SFM. This assertion is supported by Richards *et al.*, (2003) who argue that the over complex regulations and market competition from cheap illegal timber reduce the economic viability for operating legally. Under such circumstances it is near to impossible to engage the actors in a consultative process given that they do not operate legally.

- **Difficulties to raise awareness** about forest certification amongst all stakeholders. Durst *et al.*, (2007) and Rickenbach (2002) cite the apparent lack of awareness as one of four practical challenges facing widespread adoption of forest certification by private forest landowners. This lack of awareness is pronounced in small-to-medium sized forest enterprises. On the other hand large-scale enterprises tend to have the networks and information required to understand certification (Ramesteiner and Simula, 2003). This lack of awareness in the developing countries could be linked to the poor communications infrastructure and the lack of marketing planning in companies (Karna *et al.*, 2003).
- **Stakeholder engagement** -Implementation of forest certification in the last decade has been based on non-state and market driven approaches. ENGOs and industry from the developed countries are driving the certification process. They have set up partner ENGOs in developing countries to drive the certification process. However these ENGOs tend to be confrontational and do not receive the support of governments in the developing countries. Developing countries, in particular, tropical countries, have governments driving the certification process. For governments, certification and ecolabels offer soft policy instruments to promote environmentally sound practices through demand-side responses (Stevens *et al.*, 1998; Eba'a Atyi and Simula 2002).
- **Poor forest sector policies** – Durst *et al.*, (2007) cite the weak ability to formulate appropriate forest sector policies as a key challenge to the effective implementation of forest certification in the developing countries. They cite ineffective implementation and enforcement of legislation. Weak governance structures have promoted corruption and fuelled illegal logging.
- **Costs** – Simula *et al.*, (2004) argue that forest certification should be financially viable for tropical timber FMUs to justify investments. This assertion is

supported by Gullison, (2003) who cites the lack of incentives as a barrier for producers to pursue forest certification, particularly in the tropics where costs of improving management of forests to meet FSC guidelines are significantly greater than the support they may receive.

- Simula *et al.* (2004) however, view a phased approach to certification as a means of reducing cost and economic barriers to certification. Although cost data found in the literature are limited, Simula *et al.* (2004) undertook studies and concluded that total costs related to certification could range from US\$50,000 to US\$575,000. Gullison (2003) cites certification costs do vary from 2-3 cents/m³ in the USA to US\$4/m³ for SMFEs in Latin America. Although this reflects differences in the size of the companies Gullison fails to indicate how much of the cost is attributable to the type of forest or the location of the forest, i.e. tropical or non-tropical. Becker (2005) examines the cost from the management practices of forest owners and argues that for small-to-medium sized firms where forest management practices are usually poorer the cost of certification is higher. For large scale enterprises, Becker, 2005, argues that the economies of scale allow them to absorb the costs of new technology, expertise and management, thereby decreasing the total cost of certification.
- Costs of certification are of two types. The direct costs of certification that is the process itself and the indirect cost which is the cost required to change management to meet sustainable forest standards (Bass *et al.*, 2001). Direct costs generally represent 8-41% of the total cost of achieving certification (Simula *et al.*, 2004). Direct costs accrue through the time and effort associated with one to three professionals conducting a one-to-three-day site visit, their travel, office time for writing reports, and the certifying organization's oversight. The direct costs of certification are relatively low for large industrial managed operations and relatively high for SMFEs (Gullison, 2003). Indirect costs, on the other hand, include the landowner's time, effort, and money spent preparing for the certification.

Indirect barriers to Forest Certification in the tropics are as follows:

- **National value of forests (e.g. cultural values).** Becker, (2005) states that countries that have forests accounting for a high proportion of their GDP and are representing an important contributor to the socio – economic wellbeing of the country are more likely to move towards forest certification. This assertion is not reflected in the current trend where in many tropical timber

producer countries there is slow uptake of forest certification. Becker argues that the importance of the sector in creating employment and deriving economic benefits should encourage the country to protect its forests and move towards forest certification. Though this sounds reasonable the literature reviewed and statistics available do not generally support this assertion. For instance, forest is a major player in the economies of many a developing country however certification has been slowest in these areas. There is merit in the assertion by Nussbaum and Simula, (2004) who have argued that companies with ISO standards in place are more likely to move towards forest certification due to the lower cost in implementing procedures to achieve certification.

- **Lack of harmonization of standards** - Becker's research using FSC standards was a limitation to identifying the standard related barriers. It is generally acknowledged that the FSC standards are high and rigid and with a tendency to eliminate the SMFEs. It does not also favour the tropics and tropical timber countries have been slow into adopting the FSC standards. Thornber *et al.*, (1999) indicated that developing countries and small enterprises are underrepresented in the FSC scheme while the ISO certification is dominated by industrial enterprises. However the critical point is the use of different standards by timber certification schemes. At the 40th Council Session of the International Tropical Timber Council meeting held in Mexico from 29th May to 2nd June, 2006, the Trade Advisory Group encouraged the different schemes to “move towards mutual recognition of each other. Conformance to so many different standards set by countries (schemes) is perceived as a stumbling block for producers as well as consumers.”
- **International influence and initiatives** – Becker, (2005) cites the development of certification to have been influenced by donors, governments and international markets. Thornber *et al.*, (1999) on the other hand state that the current trend remains for certification to be predominantly driven by Northern industrialised countries or developed countries. International markets that are responsive to environmental concerns have driven the demand for certified wood products. Demand for certified products is high in Europe and North America. The lack of demand for certified products in developing countries provides no market incentive for investment in certified products (Burst *et al*, 2007). The process of certification focuses on the export market only Thornber,

et al., and (1999). International principles and criteria have been developed, however a large number of these standards are perceived to be of predominantly northern, industrial values.

- **Political will** - commitment by governments, particularly in the tropics has been low. Certification has grown in the tropics with support from donors or ENGOs. The lack of government support particularly for SMFEs continues to be a major constraint given their low level of resources. Brown and Swails, (2005) in their review of CITES also found that political will of governments was critical in ensuring the success of CITES permits system.
- **Role of Governments** – Governments, particularly in the tropics play a key role in forest management. However, current certifications schemes undertaken by non-state actors are not engaging governments as key stakeholders. Adu, 2007 has highlighted this challenge in his attempts to promote forest certification among SMFEs in Ghana under group certification. Adu, 2007 recognises the influence of the Ghanaian government in forest management and regulation and concludes by the statement “*The reality in Africa is that forest management revolves around governments. Therefore introducing a new concept such as certification would be slow and difficult without receiving the support of government or the relevant public institutions*”. This can be viewed as reflecting the mistrust between the state and non-state actors that is not facilitating the promotion of certification in the tropics. Sometimes the militant role played by ENGOs in the developing countries have not helped in building trust with governments resulting in the lack of cooperation between these two principal actors.
- Lister, 2009 argues the importance of government involvement in forest certification in the USA given the extent to which state and federal governments in the USA own lands and are responsible for managing the forests. Lister therefore favoured the engagement of governments in the forest certification process, particularly in countries where government is a key stakeholder in both the management of the forest. However, there is also the argument that does not favour government being engaged in forest certification given that it is managing the forests and therefore require no involvement in the certification process since its involvement would represent government being the manager and regulator.

4.11 Emerging issues in Forest Certification

Certification embraces a wide spectrum of economic, social and environmental issues. In the absence of good progress in certification for sustainable forest management activities have shifted to focus in the following areas:

- Illegal logging
- Forest Law enforcement, Governance and Trade (FLEGT)
- Public Procurement Policies (PPP)

4.11.1 Combating illegal logging

The World Bank estimates that illegal logging can result in annual losses of about US\$ 10-15 billion annually (World Bank, 2002). Illegal forestry activities deprive governments of revenue. They also cause environmental damage, threaten forest and the livelihoods of forest dependent people (Kaimowitz, 2003). Discrepancies in trade statistics have been used to estimate the potential for illegal logging (Johnson, 2003). There is growing concern that corrupt and illegal forest activities directly undermine the objectives of poverty alleviation and sustainable development.

Johnson (2003) has indicated that poor governance and corruption undermines economic and social developments. Tacconi *et al.*, 2004 support this assertion and state that the debate on illegal forest activities has focused primarily on legal and governance issues. Economic forces, however, are increasingly recognized as fundamental drivers of illegal forest activities. Competition from cheap illegal timber reduces the economic viability of operating legally. This particularly affects small-scale producer groups leaving them vulnerable to economic capture by illegal timber traders.

Brack (2003) argues that illegal trade distorts the global market place for a number of key timber products, thereby making it difficult for sustainable forest management. Brack further proposes that strategies aimed at reducing the supply of illegal timber need to focus on the underlying economic, social and political drivers behind the illegal activities. The USA Lacey Act and the EU Forest Law Enforcement, Governance and Trade initiative are targeted at controlling illegal logging and trade in timber from illegal sources.

4.11.2 The Forest Law Enforcement, Governance and Trade (FLEGT)

Governments in their desire to address issues of illegal logging and control trade in illegal timber have sought to engage producer country governments to provide support for enforcement of their forest regulatory systems. The EU has proposed a FLEGT Action Plan that seeks to introduce a range of measures that will increase the capacity of producer countries to control illegal logging and associated trade (ODI, 2005). The Action plan also proposes the development of Voluntary Partnership Agreements (VPAs) with timber producer countries targeted at controlling illegal logging using a licensing scheme. The VPAs will be voluntary bilateral agreements between partner countries. Some EU countries are partnering producer countries to provide support and guidance for the negotiations with the EU on the VPAs. The UK and the Netherlands are partnering Ghana and Malaysia respectively.

The FLEGT process has been developed in response to concerns on illegal logging, poor governance and corruption in the forestry sector in producer countries. The poor governance and corruption in the forestry sector has resulted in the inability of forest regulatory institutions, in particular in the tropics to perform their regulatory functions resulting in unsustainable harvesting of timber. This unsustainable harvesting of timber further impoverishes the forest communities. This illegal logging and unsustainable harvesting of timber has also resulted in the loss of Government revenues associated with timber production (www.forestdialogue.org , 2006).

In May 1998 the G-8 launched an action programme on forests that placed high priority on the elimination of illegal logging and trade in timber and timber products (www.iisd.ca/sd/afleg/, 2006) This G-8 action programme resulted in partnerships on forest law enforcement between East Asia, the World Bank, the UK, and the USA. This led to the first FLEG ministerial conference in South East Asia in September, 2001. Other FLEG conferences have been held in Africa (2003) and Europe and North Asia FLEG (2005).

Since then the European Union has proposed a FLEGT Action Plan that seeks to introduce a range of measures that will increase the capacity of producer countries to control illegal logging and associated trade (ODI, 2005). The Action plan proposes the development of Voluntary Partnership Agreements (VPAs) with

timber producer countries targeted at controlling illegal logging using a licensing scheme. The VPAs will be voluntary bilateral agreements. The proposed VPA's will establish national timber licensing schemes that seek to provide markets for wood products from legal and sustainable managed sources into the EU. The national timber licensing schemes involve the issuance of export licenses for timber products from EU partner countries and enforcement of the scheme in the EU (Lounasvuori and Ali, 2006). The national timber licensing schemes cover commodity timber products, namely, logs, lumber veneers and plywood. However, some countries such as Ghana in its negotiations with the EU have sought to broaden the scope of the VPA to include value added products. Other countries such as Malaysia have proposed a narrow scope in their negotiations with the EU. The lack of uniformity in the scope of products will provide challenges in the implementation of the VPAs. Countries such as China who purchase raw material from the producer countries such as the Congo Basin countries in Africa for processing and re-export are not covered by the licensing scheme. This gives undue advantage to such countries that may be in direct competition with similar products from VPA partner countries.

Lounasvuori and Ali, (2006), report that the national licensing scheme has five components as follows:

- Legality of the wood production
- Chain of custody
- Verification/validation of legal timber
- Issuance of license
- Independent forest monitoring

The national licensing scheme requires that timber and timber products imported into the EU come from legally managed forests. The partner country under the VPA defines legality on the basis of its existing legislation. This definition should be arrived at under a consultative and participatory approach with all stakeholders that include local communities, forest authorities, environmental groups, indigenous people and the wider public. This process is consistent with the first phase of forest certification under the phased approach where legality is viewed as the first phase. However unlike certification the national licensing scheme does not have all the components of forest certification and will by itself not result in sustainable forest

management. Secondly the VPAs do not target the domestic market and illegal trade in wood product could still continue on the domestic market. This will not help with SFM. This has led to some environmental non-governmental organisation arguing that the VPA and national licensing schemes is “watering down” forest certification. It will be argued that the standards and requirements are lower than those under forest certification. As at August, 2010 Ghana, Cameroon and the Republic of Congo had signed the VPA’s with the EU. Democratic Republic of Congo, Liberia and Vietnam are progressing towards negotiating the VPA with the EU and Malaysia, Indonesia, Gabon and Central African Republic were negotiating the VPAs

On the supply side the EU has introduced the EU Illegal Timber Regulation on 7 July 2010 with the European Union laying down requirements for operators who place timber and timber products on the market. This regulation prohibits the sale of illegal timber in the EU. It is expected that from January 2013 all wood products entering the EU will carry the FLEGT license.

4.11.3 Ghana and the Voluntary Partnership Agreement (VPA)

The Government of Ghana indicated its desire to engage the EU in the voluntary partnership agreement in December, 2006. To facilitate the process Ghana put in place a VPA Steering Committee to guide its approach to negotiations with the EU for the Agreement. The Steering Committee was a multi – stakeholder group and had government, civil society and industry on board. Ghana’s decision to engage in the VPA is based on the fact that the EU is its key market Ghana which seeks to maintain its share in this traditional market.

Ghana adopted a five phase approach to negotiating the VPA with the EU. The phases are shown diagrammatically in Figure 4.7.

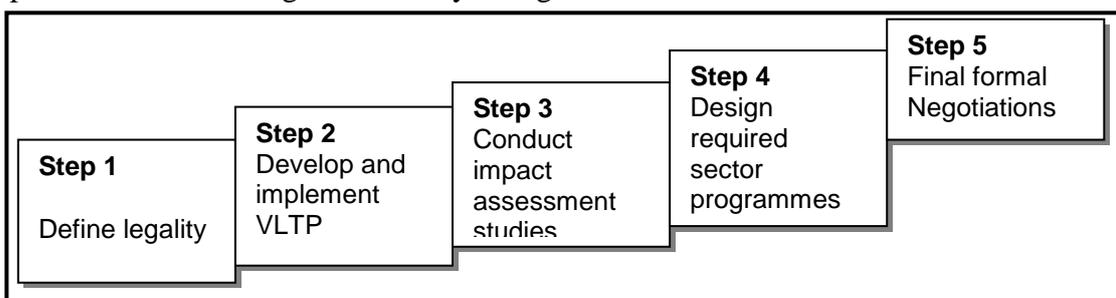


Figure 4.7 Road map to negotiating the VPA (Attah & Beeko, 2006)

Ghana concluded its negotiations with the European Union in September, 2008 as the first country to sign the VPAs and is expected to issue FLEGT licences in 2011. Under the Agreement Ghana has committed to the following:

- A definition of legal timber that was arrived at through a multi – stakeholder consultations. There is agreement that some aspects of the existing law are conflicting and therefore an agreed time frame of up to five years is required to address the gaps in the legislation.
- Introduction of a timber verification system (Legal Assurance System)
- Introduction of an independent monitor

The EU, under the agreement is providing supporting measures for Ghana to implement the agreement and this includes amongst others the following:

- Support of industry retooling
- Implementation of the timber verification system (Legal Assurance System)
- Capacity building measures.
- Support for regulating the domestic market

In the process Ghana is expected to develop and implement a Validation of Legal Timber Programme (VLTP). The aim of the VLTP is as follows:

- To improve good governance and controls in the Ghana forest management and regulatory system
- To establish a verification system that ensures Ghana’s continued access to her major wood export markets through the licensing scheme.
- Improve legal production of timber on the domestic market
- Improve sustainable management of Ghana’s forests.

Under the VPA process it is expected that there will be some impacts such as dislocation of illegal chain saw operators and reduced volume of raw material to timber firms that could result in reduction of employment levels. As part of this process Ghana with the support of the EU undertook impact studies to establish the implications of Ghana introducing a legal regime in timber production and trade. Ghana has sought support from the EU to mitigate the impact of introducing legal timber trade regime in Ghana. The challenge however, will be how Ghana can integrate its validation of legal timber programme with its timber certification programme. This approach is a model worth considering by Ghana.

4.11.4 Public Procurement Policies

Public procurement policies have been created to guide the purchase of timber by government agencies in the developed countries (ITTO, 2006). The policies seek to ensure that timber can be traced to the origin and to be able to prove sustainability. The European Commission (EC) have provided legal advice that criteria for sustainable timber may refer to direct environmental and sustained yield basis of timber production but not to the broader scope of social issues such as the rights of workers and indigenous people (Oliver, 2006). It can be argued that though the procurement policies have been the response to the lack of certified timber on the market its requirements fall far short of those for forest and timber certification for sustainability.

The introduction of procurement policies was initially targeted at tropical timber but has broadened to include all types of timber for it to be consistent with the rules of the World Trade Organisation of not being discriminatory. Public Procurement Policies (PPP's) have been strongest in the European Union. The drivers for PPP's in the EU are the public, environmental non-governmental organisations (ENGOS), and industry (ITTO, 2006). Oliver, 2006, however argues that the drivers of PPP's are the public perceptions and the media rather than objective assessment. He however agrees that environmental grass root activism is a key influence and cites the support given to the FSC certification by the ENGOS. The development of PPP's has been at the country level in the EU resulting in the lack of harmonisation. This Oliver, 2006 argues would be a major problem for timber producers or suppliers given that the EU has 25 members and could result in 25 different procurement criteria.

Though the PPP's seek to encourage sustainable forest management, producer countries argue that they have very little impact on prices for certified material resulting in cost disincentive for producer pursuing sustainable forest management.

As part of its measure to control illegal logging the EU is currently introducing the issue of additional measures along the lines of the Lacey Act to promote due diligence among importers of wood products. Also a number of trade associations have adopted codes of conduct to guide their members in the purchase of timber.

4.12 Conclusion

It is evident from the literature review that:

- Forest certification as a policy instrument can influence the way forests are managed and their impact upon social and environmental issues. Forest certification can improve forest governance and be a means to engage the stakeholders, particularly the local and indigenous communities, in management of the forests.
- Forest certification can also be regarded as a market based instrument for promoting market access and by extension SFM.
- There is growing demand for certified timber. However, availability of certified tropical timber is still low, resulting in an imbalance between demand and supply with demand outstripping supply.
- The literature reviewed is not conclusive about whether or not certification will lead to sustainable forest management. However, the literature reviewed does indicate that in tropical timber producer countries, SFM is generally a national goal. Governments are committed to SFM however the lack of resources constrain their capacity for implementation. The literature reviewed further indicates that certification could enhance access to markets, particularly in the EU which happens to be a key market for Ghana and other tropical timber producing countries. Markets in the EU for tropical timber producing countries are very much linked to the colonial ties between countries of the tropics and those in the EU. The USA is an emerging market for legal timber with the review of the Lacey Act to include timber and timber products.
- Despite early engagement in the forest certification process in Ghana, the country is lagging behind other tropical timber producing countries in forest certification. For instance Cameroon and Gabon have certified forests. To date no forests have been certified as sustainable. At best Ghana has traded in FSC certified controlled wood products and only for a limited number of companies (three). The slow progress in forest certification though not unique to Ghana poses a challenge in its inability to have its forests certified and the industry engage in forest certification. Where certification exists in the tropics it has mainly been for plantation timber. Where this has involved natural forests then the area and volumes produced are small.

- Malaysia has spearheaded the development of national forest certification schemes in the tropics with its Malaysian Timber Certification Scheme which has been developed, received endorsement from PEFC and is strongly being promoted by the Malaysian Timber Certification Council. Despite this development the Malaysian Timber Certification scheme is still having difficulties in gaining ready acceptance in the international markets, particularly in UK. Until recently the UK Central Point of Expertise on Timber did evaluate Malaysia's certification scheme to meet requirements for legality but not sustainability (Adams & Attah, 2009). This poses a challenge for Malaysia and other tropical timber producing countries pursuing their own systems for forest certification.
- There are various initiatives to implementing forest certification. Phased approach to certification is gaining grounds in the implementation of certification. Phased approach is particularly important with the private sector initiatives such as that from IKEA. The EU VPA and FLEGT process offers opportunities for developing the phased approach to forest certification. A number of countries, particularly African timber producing countries have adopted this approach given that there is support from the EU in assisting countries develop wood tracking systems and engaging forest communities and the ENGOs in consultations to enhance sustainable forest management and ensure increased flow of benefits to society at large.
- The existing models of forest certification and the experiences and lessons learned from the other sectors are critical in the development of a model of forest certification for Ghana. The experiences from the cocoa, oil palm, tourism and minerals sectors offer interesting approaches that would be considered in the development of the model for Ghana. This also allows the forestry sector which was early in the process to re-examine its approach. From the literature review it shows that none of the research works on certification have taken this step back to re-examine the approaches adopted by other sectors. The approach adopted by this research work emphasizes the need to draw on lessons learned from other sectors. This approach should also provide opportunities for other sectors, particularly the emerging carbon markets and the required certification.
- The review has attributed the slow progress in forest certification to a number of factors which can be classified as policy and market related instruments. These factors are:

1. Policy instruments

- Governance – corruption, weak enforcement and institutions, administrative allocation of resources results in poor governance, in particular forest governance structures in timber producing countries that have a slow uptake of forest certification. This has been one of the challenges for the Ghana forest administration;
- Stakeholder consultations – absence of broad stakeholder consultation which has been identified as a key factor in forest governance is a requirement in forest certification. Literature reviewed so far indicate the lack of engagement of many forest and local communities in the management of forests and the policies that drive forest resource management and utilisation. The VPAs between tropical timber producing countries and the EU offers opportunities to engage in effective stakeholder consultations in support of SFM;
- Procurement policies, legislation and regulations (i.e. FLEGT in EU & Lacey Act in USA) that impact on government purchases and the use of timber in government funded projects that direct purchases and markets in favour of legal and sustainably produced timber;
- Land tenure – unclear land tenure provides opportunities for illegal logging while unable to meet the social requirements under various standards and schemes for forest certification;
- Low priority by Governments resulting in lack of political commitment and financial support from Governments for forest certification. Low priority does not also encourage the integration of the forest sector in planning and programmes in other sectors such as health, finance and rural development

2. Market Instruments

- Market access - in international markets, particularly the European Union with the introduction of public procurement policies, the current discourse on climate change and the strong lobby by ENGOs is influencing the decision of countries and companies to pursue forest certification or undertake measures to ensure the production and trade in verified legal or sustainably produced timber;
- Procurement policies are also considered as a market instrument, in particular with the involvement of the private sector in green purchasing and the emerging green economy;

- Weak domestic market demand for certified timber, particularly in the tropics has not promoted certification;
- Price premiums for certified timber has the potential of serving as an incentive for companies to pursue forest certification, however the literature reviewed did not provide conclusive evidence that certified or verified legal timber will attract a price premium. There is however sufficient evidence that certified or verified legal timber will gain access to markets, particularly in the EU and USA;
- Promotion of certified timber – Support for FSC certified timber by ENGOs is promoting the market for certified timber, particularly FSC certified timber;
- Lack of harmonised standards for certification, the varying nature of standards and the lack of a mutual recognition system has not promoted forest certification.
- Size of company - The literature review has identified size of forest companies as a factor that influences the decision of companies to pursue forest certification. Operators in tropical timber producing countries are generally small in size and generally do not engage in forest certification due to the perceived high cost of forest certification, the lack of price premium on certified products and the inability of their governments to provide financial support in the pursuance of forest certification;

The literature review and the conclusions of the review show certification as both a policy and market instrument. The literature review provides guidance for the selection of questions that are included in the questionnaire for the survey. The underlying assumption is that forest certification was introduced as a tool for sustainable forest management (Carbarle et al., 1995; Baharuddin, 1995; Mayers, et al., 2001; Eba'a Atyi, 2004; Sheppard et al., 2004; Kilgore and Blinn, 2004; TTJ, 2005; Vlosky and Duery, 2005) and for market access (Baharuddin, 1995; Kiekens, 2000 and Agyeman, et al., 2006.) Forestry certification can therefore be seen from two perspectives, the first which relates to sustainable forest management addressing pressures for change, within forestry, where the expression can be seen through the lens of policy change such as governance arrangements (Stringer, 2006) as well as the strengthening of forest management practices at the forest management unit (FMU) level and the second, which relates to certification as a market tool, providing access to markets, opportunities for product differentiation and competitive advantage. This implies countries must have a strategic choice of strengthening forest management or a strong market orientation. Alternatively

countries may make a choice for a balance between strengthening forest management practices and gaining access to markets.

The approach that has evolved from the literature review therefore examines:

- Policy tools/ instruments in support of sustainable forest management – These factors include governance in the forest sector reflecting elements such as stakeholder consultations, regulation and legislation, purchasing policies, tenure security and government support;
- Market tools/instruments – These factors include market access, standards, price premiums, domestic market regulation, non–state actions and their influence on markets and eco-labelling.

The underlying assumption is that each market/ policy instrument ultimately has an influence on behaviour of the supplier through a specific causal chain of decision making events. The review provides the basis for further exploring policy and market instruments, their effect on a broad array of important model behavioural variables, and for testing how these policy and market distinctions relate to their effectiveness in evolving a model that will facilitate the engagement of Ghanaian timber companies in forest certification, particularly for the SMFEs.

Several key characteristics identified in the literature review will require further clarification and this will be achieved through the survey. Constraining factors identified through the literature review are considered as variables and grouped into the two categories: (i) policy and (ii) market related goals. A survey is then used to establish the level of influence and the causal relationships between the variables in pursuing forest certification, particularly for SMFEs in Ghana.

The research is therefore set out to investigate why Ghana has not made progress in forest certification. The research will provide insights into the slow progress of forest certification in Ghana and the tropics at large given the similarities of tropical timber producing countries.

The hypotheses to be tested as a result of the literature review and the proposed research will be as follows:

Hypothesis 1: Government support will promote the uptake of forest certification

Hypothesis 2: Poor stakeholder engagement is responsible for the slow growth of forest certification in Ghana.

Hypothesis 3: Timber firms in Ghana pursue forest certification to gain access to markets.

Hypothesis 4: Implementation of a national scheme for forest certification will see more companies pursuing forest certification in Ghana.

Hypothesis 5: The size of a company in the timber industry is responsible for its decision to pursue forest certification.

CHAPTER FIVE

5 Research methodology

5.1 Introduction

The literature review identified the variables to be used in the research design. The research also used focus group discussions in establishing variables that should be used in the design of the questionnaire for the research work. This section therefore sets out research methods used to collect and analyse data. The section shows how the data was collected and analysed. Limitations to the research process and steps taken to address them at each stage are also discussed. The field work is undertaken in three steps as follows:

- A focus group is established to conduct discussions on developing the elements for the questionnaire taking into consideration the elements identified from the literature review. The focus group aim is to identify and clarify indicators that were of relevance to forest certification in Ghana. The focus group meeting is also used to establish the scope of the survey.
- Develop and pilot test the questionnaire.
- Conduct pilot survey, revise questionnaire and undertake the full survey. The survey drew on the conclusions of the desk research and the literature review in investigating factors that constrain the development of forest certification in Ghana. The research sought answers to the question “Why has Ghana not made progress in forest certification?”

5.2 Fieldwork

5.2.1 Focus Group

The Focus Group was established to aid the process of questionnaire development. This approach of using the Focus Group at the exploratory stage of the study to determine the elements and variables has been used by various researchers (Kreuger, 1988). Others (Morgan, 1988) have used this approach as a complement to research using surveys and interviews and evaluated this process to be useful in the identification of key issues in studies. In recent times, focus groups have been used increasingly in social and market research (Bloor *et al.*, 2000). The focus

group was therefore used as an important tool for obtaining feedback on the elements and variables to be considered in the design of the questionnaire.

For this study, given that no company in Ghana had yet pursued forest certification, it was critical to use the focus group to establish attitudes towards the concept of forest certification and identify elements to be used in the questionnaire. This is aimed at complementing the identification of factors established through the literature review.

The researcher acted as the moderator/facilitator for the focus group discussions and took advantage of a meeting of the Steering Committee on the VPA to organise the focus group discussions. This was because of the similarity of the subject area that is certification of legal timber and the fact that there was a broad spectrum of stakeholders at the meeting who were very much aware of forest certification and whose contributions would be informed.

The focus group was made up of 13 representatives from the trade associations (2), public sector/government (2), private sector/industry (3), civil society (3), landowners (1), forest consultant (1) and National Working Group on Forest Certification (1). These representatives were chosen for their willingness to participate in the group discussions and their knowledge on forest certification. Though the group may seem large because focus groups are typically made of between 8-12 persons (Gomm, 2008), other researchers have used up to 15 participants (Goss and Leinbach, 1996). The size of this group did not constrain their ability to interact. Their varied backgrounds and interests enriched the discussion and care was taken not to have civil society polarize the discussions due to their passion for the environment, sustainable forest management and timber certification.

The duration of the discussion was one hour with a 15 minute break to allow for informal exchange of views by the group members. Prior to the start of the meeting the group was advised of the purpose of the meeting. At the end of the discussion, a summary of the key issues was presented and the group informed about the next steps. This was because of the likelihood that some of the group members would participate in the survey. The elements that were identified from the focus group discussion included the following:

- Government support – The group was divided on the nature of government support. While civil society was of the view that certification was a private

sector responsibility, industry was of the view that government had a key role to play in promoting forest certification.

- Stakeholder consultations – was seen by all as a key issue in promoting forest certification.
- Markets – It was clear from the discussions conducted that the domestic market should be considered alongside the export market. Any achievements on certification that did not cover the domestic market were likely to run into difficulties, with likely increases in costs associated with the segregation of domestic and export material in processing plants.
- Need for clear distinction between ownership of Timber Utilisation Contracts and Timber Utilisation Permits. It was evident from the discussions that this could have a bearing on the ability of companies to pursue forest certification. The Civil Society Group was of the view that TUPs as currently allocated by the Forestry Commission were illegal and would therefore not qualify for forest certification.
- Price premium – while industry saw certification as an added cost with no indication for a price premium, it was clear that other stakeholders, particularly civil society, were of the opinion that certification could provide a premium for Ghanaian timber on the international market.
- The group were generally in agreement with the constraints identified by the literature review. However, it was acknowledged that an appropriate open ended question for inclusion in the survey/questionnaire may reveal new and unpublished information about constraints that may be peculiar to the Ghanaian timber operators.
- Other elements such as standards, phased approach, economic framework, regulatory and legal framework were identified.

The experience and wisdom of the participants therefore informed the development of the questionnaire. The varied interests also informed the choice of the sampling frame. Prior to the focus group meeting, the thinking behind the research was to engage a broad stakeholder group in the survey. However, it was subsequently evident that, because the focus of the research was to identify the constraints to the development of certification, it was important to interview those specifically engaged in forest operations, timber processing and exports. It was these people

active in this latter domain that determined the choice of the sampling frame. The focus group was therefore used not as a basis for statistical analysis but to identify the key issues from which the questionnaire was developed for pilot testing (Hundley and van Teijlingen, 2001).

5.2.2 Design and administration of questionnaire

The questionnaire design followed the procedures recommended by Dillman (1978), Remenyi *et al* (2000) and De Vaus (2002). The questionnaire used a five point Likert scale with 1= strongly disagree, 2= disagree, 3=neither agree nor disagree, 4= agree and 5= strongly agree. The questionnaire uses mainly closed questions to facilitate the use of quantitative methods for the data analysis. A limited number of open ended questions were used to encourage respondents to possibly identify elements and issues that have not been recognised in the literature review.

Remenyi *et al.* (2000) cite Marsh (1989) and Jung (1995) as having reservations on the use of the questionnaire in collecting evidence that is used in the generalisation and testing of public opinion. However, they were of the opinion that, despite these reservations questionnaires are widely used in business and management research.

The survey implementation is modelled after Dillman's Total Design Method-TDM (Dillman, 2000). In line with these TDM survey guidelines, pre-survey notification, initial survey mailing, post survey and second mailing were all conducted in order to maximise response rates. Accordingly and prior to the implementation of the survey, each firm was contacted by telephone to:

- Ensure that they were still active. The list of registered loggers, millers and exporters was obtained from Timber Industry Development Division of the Forestry Commission of Ghana (TIDD/FC).
- Confirm the postal and email addresses of companies so as to reduce the incidence of non-response
- Pre-notifying those companies selected for the survey in order to enhance the response rate.
- Identify the appropriate individuals to address the questionnaire. In this study these were decision makers in the companies. This was justified since any decisions to be made with regard to any company's pursuit of forest certification will depend upon their leadership. Individuals meeting these

criteria were used. This is in line with previous studies that have examined attitudes and perceptions with manufacturing firms mainly in the USA (Vlosky and Ozane, 1998; Hubbard and Bowe, 2005).

5.2.3 Questionnaire design

The literature review and the focus group discussion were used to identify the variables in Table 5.1 that were then utilised for developing the questionnaire in the survey of timber firms in Ghana. The focus group discussions were useful in identifying and clarifying indicators that are of relevance to forest certification in Ghana. The focus group meeting was also used to define the scope of the study. Table 5.1 shows the variables used in the survey and the hypotheses against which they are tested

VARIABLE	HYPOTHESIS
Government support	H1: Government support promotes the uptake of forest certification
Stakeholder consultation	H2: Poor stakeholder engagement is responsible for the slow growth of forest certification in Ghana
Markets	H3: Timber firms in Ghana pursue forest certification to gain access to markets
Standards for SFM	H4: Implementation of a national scheme for forest certification will see more companies pursuing forest certification in Ghana
Company size	H5: The size of a company in the timber industry is responsible for its decision to pursue forest certification

Table 5.1 Variables and Hypothesis tested

These variables were chosen because they are well established in the literature and survey methods reviewed (de Vaus, 2002) and further elaborated through the focus group discussions. The questions on these variables in the survey seek to collect data on:

- Attributes - Company size – section 1 of the questionnaire. This sought to establish linkages and relationships between size of company and its decision to pursue forest certification.
- Attitudes – to establish what respondents view as desirable. This considered the standards and the level of support required from Government. This attribute also examined the governance issues.
- Knowledge - to establish level of awareness of forest certification among Ghanaian producers/manufacturers and the extent of engagement of stakeholders in discussions on forest and product certification.

5.2.4 Questionnaire administration

The survey used the postal/mail method to administer the questionnaire. To improve the rate of response and the quality of the study, an initial letter was sent out to the sample group to inform them of the study aim and for them to expect to receive the questionnaire. In addition there was a covering letter to the questionnaire explaining the purpose and importance of the study while assuring respondents about the confidentiality of the study. It was also expected that setting a deadline for the responses would increase the response rate. The use of the Forestry Commission's staff to follow up and collect the completed questionnaires reduced the time for the return of completed questionnaires and increased the response rate.

The postal/mail method was deliberately chosen because of the significant advantages highlighted in the following list:

- **Cost** - postal surveys usually cost 50 per cent less than telephone surveys and 75 per cent less than face to face interviews (De Vaus, 2002).
- **Geographic coverage and sample size** – postal surveys allow for an effective coverage of a large geographic area at a reduced cost.
- **Timing** – The questionnaire was distributed to all members at the same time. Reminder letters were sent out to respondents to improve the response rate. This also provided an incentive by indicating in the cover letter that results of the survey would be made available to respondents. It reassured respondents that the results would help develop a model to ensure the growth of certification in the tropics and provide access to markets given the growing global concern for the environment.

- **Low response rate** - It is worth noting that although the postal survey offered the lowest cost, low response rate is a weakness. However, the low response rate was overcome by sending out reminders and by allowing the staff of the Forestry Commission to follow up with the mills in order to collect the responses.
- **Internet** - The Internet has provided new opportunities for survey research. The Internet potentially opens up a huge population and easier access to individuals and a variety of organisations. Moreover, survey tools can, potentially, be designed to use multimedia and be more interactive. Although an Internet survey is feasible, it was not an option for this study for the following reasons:
 - a) About 70% of the companies being studied did not have email addresses due to their size and the non-availability of the infrastructure for web-based communication. The high incidence of “spams” could also result in respondents or net users not reacting to the questionnaires, perceiving it as unsolicited email. This would affect the results of the questionnaire and the quality of data.
 - b) The limited use of the Internet is cited as a factor and could result in survey bias due to the background, gender, education and income of respondents.
 - c) Internet based samples are unrepresentative and difficulties arise in generalising from such information.

Hence the survey did not use the Internet and emails as a means of reaching out to respondents or gathering survey information. Therefore a postal/ mail survey method was used in the collection of data in this research. The mail survey was complemented with personal contact by field officers/staff of the Forestry Commission encouraging companies to make prompt and meaningful responses.

5.2.5 Pilot Study

The questionnaire developed from the outcomes of the literature review and focus group discussion was pre-tested to obtain feedback on the questionnaire and the hypotheses that were proposed. This allowed for the development of a clearer and more concise questionnaire. The pre-testing amongst others also sought to achieve the following:

- Test the technique of the survey in collecting data and method to be used in the analysis. This has the potential of eliminating the risk of failure (de Vaus, 2002).
- Eliminate unnecessary, confusing and misleading questions (de Vaus, 2002). The number of items to be included was guided by the overall length of the questionnaire and the outcome of the focus group discussions.
- Identify potential possible problems with the research procedure.
- Establish the effectiveness of the sampling frame (Hundley and Van Teijlingen, 2001).
- Assess the validity and reliability of the variables that the study seeks to measure. De Vaus (2002) argues that asking questions on which people have no opinion or information can lead to “*very rough-and-ready answers*”. To emphasise this point, he further cites error levels of between 22%-34% for questions related to respondent’s fathers’ education in surveys that were conducted two years apart on the same population.
- Optimise response rates by rephrasing questions that are found to be inappropriate during pilot testing.
- Establish the appropriateness of the cover letter and the time taken by respondents to complete the questionnaire.
- Use staff of the Ghana Forestry Commission to follow up and collect completed questionnaires. This process shortened the time for return of the questionnaires and also increased the response rate in the pilot study to 60%. This approach of using staff of the Forestry Commission to enhance the response rate was used in the actual survey.
- Establish if questions on the key issues identified in the literature review had not been overlooked. The pilot survey indicated the need for policy specific variables such as standards.
- Identify problems likely to arise in the implementation of the study allowing ambiguous questions to be dropped or modified. For instance from the pilot survey, the question on resource harvesting was changed to reflect ownership of TUCs and TUPs.
- Prioritisation of elements in the pilot used a Likert Scale. However in the main survey, the questionnaire was modified to rank a list of prioritised items on a scale of 1 to 5. The issue of the model for forest certification had one of the items modified to introduce the preference for ISO standards.

- Determine the ability to perform meaningful analysis of the evidence obtained.

The pilot test was carried out four weeks prior to the main survey to test the reliability of the questions using correlation to establish the level of reliability. A score of 0.8 and above was considered as acceptable. To address the issue of reliability multiple-item indicators was used.

The questionnaire was pilot tested among 10 timber companies. These companies are from the following:

- Loggers (3)
- Sawmillers (3)
- Veneer/Plymillers (2)
- Furniture and Wood Workers Association of Ghana (2)

These groups are sub- divided equally into SMFEs and LSEs. The groups contained companies with and without TUCs and TUPs.

Participants in the pilot survey were made up of timber operators in the Ashanti, Brong Ahafo and Western Regions of Ghana Figure 5.1.

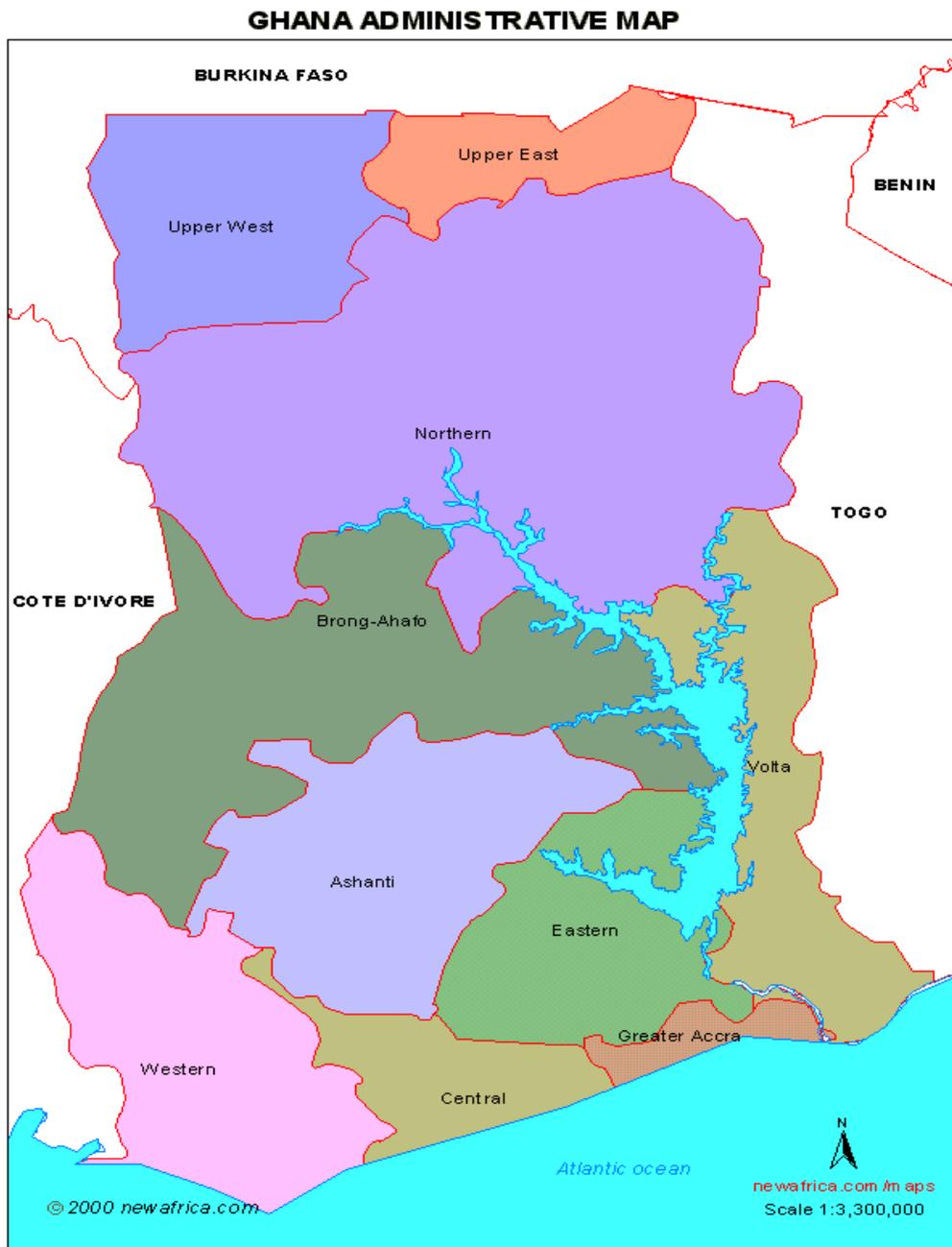


Figure 5.1 Administrative map of Ghana (newafrica.com, 2000)

These 3 regions were chosen for the pilot survey because of the high concentration of timber operators, ranging from loggers to sawmillers, veneer and plymills as well as furniture companies, in these regions. The companies were selected randomly from a list of registered timber firms. The pilot survey allowed the questionnaire to be modified and used to run the main survey (Appendix 4 – Survey on Perceptions of Timber Certification in Ghana).

The survey sought to uncover information on knowledge, attitudes and behaviour in respect of forest certification paying special emphasis to SMFEs. The use of surveys for attitudes and behaviour is supported by Stevens *et al.* (1998), Vlosky *et al.* (1999), Vlosky and Smith, (1994) and Anderson *et al.* (2005).

As noted by Remenyi *et al.* (2000), surveys are a common approach to research in business and management studies and continue to be the primary data collection method used in fields such as forest products marketing research. Oppenheim, (1996) argued that questionnaires offer the opportunity to collect large quantities of data in a quick and convenient manner, hence the adoption of questionnaire development and administration for primary data collection in this study.

The survey involved the use of a questionnaire to establish the relevance and applicability of factors identified in the literature review for communicating environmental credentials for wood products from the tropics particularly from Ghana. The questionnaire also sought to establish the perceptions of the Ghana timber industry in respect of the role that timber certification plays in the marketing of their timber products.

5.3 Sampling frame and data collection

5.3.1 Population

The study population was comprised of all timber firms registered with the Timber Industry Development Division (TIDD) of the Forestry Commission of Ghana. For the purpose of this report these were companies that had valid registration certificates with the TIDD as at December, 2007.

5.3.2 Sampling Frame

The sampling frame for the study was companies who had registered with the TIDD and were as at December, 2007 exporting timber and timber products. Additionally, these companies had exported timber consistently for a five year period and were registered members of the trade associations, namely the Ghana Timber Millers Organisation, the Ghana Timber Association and the Furniture and Woodworkers Association of Ghana. This was to ensure that those companies surveyed were fully compliant with the government regulations and also members of the trade associations. Membership to the trade association is not a legal requirement for TIDD registration, however, it was found to be important if the researcher was to gain the cooperation of the key industry players that export over 80% of timber from Ghana. A total of 210 companies were identified through this process and questionnaires sent to all of the companies. 110 questionnaires were returned. 103 questionnaires were found to be responsive and yielding a response

rate of 49% Seven of the questionnaires that were returned were found not to be responsive and did not therefore form part of the analysis.

5.4 Test for reliability

Test for internal consistency or reliability is the correlation of an item, scale, or instrument with a hypothetical one which truly measures what it is supposed to measure. It is essential that researchers demonstrate that any data collection instrument used in research is reliable since without reliability, research results cannot be replicated. In the present study, a test for reliability (internal consistency) for the entire scale yielded a Cronbach's alpha value of 0.937 which is considered high, implying that the items in the questionnaire or research instrument measure what they were supposed to measure. The high Cronbach's alpha value in excess of 0.8 is an indication that the entire instrument has a high replicable value. To evaluate the reliability of the subscales used in the entire data collection instrument, the following results (Cronbach's alpha values) were obtained:

These values, as displayed in Table 5.2, are significant and show that each sub-scale item differentiates among respondents in the same direction, as does the entire scale. The significance of these figures is indicative of the fact that the scale measures what it was designed to measure.

#	Constructs / Sub Scales	Cronbach's alpha value
1	Standards	0.795
2	Stakeholder Consultations	0.621
3	Government support	0.758
4	Model for forest certification in Ghana	0.848
5	Prioritisation of elements in the certification model	0.659
6	Markets	0.672

Table 5.2 Reliability Coefficient scores (Cronbach's alpha value) for the sub scale of the research questionnaire

5.5 Constraints

Access to primary data from the timber industry in Ghana is limited (Owusu, 1998) due to fears in exposing their companies to possible government investigations. This fear is borne by experiences in the timber industry in the mid 1990's when the industry was under investigation for illegal trading activities such as under invoicing (Sarfo-Mensah, 2005). The researcher used his relationship with the industry and staff who work with the mills to collect the data. The position of the

researcher could influence the response of the timber firms who may have the feeling that the information could be used against them. Stephenson and Greer (1981) found that close relationships with respondents tended to corrupt data that they disclosed. Other researchers such as Akwetey (2006), however, found out that within the African context the relationship with respondents improved the response rates and therefore the relationship of the researcher with the industry could be responsible for the high response rate for the survey. The researcher also took advantage of the focus group and the covering letter that highlighted the purpose for the meeting to allay the fears of industry and get the industry positively engaged in the survey.

The poor mailing system in Ghana was also a constraint. The questionnaire return was low initially and after 6 weeks the researcher had to send first reminders and later had personnel of the Ghana Forestry Commission to visit the companies. The visits to participating companies by Forestry Commission staff were found to be useful in increasing response rates.

5.6 Data Analysis

The survey data was collected over a six-month period in 2008. Data collected using the mail questionnaire was first validated to ensure that it was affording relevant measures with respect to the intended parameters (Gomm, 2008). The data was also checked for responsiveness that is to establish if all the questions were filled out. The 103 responsive questionnaires were coded and entries made into the SPSS software. Where there were missing items in a construct the neutral position of “*neither agree nor disagree*” was assigned (de Vaus, 2002). This was aimed at reducing the level of non-responses. The completed questionnaires were therefore checked for errors and coded. For each of the completed questionnaires the response in respect of labour force was used to place the response in the two categories of LSE and SMFE. The two categories were tested for differences using the ANOVA-test in their responses in respect of the variables, engagement in forest certification, expected premiums, the role of governments, standard, stakeholder consultations, markets and the model for forest certification.

It is noticed that from the open ended question on constraints for companies to list 5 constraints to pursuing certification (Appendix 4) a significant number had not

responded, particularly among the SMFEs. This in itself did not make the returned questionnaire non-responsive. It was assumed the respondents were either not engaged in forest certification and therefore had not experienced any constraints or were not disposed to reflecting critically on the question. However since this question was meant to tease out possibilities of constraints it did not therefore make the return questionnaire non-responsive if this question was not addressed.

The SPSS provided statistical functions for analysing the data generated from the completed questionnaires. The analysis sought to establish if, for the variables listed above, any differences existed between the two groups (SMFEs and LSEs) in their uptake of forest certification and their preference for a phased approach to forest certification. The analysis also sought to test the previously derived 5 hypotheses, in respect of the uptake of forest certification in Ghana.

5.7 Conclusion

The research design and methodology has been discussed in this section. A focus group was used to identify elements and variables for the questionnaire on forest certification. The data collection and analysis methods are elaborated. The primary data has been collected through the use of mail questionnaire and the response rate of 49% is considered good when compared to others in this field.

Constraints to data collection have included the past experiences of Ghanaian timber operatives in respect of investigations into the timber industry, the poor mailing system in the Ghana, and the attitude of Africans to questionnaires, particularly when they do not know you. This latter constraint was, however, minimal in this study due to the position occupied by the researcher as having oversight responsibility of the timber industry in Ghana.

The research methodology used in this study has therefore been justified and it corresponds to other methods identified through the literature review.

The next main section, chapter 6, presents the results of the study and the findings are discussed within the context of the literature that has been reviewed on timber certification and the changing trade flows in timber and timber products.

CHAPTER SIX

6 Presentation of results

6.1 Introduction

This section presents mainly descriptive and inferential statistics. The descriptive statistics are in the form of tables, pie charts and bar graphs that have been derived from the survey results. With the inferential statistics, two parametric statistical tests are used for the analysis; Multiple regression and the Independent t-test. Multiple regression makes it possible to investigate the effect of a number of independent variables on a dependent variable. The Independent t-test on the other hand establishes the significant difference between two independent groups. In this instance the LSEs and the SMFEs. These tests are used to test for significance among the scores from the various groups of respondents.

The data is analyzed using the Microsoft Excel Spread Sheet and the Statistical Package for the Social Sciences (SPSS).

6.2 Descriptive analysis

6.2.1 Respondents position in company

Question 2 of the survey sought to establish the position of respondents in the company that were responding to the questionnaire in order to establish the seriousness attached to the questionnaire. Figure 6.1 therefore shows the position of respondents in the company. 72.8% of respondents were Managing Directors of the company. This is a reflection of the importance given to the research work by the timber industry. 9.7% of respondents were Forest Managers. This shows a low level of engagement in forest management but can be attributed to forest management been undertaken by the Government through the work of the Ghana Forestry Commission rather than the individual companies even for those that own forest concessions. The survey also showed very few companies had certification managers respond to the questionnaire. This could be a reflection of the absence of forest certification in the companies and hence the absence of the job functions in the companies that were surveyed.

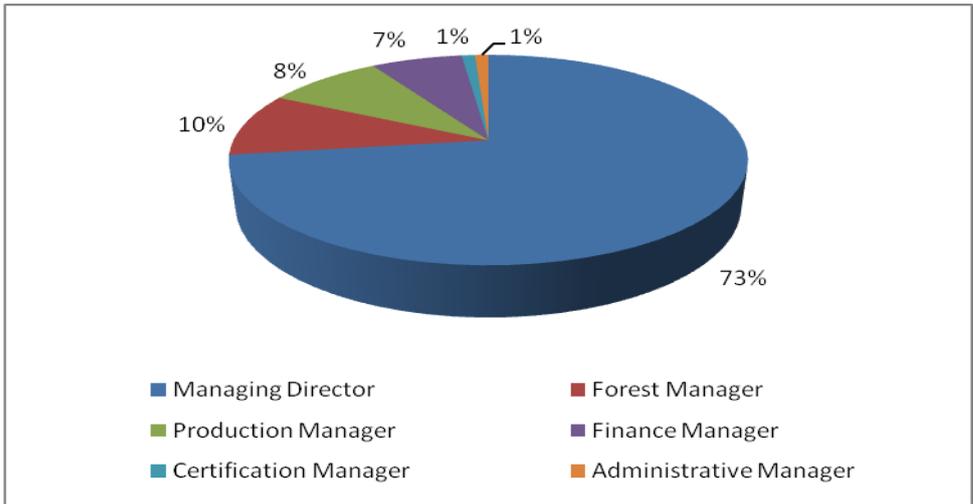


Figure 6.1 Pie chart showing respondents' position in company

6.2.2 Size of respondent's company

Question 3 established the size of companies that responded to the questionnaire. 71% of companies that responded were SMFEs and 29% were LSEs (Figure 6-2). This is a reflection of the structure of the Ghana timber industry which is dominated by SMFEs and the responses will to a large extent reflect the position of the SMFEs.

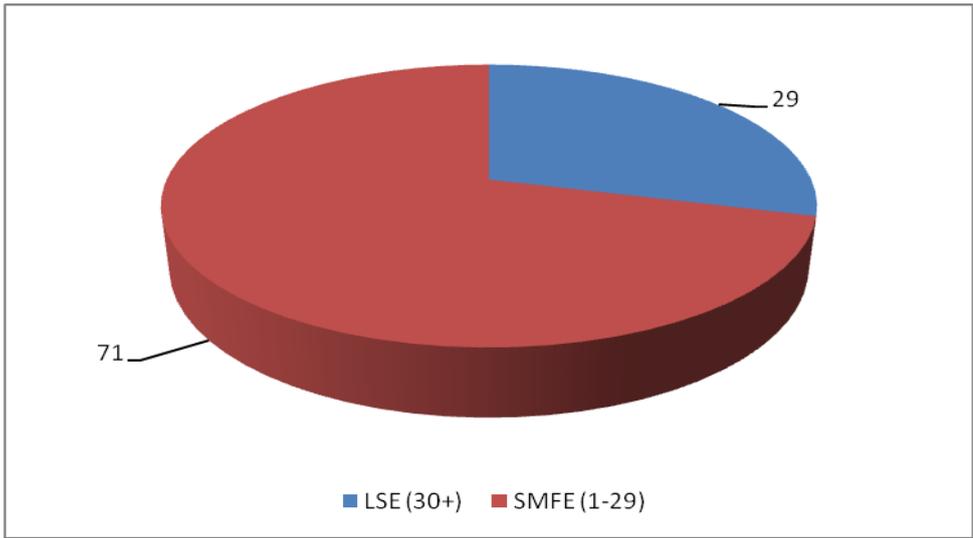


Figure 6.2 Pie chart showing the proportion of companies in each category in the survey

6.2.3 Nature of Company business of operation

Question 4 established the type of company business and its operations. Figure 6.3 shows the type of the company business by number of respondents in the survey. The activities of respondents were not mutually exclusive since companies are engaged in more than one activity. However, there were a high number of

respondents mainly in the logging and sawmilling sectors of the industry. Again this is a reflection of the structure of the industry where the main activities are in the primary processing sector. Sawmills accounted for 66.0% of respondents while loggers accounted for 13.6% of respondents. The two groups collectively accounted for 79.6% of the respondents.

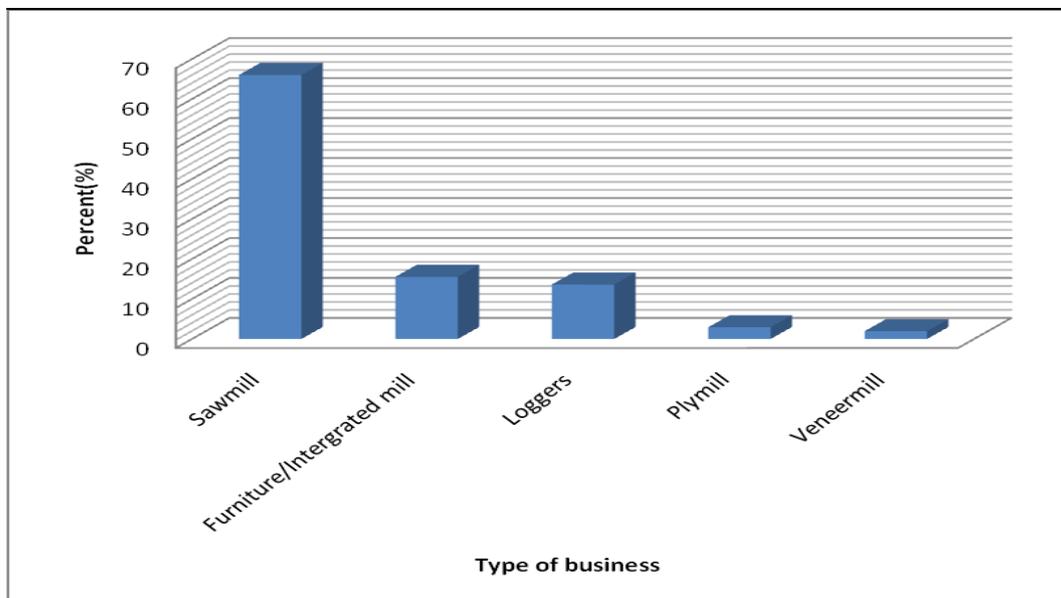


Figure 6.3 Bar graph showing the nature of company business

6.2.4 Timber Utilisation Contracts

Question 5 established the proportion of companies that had access to the forest resource and the nature of ownership. The survey examined the number of companies holding Timber Utilisation Contracts (TUCs) and the results are shown in Figure 6.4 TUCs form the basis for long term ownership of the timber resource. It is evident from the chart that only 27.2% of respondents hold TUCs. This implies that many companies that process timber do not hold access to raw material and are most likely buying their raw materials or operating under Timber Utilisation Permits. These permits do not provide long term security to the timber resource. This low figure could also be attributed to the high number of companies that are yet to convert their timber leases to Timber Utilisation Contracts. This has been a controversial area in the allocation of timber rights in Ghana and questions whether timber processed in Ghana can qualify for certification given that the legality of most of the timber harvested is in doubt.

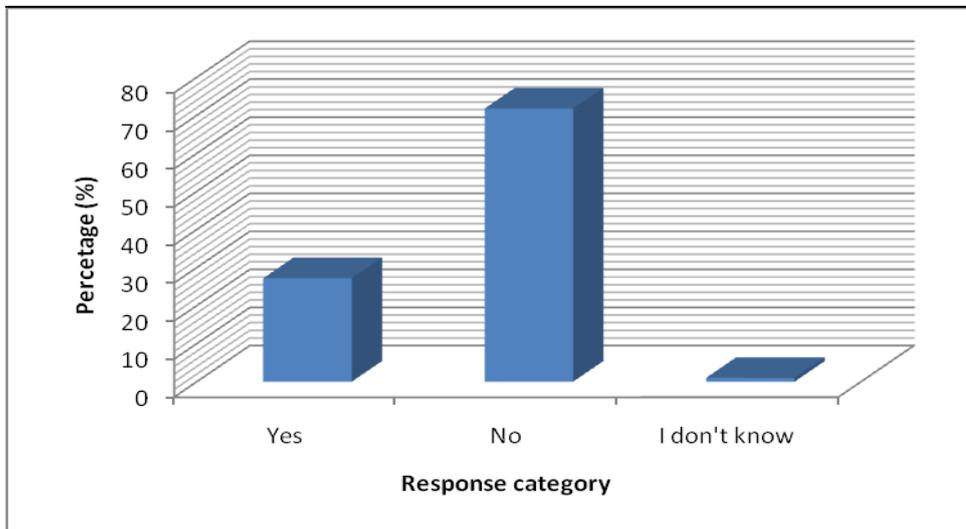


Figure 6.4 Bar graph showing the proportion of companies holding Timber Utilisation Contracts

We can examine the holding of TUCs by the two groups studied, namely, the LSEs and the SMFEs (Table 6.1). It can be seen that within the SMFEs group only 14 companies out of 73 SMFEs (19%) hold TUCs implying that this group has a very low likelihood of pursuing forest certification since the majority do not have long term ownership of the resource. Ownership and access to forests is a pre-condition for one to pursue forest certification. Such companies without timber rights can only pursue CoC certification or verification of legal origin.

Within the LSE's group 15 out of 30 (50%) of companies hold TUCs, implying that a sizeable number in this group own rights to the timber resource and are therefore more likely to pursue forest certification.

		Number of Companies holding Timber Utilisation Contracts			Total
		I don't know	No	Yes	
Size of company	SMFEs	0	59	14	73
	LSEs	1	15	14	30
Total		1	74	28	103

Table 6.1 Cross tabulation showing the number of companies holding a Timber Utilisation Contract by size of company

6.2.5 Timber Utilisation Permits

Question 6 establishes the proportion of respondents with TUPs. In respect of TUPs, Figure 6.5 shows the distribution of TUPs for the companies surveyed.

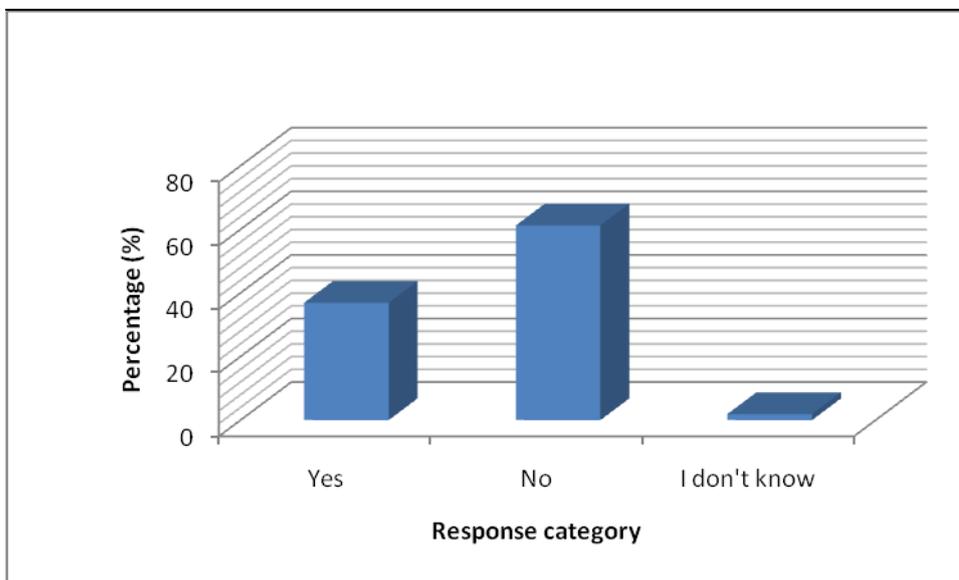


Figure 6.5 Bar graph showing the proportion TUP holders

63 out of 103 respondent companies (61.2%) of companies indicated that they did not have Timber Utilisation Permits. These are permits for harvesting usually given for salvage or short term removal of timber. Again, it is apparent from Table 6.2 that a significant number of timber firms do not hold these permits. This implies that a large number of processing companies do not have access to the resource and this could undermine the process of sustainable forest management. The inability of companies to gain access to timber resources could also account for the slow pace

of forest certification, since companies engaged in milling do not own any forest concessions. Only 37% of companies hold TUPs. Though this proportion is higher than those holding TUCs, it is still evident that only a small proportion of firms that operate in the Ghana timber industry have rights to the timber resource. This could be a reflection of a high presence of speculators in the industry in Ghana that could threaten the sustainability of the forests.

		Companies holding Timber Utilisation permits			Total
		I don't know	No	Yes	
Type of company	SMFEs	0	48	25	73
	LSE s+	2	15	13	30
Total		2	63	38	103

Table 6.2 Cross tabulation showing the number of companies holding a Timber Utilisation Permit by size of company

24 out of 73 (34%) of respondents in the SMFEs group owned TUPs. This is higher than the proportion of SMFEs that hold TUCs. The number of TUP holders in the SMFEs group is also more than twice the number in the LSEs holding TUPs. It is evident from the table that SMFEs tend to be awarded the TUPs. It is also worth stating that from those surveyed 10 more companies held TUPs when compared to the holders of TUCs.

6.2.6 Awareness of timber certification

Question 7 establishes the level of awareness of respondents on timber certification in the companies surveyed. When the question of who had heard of Forest Certification was asked, 58 out of 103 (56%) of respondents indicated they had not heard of forest certification and only 44% said they had heard of Forest Certification (Figure 6.6).

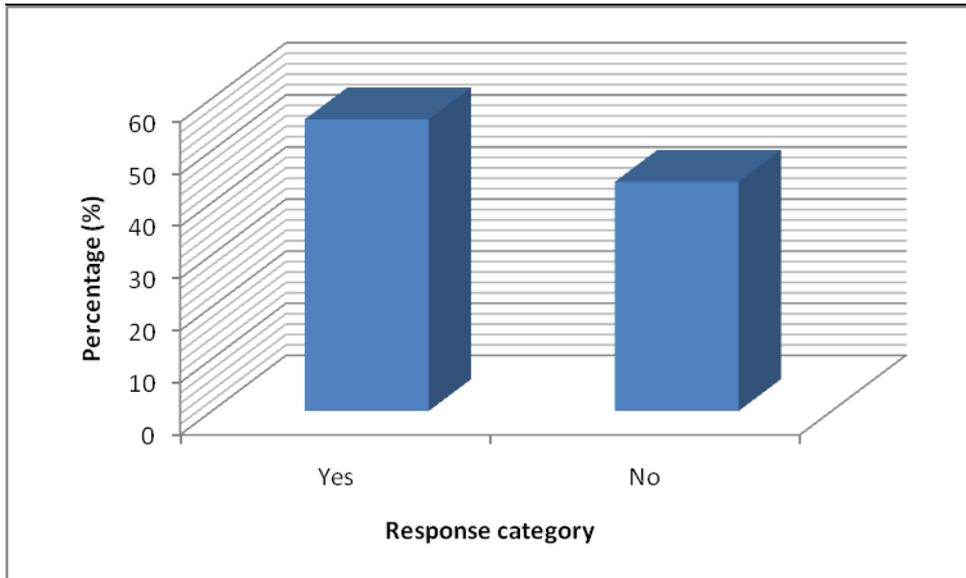


Figure 6.6 Bar graph showing whether respondents have heard of forest certification

Table 6.3 shows the between group differences in having heard of forest certification. The study showed that 27 out of 30 (90%) of respondents in the LSEs category had heard about forest certification while only 31 out of 73 (42%) of respondents in the SMFEs group surveyed had heard of forest certification. This could be a reflection of the relative levels of understanding of the international market requirements for trade in timber between the two groups. The LSEs, who are mainly engaged in exports, would have a better understanding of market requirements, given their level of interaction with the international markets.

		Number of companies that have heard of forest certification		Total
		No	Yes	
Type of company	SMFEs	42	31	73
	LSEs	3	27	30
Total		45	58	103

Table 6.3 Cross tabulation showing whether respondents have heard of forest certification by size of company

6.2.7 Price Premium

Question 9 established the level of expectation in respondents for a price premium for certified timber. In respect of expectations for a price premium on certified timber there was a spread in the expectations of respondents. The modal class was

between 1-5% premiums on price. However it is shown in Figure 6.7 that a premium of more than 6% is expected by 15% of the respondents. This reflects the expectation of Ghanaian timber producers that there should be an incentive for companies to engage in forest certification. This perception of the need for an incentive for certified timber is consistent with the findings from the literature review and the outcome of the focus group discussions.

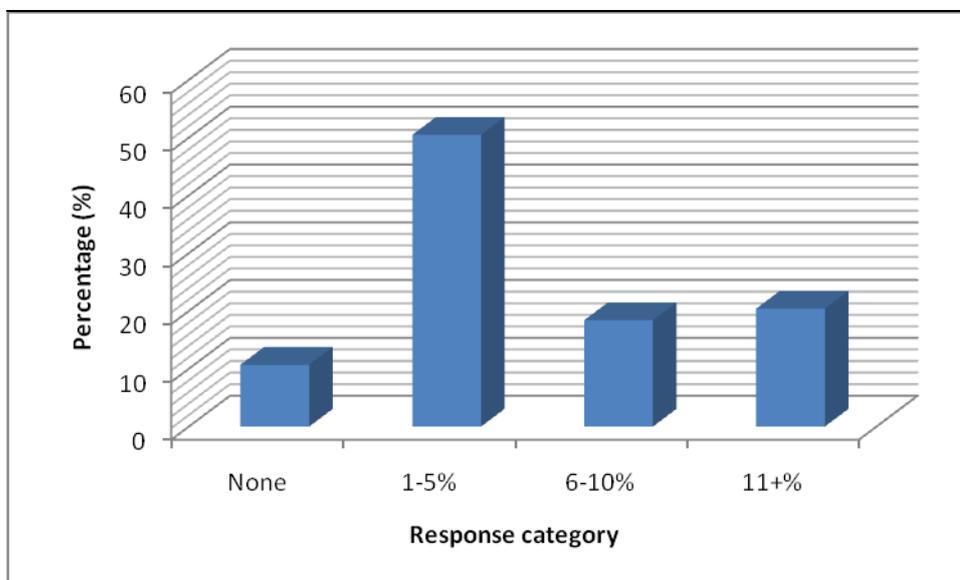


Figure 6.7 Bar graph showing expectation for a price premium on certified timber

	None	1-5%	6-10%	11+%	Total
SMFEs	7	42	11	13	73
LSEs	4	10	8	8	30
TOTAL	11	52	19	21	103

Table 6.4 Cross tabulation showing price premium on certified timber by size of company

For the individual groups, 57.5% of companies in the SMFEs category indicated there should be 1-5% premium of certified timber, while 33% of the LSEs were of the opinion that there should be a price premium of between 1-5%. 15% of respondents in the SMFEs category expected premiums of 6-10% while for the LSEs 27% of respondents expected premiums of between 6-10%. 26% of LSEs respondents expected premiums of above 11% compared to 18% in the SMFEs category. This shows that the LSEs expect higher premiums for engaging in forest certification than the SMFEs. Overall the LSE have a larger proportion expecting price premiums in excess of 5% for engaging in forest certification.

6.2.8 Constraints to timber certification in Ghana

The research used an open ended question (Question 10) to identify from the respondents the constraints to forest certification in Ghana (Table 6.5). It used the open ended question for this because the questionnaire sought to establish if there were other constraints other than those identified in the literature review. From the responses, it showed that the lack of finance and illegal logging were reported as constraints to forest certification in Ghana. This question however reported a high number of non responses and could reflect the fact that respondents were not undertaking forest certification. It could also imply that respondent lack of engagement in forest certification could also be responsible for the non response in that they were not familiar with certification hence their inability to respond to the open ended question (Table 6.5).

		Constraints							Total
		Poor document	Finance	Lack of Gov't support	Illegal logging	Lack of management plans	N/A	No resp	
Type of comp	SME	2	17	0	3	0	5	46	73
	LSE	1	8	1	4	1	3	12	30
Total		3	25	1	7	1	8	58	103

Table 6.5 Cross tabulation showing constraints faced by timber firms in Ghana and type of company

Lack of finance is listed as a constraint faced by companies in the pursuit of forest certification and attributed to about 25% of respondents (Table 6.5). The problem of finance is a key constraint to the timber industry and confirms earlier work on the Ghana timber industry (Appiah, 1990). Illegal logging is also identified as a key constraint and accounted for 6.8% of the responses. From the literature review one of the reasons for governments working towards addressing illegal logging is the need to create a level playing field. Illegal logging is reported to depress global world prices for wood products by between 7%-16%. Lack of government support which was identified from the literature review as one of the constraints to forest certification ranked low in the survey accounting for a mere 1% of responses. This could imply the industry in Ghana does not really expect support from the government in financing the cost of certification or providing the industry with subsidies and incentives to promote forest certification. Under the Government of

Ghana's Economic Recovery Programme (ERP) the government had removed subsidies from other sectors of the economy.

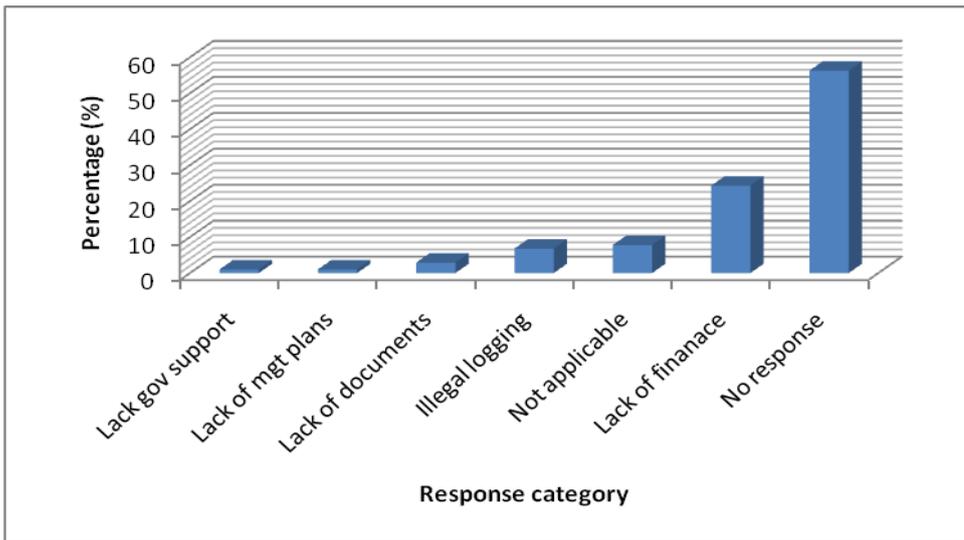


Figure 6.8 Bar graph showing perceived constraints to timber certification in Ghana

6.2.9 Level of Engagement in timber certification

92 out of 103 (99%) of the respondents surveyed were not engaged in timber certification, as reflected in Figure 6.9.

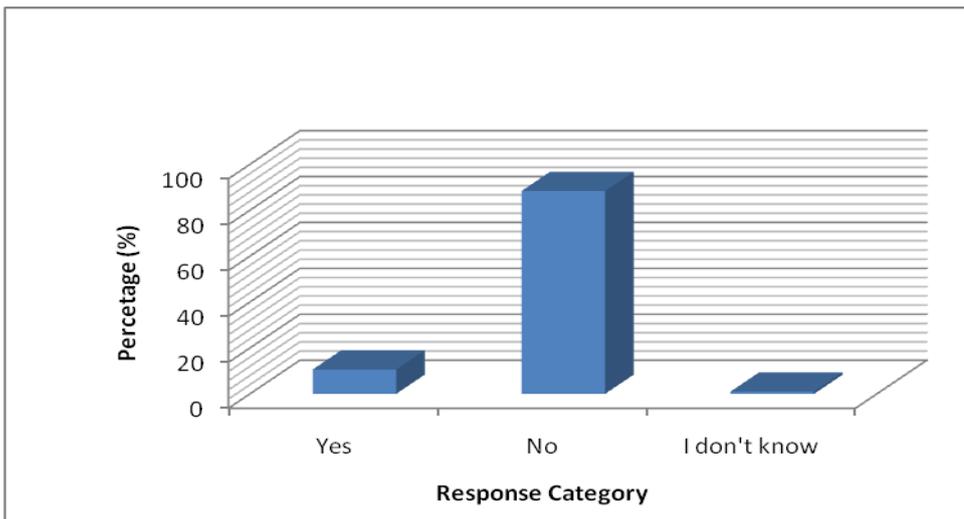


Figure 6.9 Bar graph showing respondents' engagement in forest certification

The extent of engagement in forest certification by the two groups SMFEs and LSEs is shown in Table 6.6

		Number of companies engaged in forest certification		Total
		Yes	No	
Type of company	SME or 1-29	1	72	73
	LSE or 30+	10	20	30
Total		11	92	103

Table 6.6 Cross tabulation showing respondents' engagement in forest certification by type of company

A third (10 out of 30) of the LSEs is engaged in forest certification while for the SMEs only 2% (1 out of 73) respondents are engaged in forest certification.

6.2.10 Standards for timber certification

Responses to Question 11 on standards for forest certification in Ghana are shown in Figure 6.10 to Figure 6.16. The survey showed that respondents have a preference for using the national standard for timber certification. 94% strongly agreed or agreed that national standards should be used for forest certification in Ghana (Figure 6.10). This is consistent with the findings from the literature review and the approach being adopted by key tropical timber producing countries such as Malaysia, Indonesia, Brazil and Gabon.

Respondents also favoured the standards being accredited to either FSC or PEFC, an indication that any future model should consider the feasibility of seeking accreditation to the existing front runners in forest certification. 79.6% of respondents (returning “Strongly agree” and “Agree”) indicated that national standards should be accredited to FSC or PEFC (Figure 6.10). This is a reflection that respondents favour associating the national standards to an internationally recognised scheme as a means of achieving forest certification in Ghana. The model adopted by PEFC in endorsing national schemes is a means of promoting forest certification and hence the large area that has been certified by PEFC as compared to the FSC. This approach is also responsible for the high rate of growth of the PEFC scheme.

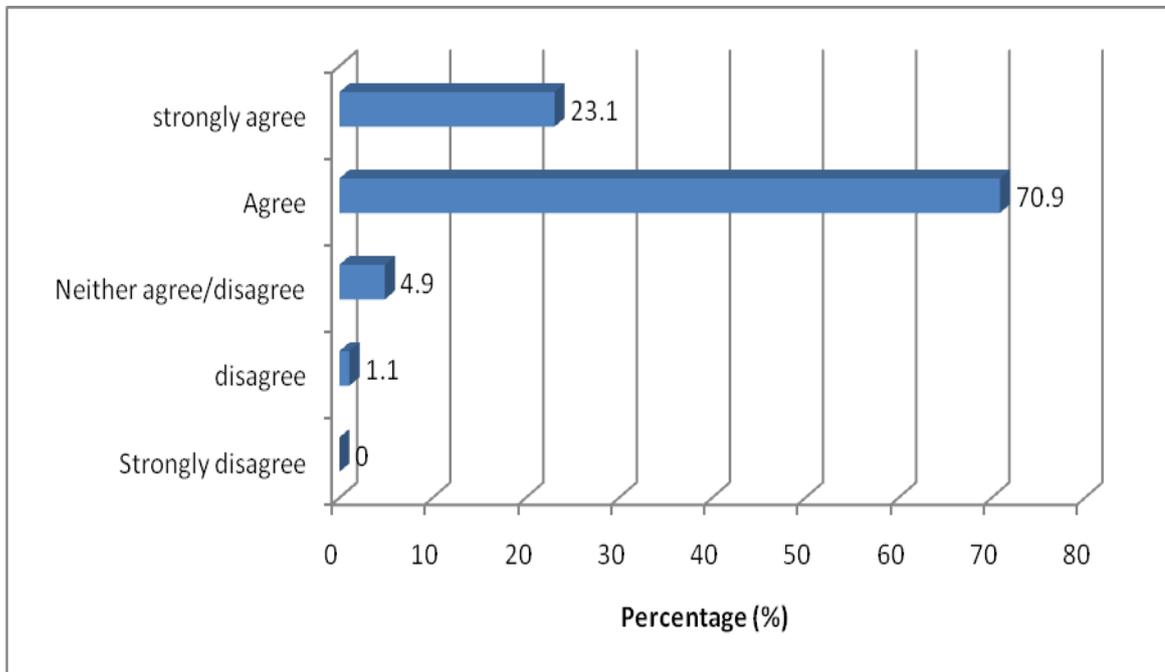


Figure 6.10 Bar graph showing proportion of responses that agreed national standards should be used for forest certification in Ghana

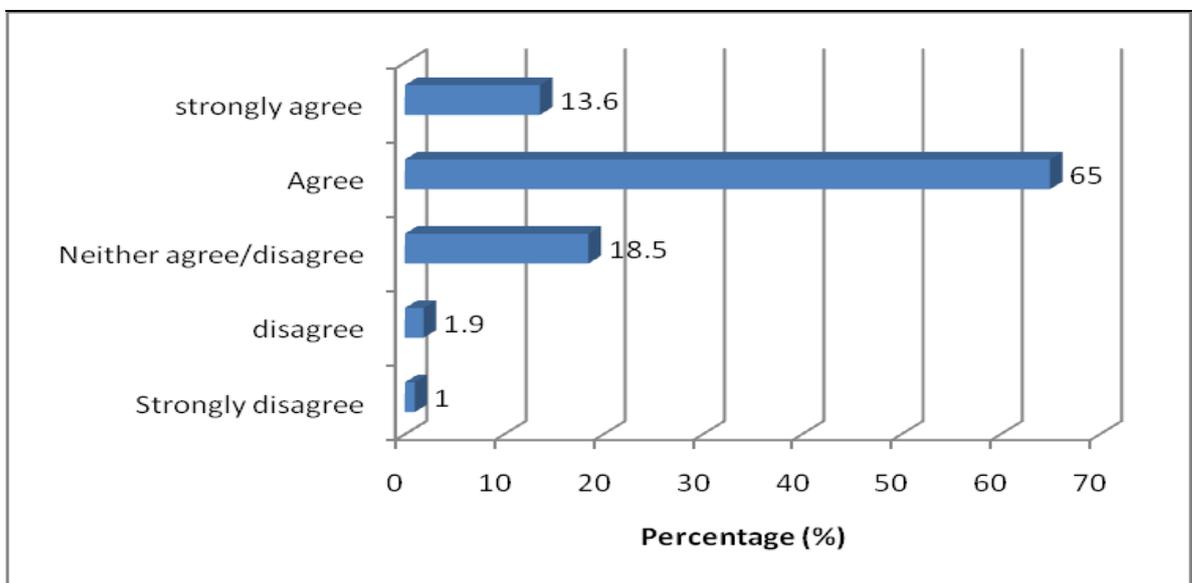


Figure 6.11 National standards to be accredited to FSC/PEFC

The survey results showed that company awareness of forest certification is low. This is reflected in Figure 6.12. Only 36.8% of respondents (returning “Strongly agree” and “Agree”) in the two groups were aware of forest certification. This reflects the low uptake of forest certification in Ghana. Despite the early engagement by Ghana in efforts to introduce forest certification it is evident from the research that the industry has not had the awareness of forest certification in Ghana.

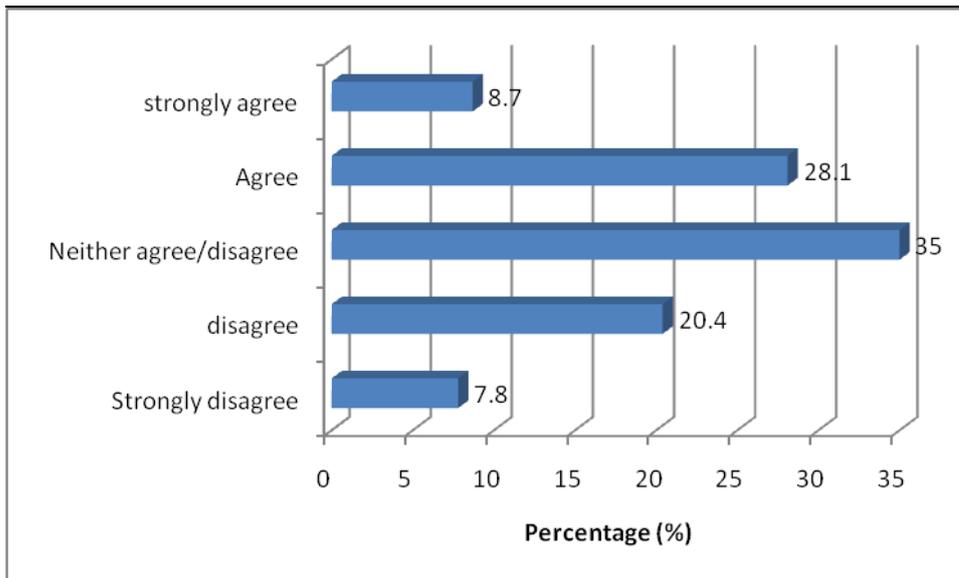


Figure 6.12 Company awareness of forest certification in Ghana

This lack of awareness is reflected in response to the question if FSC has the best standards for forest certification as shown in Figure 6.13. A clear indication of the lack of knowledge of certification systems that is operational. Given the presence of the FSC regional Office in Accra, Ghana the responses should have a high level of agreement on the FSC standard.

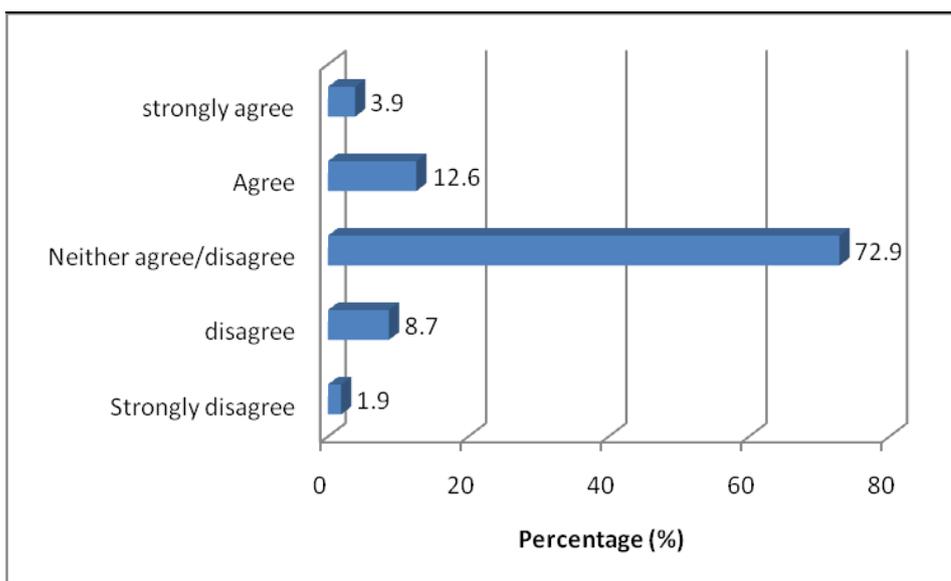


Figure 6.13 Perception of FSC Standard by Ghanaian timber firms

When respondents were asked about the use of the Pan African Forest Certification standard being used for forest certification in Ghana they appeared undecided reflecting a low support for a regional based standard by Ghanaian timber operators surveyed. The responses are shown in Figure 6.14

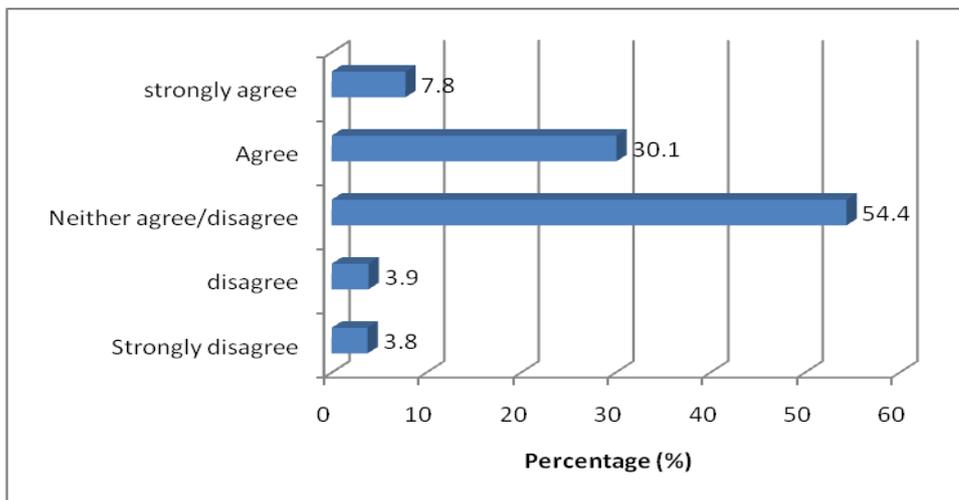


Figure 6.14 Pan African Forest Certification Standard

When respondents were asked if pursuing forest certification would be an added cost, 75.8% of them (returning either “Strongly agree” or “Agree” indicated it would be an added cost (Figure 6.15), consistent with the findings from the literature review.

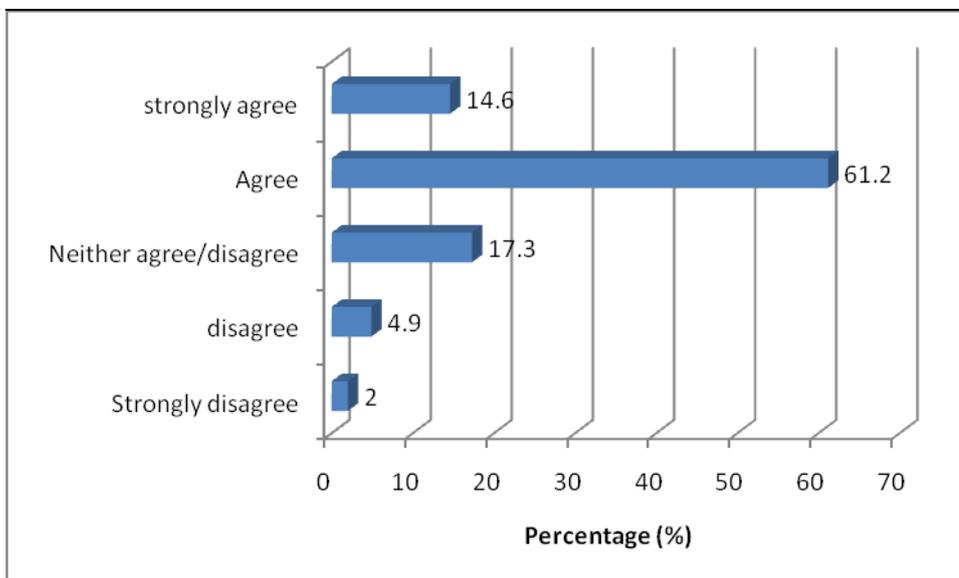


Figure 6.15 Certification an added cost

When respondents in the survey were asked about their awareness of ITTO Criteria and Indicators only 23.3% “Strongly agreed” and “Agreed” on their awareness of the Criteria and Indicators of the ITTO (Figure 6-16)., which raises questions about the effectiveness of the ITTO training programmes on C&I in tropical timber producer countries

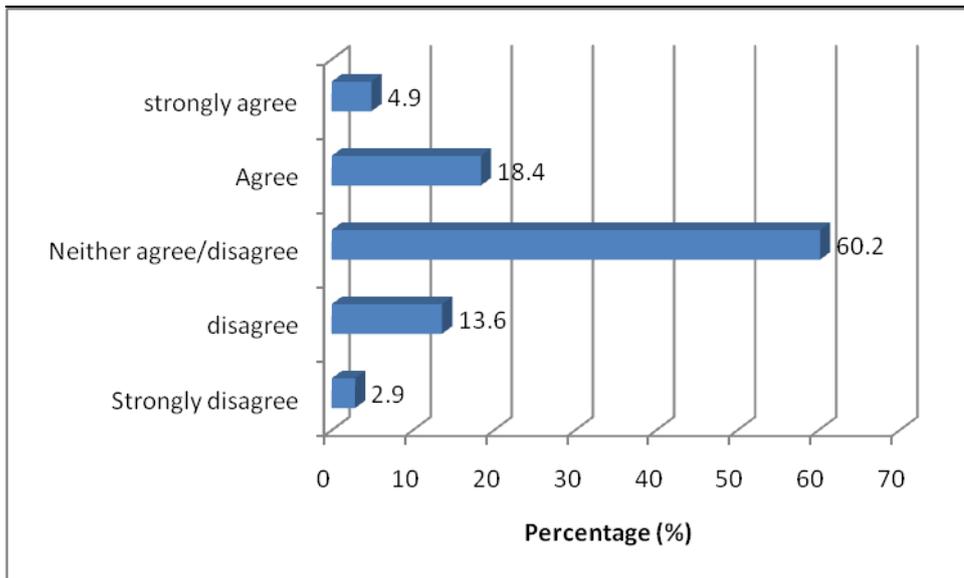


Figure 6.16 Awareness of ITTO C&I

6.3 Model for forest certification in Ghana

6.3.1 Stakeholder Consultations

Question 12 sought to establish the level of consultations in developing the standard, the certification scheme and forest management system in Ghana and the relevant responses are shown in Figure 6.17 to Figure 6.20. The responses generally point to a perception held by the industry in Ghana that there is a poor level of consultation with stakeholders in the uptake of forest certification and forest management in Ghana. Figure 6.17 shows that over 61.2% of respondents surveyed (“Disagree” and “Strongly disagree”) indicated there was a lack of consultation with industry in the development of the forest certification standard in Ghana, which could also explain the low apparent level of awareness of forest certification in Ghana.

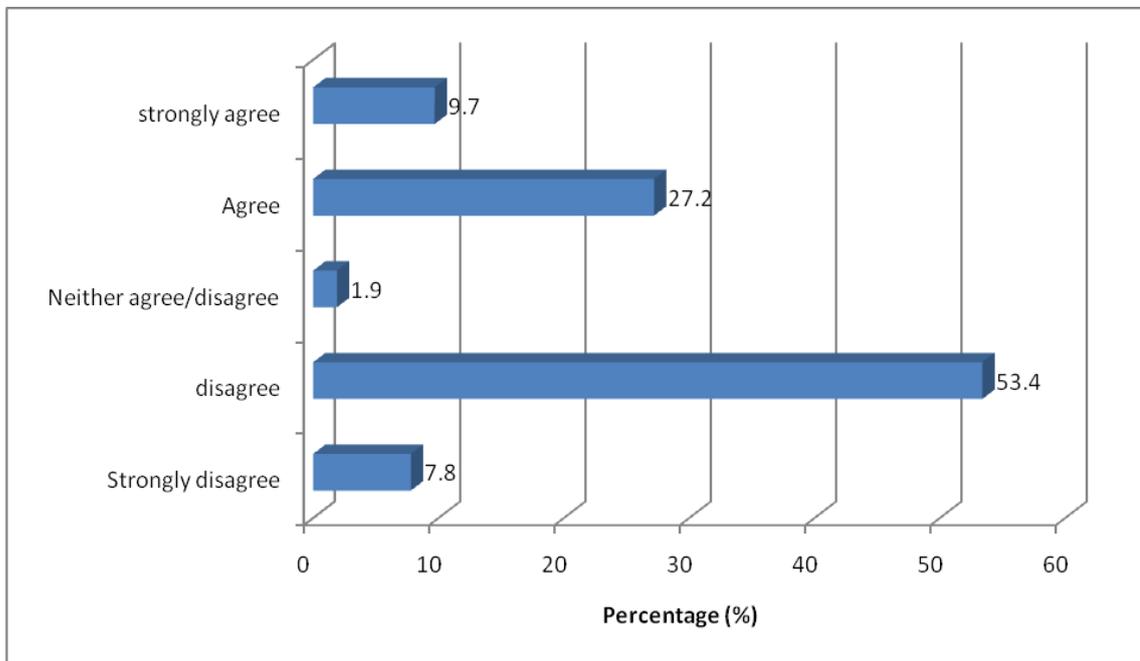


Figure 6.17 Consultation in developing forest certification in Ghana

When companies were asked if there was sufficient public debate on forest certification in Ghana, 72.8% indicated their disagreement/strong disagreement for the statement reflecting the absence of public discussions on forest certification in Ghana (Figure 6.18).

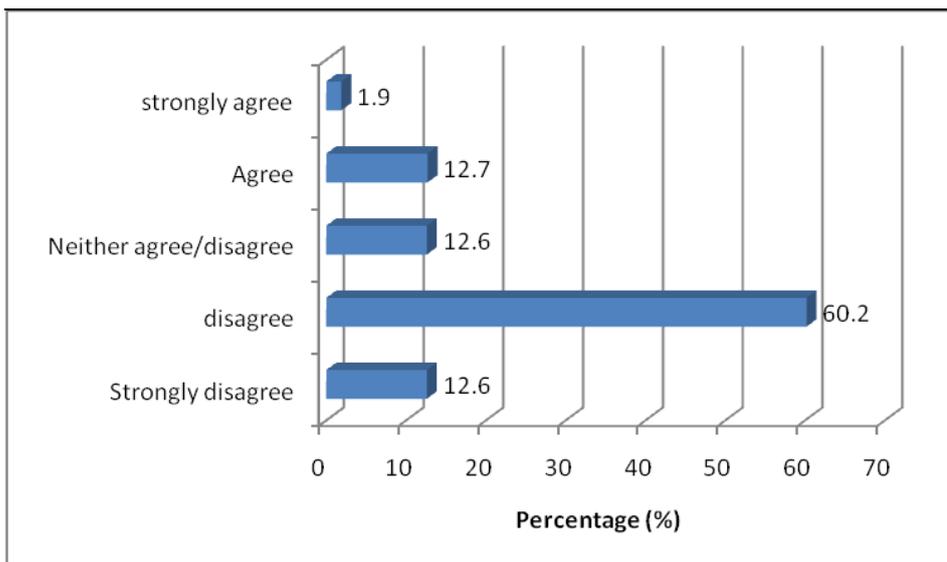


Figure 6.18 Company involvement in public debate on forest certification

When respondents were asked if there is an adequate forum for stakeholder consultations on forest certification, 76.6% of respondents indicated the lack of an adequate forum for consultations (Figure 6.19)

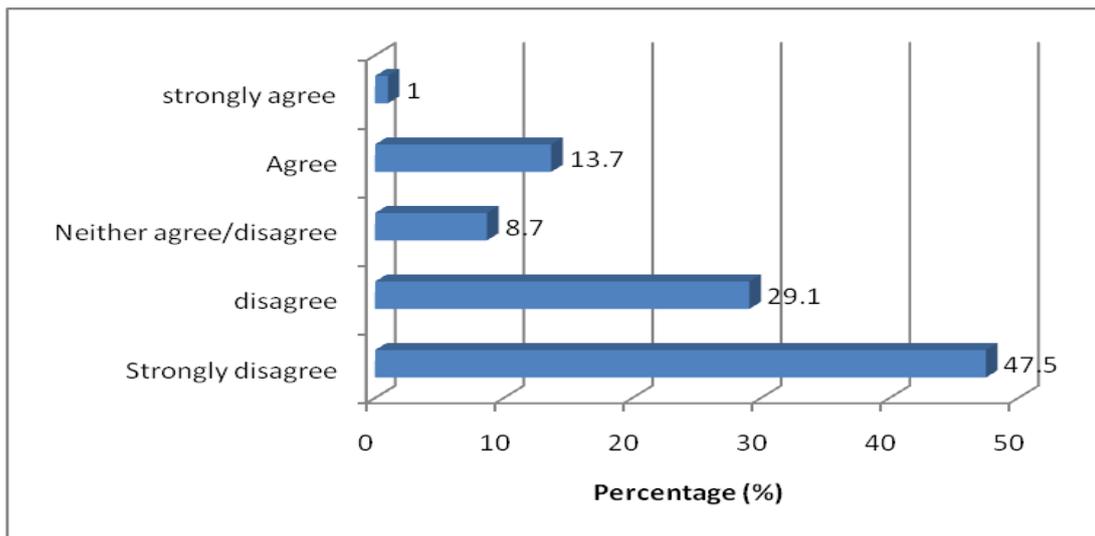


Figure 6.19 Adequate forum for consultation on forest certification lacking

56.4% of companies surveyed reported a lack of consultations on forest management (Figure 6.20). However a cross tabulation of the results in trying to reveal the within group perception shows that the LSEs feel more of a lack of consultation with 63.3% of those surveyed in the LSEs group disagreeing or strongly disagreeing with the statement that they are consulted in respect of forest management policies in Ghana. In the SMFEs category had a response rate of 53.4% (Table 6.7).

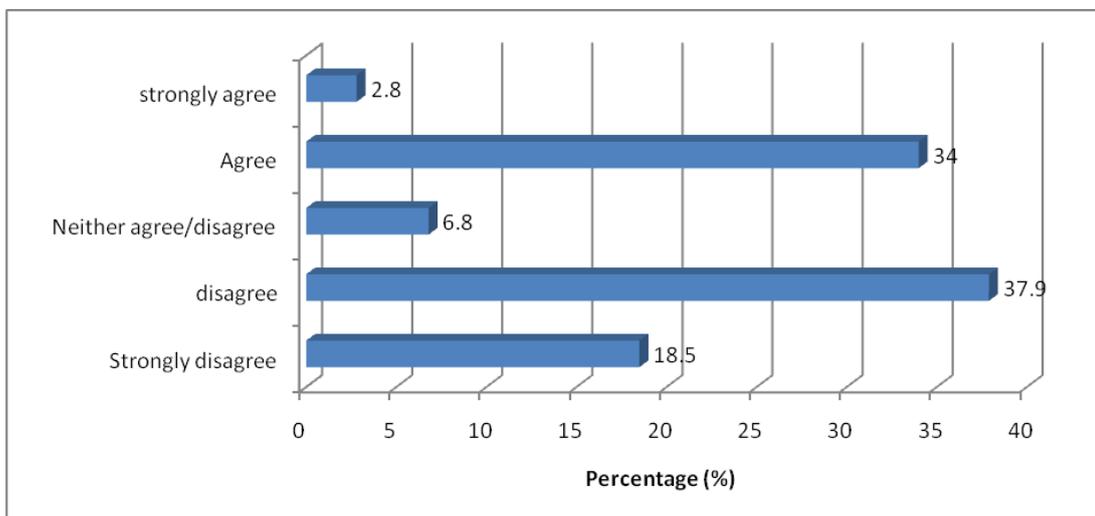


Figure 6.20 Perception of consultation on forest management

Group	Strongly Agree	Agree	Neither Agree or disagree	Disagree	Strongly disagree	Total
SMEs	2	27	5	29	10	73
LSEs	1	8	2	10	9	30
Total	3	35	7	39	19	103

Table 6.7 Cross tabulation of between group perceptions on consultations on forest Management

6.3.2 Role of Government

Any model proposed for forest certification will need to define the role of government in the development of forest certification in Ghana. The survey therefore set questions (Question 13) to test views about government intervention in facilitating forest certification. From the responses, it is abundantly clear that the timber industry in Ghana expects government to play a key role in the development of forest certification. Figure 6.21 to Figure 6.24 relate to the role of government. 96.1% of respondents perceive government playing a key role in the development of forest certification in Ghana. The respondents were however of the view that government's role should be in legislation and facilitation (Figure 6.22 & Figure 6.23). 88.4% of respondents agree ("Strongly agree" and "Agree") that government should legislate while 95.1% of respondents ("Strongly agree" and "Agree") were of the view that government should play a facilitating role.

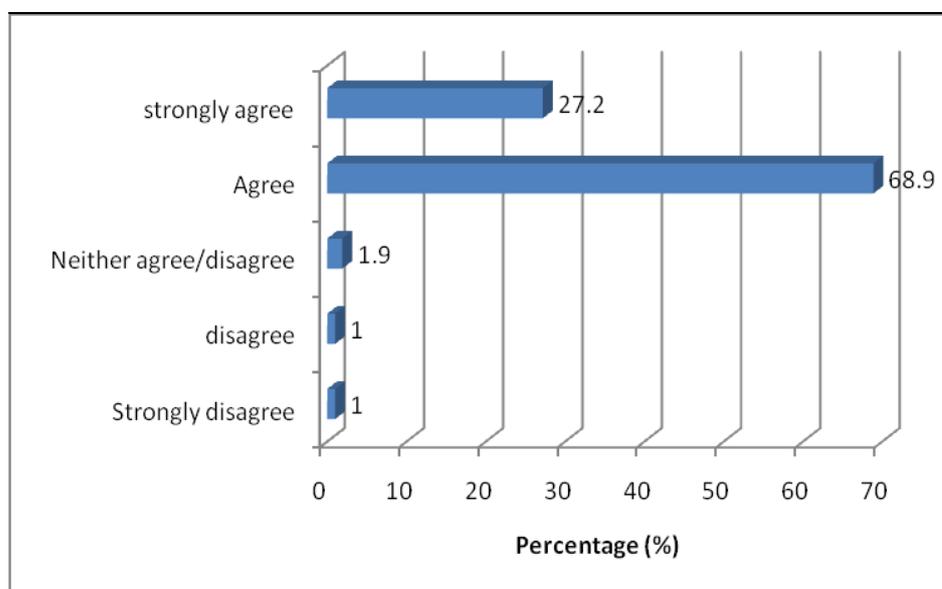


Figure 6.21 Government has key role in developing forest certification

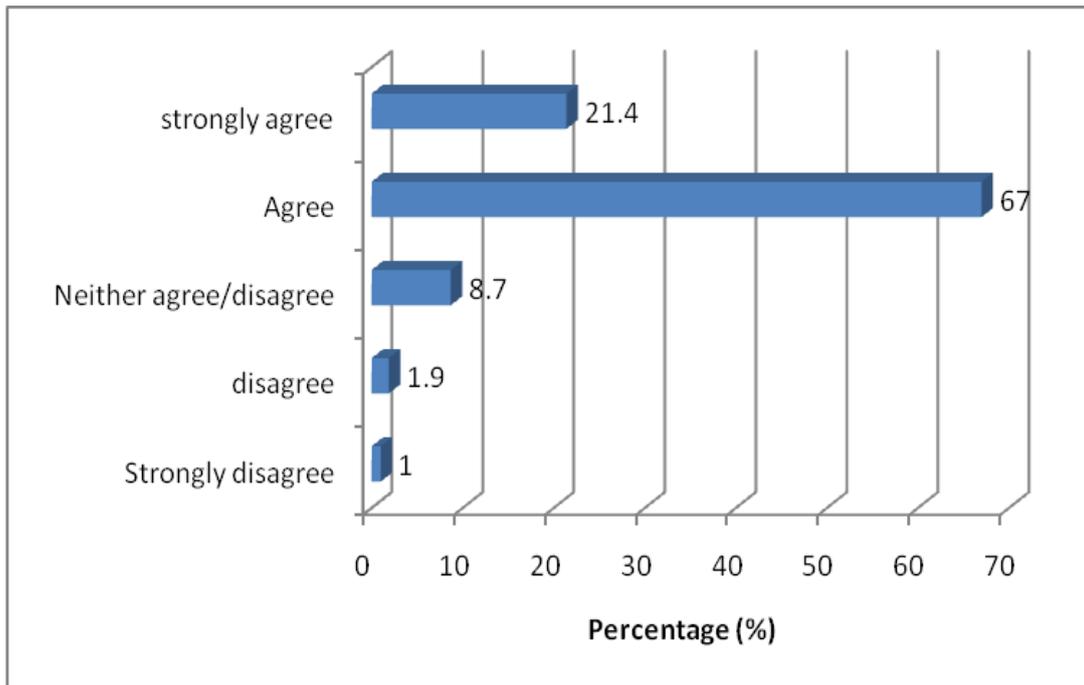


Figure 6.22 Government must introduce legislation to facilitate the development of forest certification

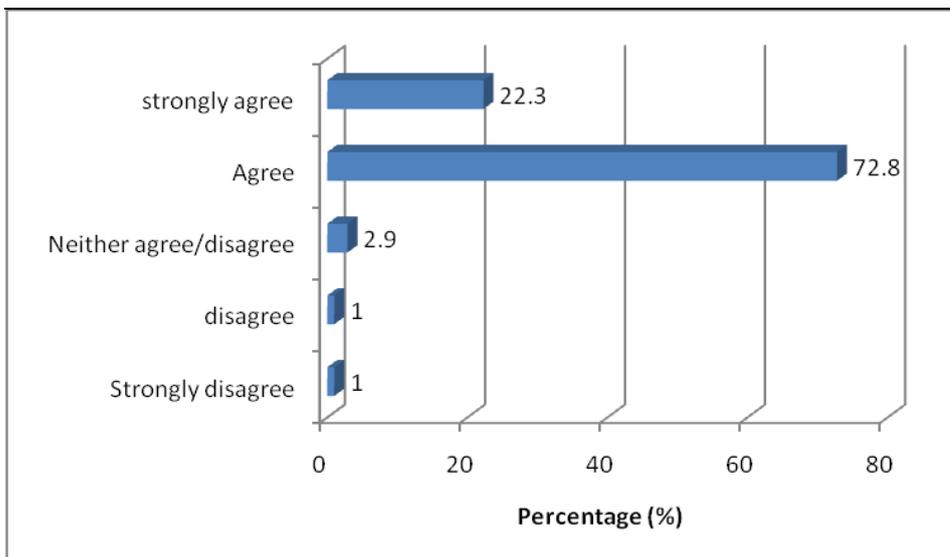


Figure 6.23 Government must facilitate the development of forest certification

68% of respondents surveyed were also of the view (“Strongly Agree” and “Agree”) that government should contribute at least 30% of the cost of certification, further emphasising their perceived role of government in supporting certification in Ghana (Figure 6.24).

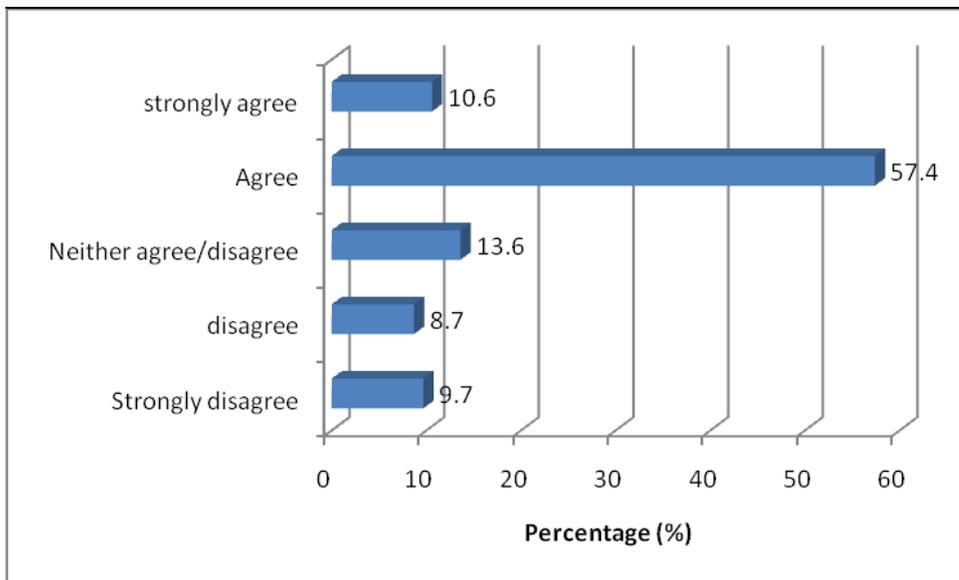


Figure 6.24 Government to contribute 30% to forest certification

Respondents of the survey did not favour NGOs promoting forest certification in Ghana. Figure 6.25 shows that 60.2% of respondents did not perceive NGOs as best in promoting forest certification in Ghana. This could be because the survey has an industry focus.

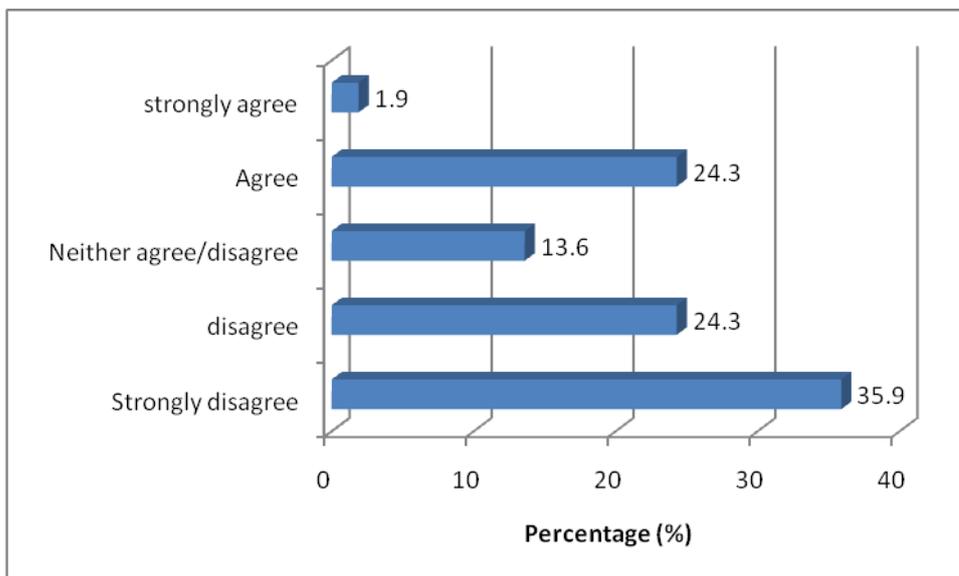


Figure 6.25 Forest certification best promoted by NGOs

The demand for certified timber products was perceived by the respondents to be linked to the export markets (Question 16). 87.3% of respondents perceived forest certification as a market tool (Figure 6.26)

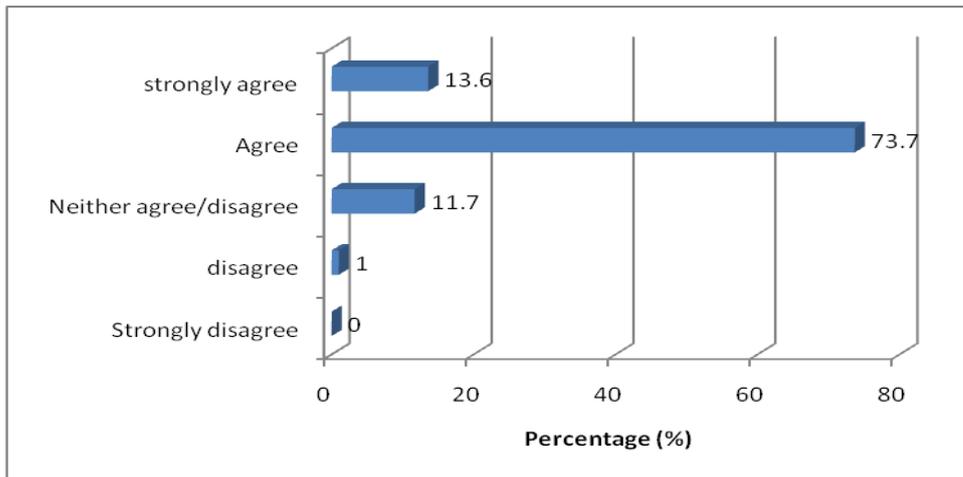


Figure 6.26 Certification is a market tool

69.9% of respondents (“Strongly Agree” and “Agree”) in the survey indicated they would pursue forest certification in response to market requirements (Figure 6.27). A mere 5.8% of respondents in the survey disagreed (“Disagree” and “Strongly disagree”) that certification was about meeting market requirements. The fact that about a quarter of respondents (24.3%) neither agreed/disagree could reflect the lack of awareness on market requirements for forest certification. The study (Question 16) however established that there was a low demand for certified timber on the domestic market with only 33% of respondents returning “Strongly agree” or “Agree”. (Figure 6.28). There appears to be a lack of interest for certified products on the domestic market. Any proposed model for forest certification in Ghana should therefore factor in the role of the domestic market in promoting forest certification.

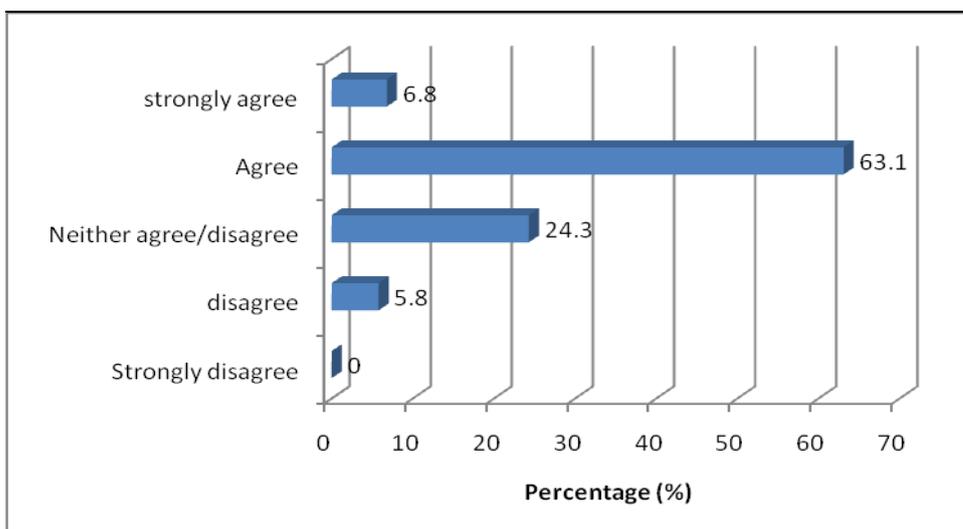


Figure 6.27 Forest certification is about meeting market requirements

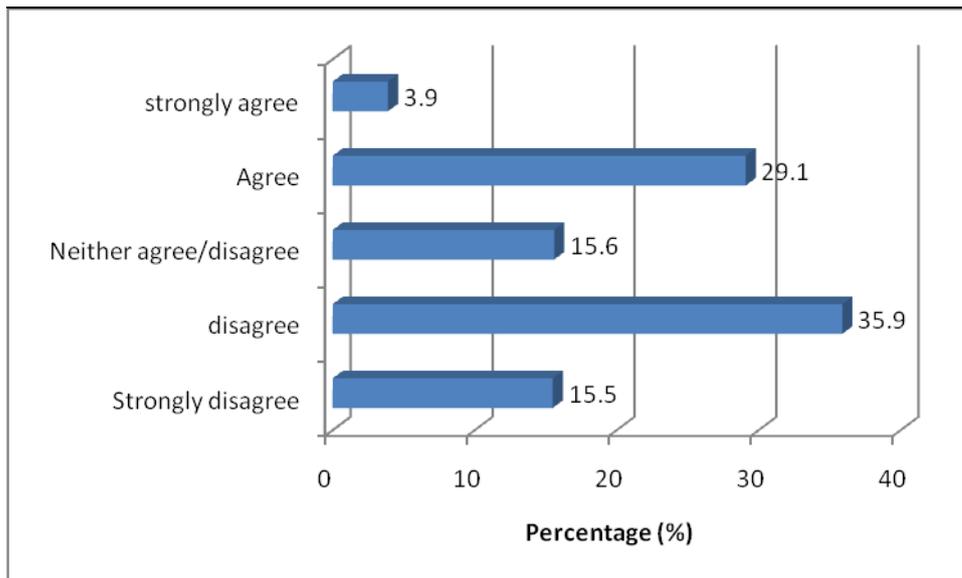


Figure 6.28 Domestic market demands timber from sustainable sources

70.9% of companies surveyed perceived that engaging in timber certification would promote their sales (Figure 6.29).

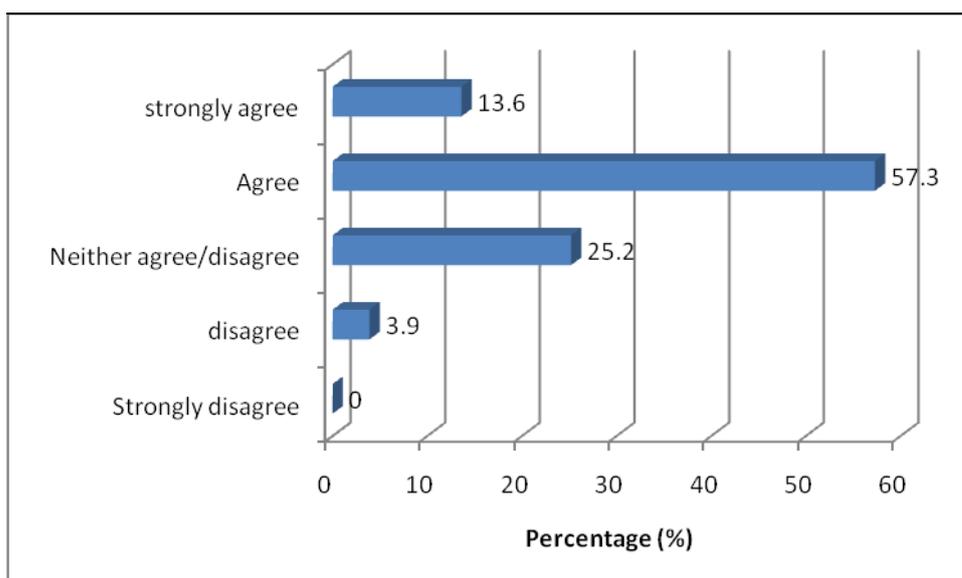


Figure 6.29 Certification would promote sales

6.3.3 Phased Approach to forest certification in Ghana

The study sought to establish the structure and focus for the model for forest certification in Ghana through Question 14 and respondents were asked a set of questions. The responses are summarised in Figure 6.30 to Figure 6.32. In particular, respondents were asked if Ghana should pursue a phased approach to

forest certification. From the survey, 90.3% of respondents (“Strongly agree” and “Agree”) indicated that Ghana should pursue a phased approach to forest certification. This is consistent with the approaches identified in the literature review.

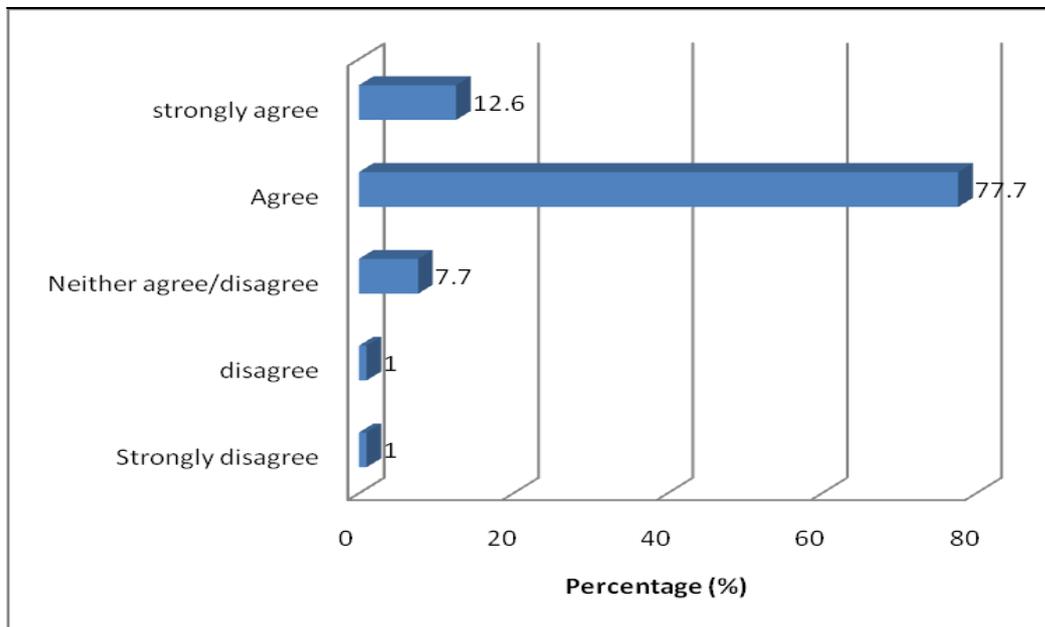


Figure 6.30 Ghana should pursue a phased approach to forest certification

When respondents were asked if the number of phases should depend on the gaps identified 72.8% of people agreed with this suggestion (Figure 6.31). This will have implications on certification since different companies would be at different stages. Any approach must then recognise the different forest management position held by companies. The model being developed should look beyond a “one size fits all” where a phased approach is adopted with the number of phases across the board. To date, all certification companies who have proposed the phased approach have done so at the broader level not taking account of requirements at the company level. However, if the desire is to promote forest certification, these differences at the company level in countries should be recognised. This is consistent with the question (Question 14) that sought to establish if the phases should be predetermined. Only 16.6% of respondents in the survey disagreed (“Disagreed” and “Agreed”) that the phases should be predetermined (Figure 6.32).

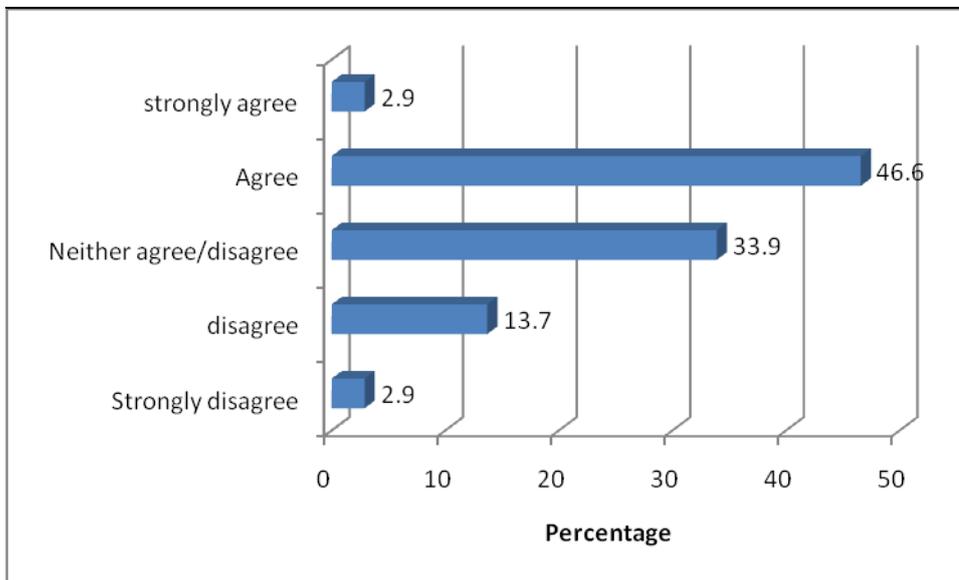


Figure 6.31 Number of phases dependent on gaps identified

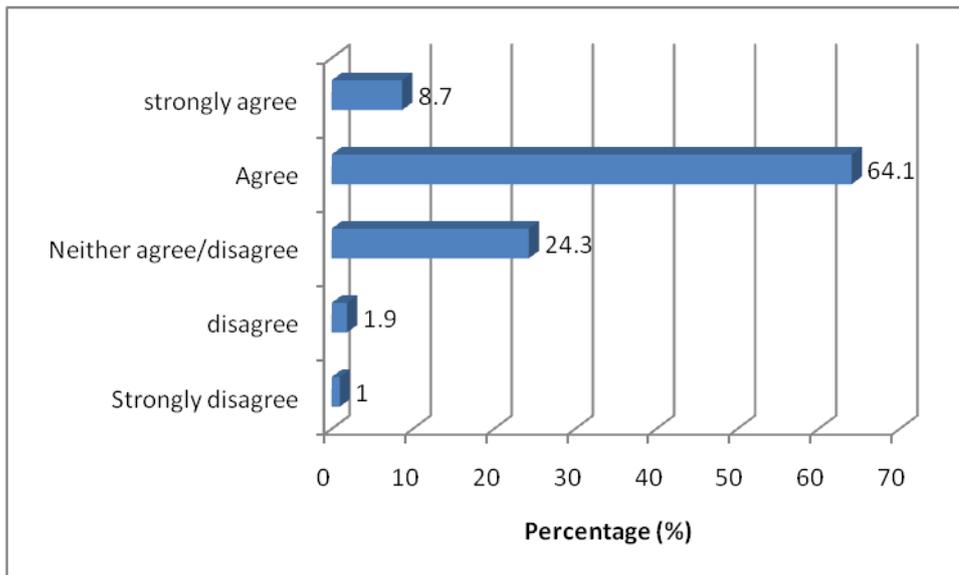


Figure 6.32 Number of phases should be predetermined

6.3.4 Elements for a model for forest certification in Ghana

Question 15 of the survey sought to obtain respondents' perceptions about those priorities for forest certification previously derived from the literature review and focus group discussions and identified governance (including stakeholder consultations, rights of local communities, workers and resource rights), markets, legal and economic frameworks as priority elements for a certification model in Ghana. Table 6.8 is the prioritisation of elements for a forest certification model in Ghana by respondents in the survey. The survey showed from respondents returning "Highest priority", High priority" and "Priority" (i.e. columns 1-3 in Table 6.8) that good legal framework (71.8%), stakeholder consultations (58.3%),

economic framework (67.0%) and resource rights (58.2%) are key elements for developing a forest certification model in Ghana. Respect of workers' rights and use rights for local communities were ranked as low priority or at best considered neutral.

	Highest priority	High priority	Priority	Neutral	Low priority	Lowest priority	No resp
Stakeholder consultations	28.2%	16.5%	13.6%	5.8%	12.6%	19.4%	3.9%
Domestic use rights for local communities	9.7%	8.7%	14.6%	18.4%	19.4%	24.3%	4.9%
Respect for workers rights	13.6%	6.8%	11.7%	29.1%	19.4%	14.6%	4.9%
Resource rights	16.5%	16.5%	25.2%	11.7%	5.8%	19.4%	4.9%
Good legal framework	46.6%	18.4%	6.8%	8.7%	6.8%	7.8%	4.9%
Economic framework	23.3%	23.3%	20.4%	12.6%	10.7%	4.9%	4.9%
Total	23.0%	15.0%	15.4%	14.4%	12.4%	15.1%	4.7%

Table 6.8 Respondents' prioritisation of Elements for the Certification Model (Derived from Question 15)

As a group 53.4% of respondents prioritized the elements "Stakeholder consultations", "Domestic use rights for local communities", "Resource rights", "Good legal framework" and "Economic framework" while 27.5% of respondents rated the elements as low priority as a group. These elements can therefore be considered for inclusion in a model for forest certification. Only 33.0% of respondents considered domestic use rights for communities a priority. Respect for workers rights endorsed by 32.1% of respondents was also not considered a priority though in many certification schemes it is a requirement. This should therefore guide the elements to be considered in the different phases in the development of a certification scheme for Ghana.

6.4 Tests of hypotheses

To further strengthen the analysis of the survey, the outcomes of the literature review and to enhance the development of the process model for forest certification in Ghana, five hypotheses were formulated and tested. The results of the hypotheses testing are presented in Tables 6.9 to 6.16. The hypothesis testing is done at the

95% confidence level. So the hypothesis will be accepted if $p = 0.05$. Variables are considered well correlated if the correlation is more than 0.5.

The hypotheses are:

Hypothesis 1: Government support will promote the uptake of forest certification

Hypothesis 2: Poor stakeholder engagement is responsible for the slow growth of forest certification in Ghana.

Hypothesis 3: Timber firms in Ghana pursue forest certification to gain access to markets.

Hypothesis 4: Implementation of a national scheme for forest certification will see more companies pursuing forest certification in Ghana.

Hypothesis 5: The size of company in the timber industry is responsible for its decision to pursue forest certification.

HYPOTHESIS 1:

Government support will promote the uptake of forest certification

This hypothesis seeks to test the theory that the role and extent of engagement by government in promoting the development of forest certification in Ghana. It seeks to establish if government support and engagement will encourage the uptake of forest certification in Ghana.

The overall relationship of what respondents perceived should be government's role and engagement in promoting the uptake of forest certification in Ghana are presented in Table 6.9 (Derived from responses to Question 13).

Variables	Mean	Standard. Deviation	Total Number
Government has key role in FC	4.24	.693	103
Government to introduce legislation for FC	4.67	7.259	103
Government to facilitate FC	4.16	.711	103
Forest certification should be voluntary	2.80	1.665	103
Government must contribute at least 30% for FC	3.45	1.419	103
Forest certification best promoted by NGOs	2.28	1.587	103

Table 6.9 Descriptive statistics for government role and engagement for forest certification

The descriptive statistics demonstrate that the shared view of the majority is that Government intervention is important in promoting the uptake of forest certification (key role = 4.24; facilitate = 4.16); most crucially by introducing legislation for forest certification (mean = 4.67; 88.4% either agree or strongly agree). The relatively low support for forest certification being voluntary (mean = 2.80) further reflects the desire to see government providing a regulatory framework to promote forest certification in Ghana. Moreover, legislation (4.67) is seen as being more important than financial support (30% contribution from Government = 3.45). Meanwhile, the majority of respondents (60.2%) do not believe NGOs have a role to play in forest certification in Ghana (mean value = 2.28).

Variables	Coefficient (r)	t-statistic	β-statistic	Probability
Government has key role in FC	-.106	-.079	-.503	.616
Government to introduce legislation for FC	.032	.165	1.448	.151
Government to facilitate FC	-.102	-.065	-.428	.669
Forest certification should be voluntary	.014	.131	1.203	.232
Government must contribute at least 30% for FC	-.135	-.009	-.076	.939
Forest certification best promoted by NGOs	-.257	-.312	-2.630	.010
R-square				.104
F-statistic				1.849
Prob. (F-statistic)				.098

Dependent variable: Engaged in forest certification in Ghana

Table 6.10 Regression results showing government support for the growth of forest certification in Ghana

The descriptive statistics corroborate the literature review in indicating that government support is a necessary requirement for the development of forest certification. Table 6.10 presents the results from a statistical comparison between the responses to Question 13 (Government support) and the responses to Question 10 (current company engagement in forest certification). There is no direct correlation between a company's existing engagement or not with forest certification (with Question 10 showing 10.7% of companies currently participating and 88.3% of companies not participating) and respondent views about Government role in promoting forest certification (Question 13) [$R^2 = 104$; $F(6,102) = 1.849$, $p = \text{not significant (ns)}$]. In other words, the vast majority of stakeholders (for instance 88.4% believing in the importance of legislation) believe that Government intervention is crucial for the implementation of forest certification, irrespective of current company practices.

When one then examines the variable "Forest certification best promoted by NGOs" the following correlation is obtained:

- Forest certification best promoted by NGOs ($r = -.257$, $p < .05$).

The inverse relationship between NGOs' promotion of forest certification and the growth of forest certification in Ghana means that intensified action by Non Governmental Organisations in promoting forest certification will reduce the growth of forest certification in Ghana. This implies that NGOs cannot be a potential group in the development and promotion of forest certification in Ghana.

The literature review has shown a high level of engagement of NGOs in the development and promotion of forest certification around the world (e.g. FSC). Again this could be as a result of the composition of respondents being mainly industry operatives that happen to be suspicious of the actions of NGOs that have championed improved forest governance some of which relates to the allocation of resources and sharing of benefits. This is not popular with industry and hence their response that does not encourage the involvement of NGOs in forest certification. In their view the involvement of NGOs may imply more stringent conditions and requirements.

Therefore respondents do not see government or NGOs as responsible for taking leadership in the promotion of forest certification. Respondents see government intervention more of providing the regulatory framework to promote certification in Ghana rather than providing support, particularly financial support. It can be inferred that the respondents would rather prefer an industry led initiative in the promotion of certification in Ghana. This will be consistent with the PEFC, CSA and the SFI processes. Hence the hypothesis 1 that “*Government support promotes the uptake of forest certification*” was rejected at the 95% confidence level and can be attributed to the fact that industry, which was the group that was surveyed expects an industry led initiative in promoting forest certification.

HYPOTHESIS 2:

Poor stakeholder engagement is responsible for the slow growth of forest certification.

This hypothesis sought to test the relationship between stakeholder engagement and forest certification in Ghana. This extent of stakeholder engagement in forest certification is a reflection of the level of forest governance in Ghana. Forest governance was identified as one of the key policy instruments for promoting forest certification. In the research the stakeholder group considered comprised of the timber operators. This was aimed at providing a focus on the operatives and those engaged in managing, harvesting, processing and trading of the forest resources. The results are presented in Table 6.11 and 6.12. Descriptive statistics for stakeholders' engagement on certification is shown in Table 6.11.

Variables	Mean	Standard. Deviation	Total Number
Company consulted in developing FC	2.59	1.562	103
Company involved in public debate on Forest Certification	1.94	1.620	103
Adequate forum for stakeholder consultation on FC	1.54	1.526	103
Company engaged in developing domestic policies	2.61	1.436	103
ENGO's dominate debate on FC	1.88	1.767	103
Landowners are consulted on Forest Certification	2.75	7.630	103
Communities are consulted	1.94	1.965	103

Table 6.11 Descriptive statistics for stakeholder engagement in forest certification

As was established in Figure 6.9 just a few timber firms are engaged in forest certification (represented by 10.6% of the firms) in Ghana. The mean and standard deviation results for stakeholders' engagement on certification are presented in Table 6.11. The mean values reflect very low levels of awareness and engagement regarding forest certification by stakeholders in Ghana. There are some levels of differences among the mean values for the various defining constructs of stakeholders' engagement of forest certification (that is the independent variables). For instance, in the model, activities such as consultation with landowners on forest certification (Mean = 2.75), engaging companies in developing domestic policies (Mean = 2.61) and consulting companies in developing forest certification (Mean = 2.59) appeared to be higher than the other activities such as the forum for stakeholder consultation on forest certification (Mean = 1.54). The test for the relationship between stakeholder engagement in certification and the development of forest certification is presented in Table 6.12.

Variables	Coefficient (r)	t-statistic	β-statistic	Probability
Company consulted in developing FC	.010	.045	.360	.719
Company involved in public debate on Forest Certification	-.227	-.231	-1.650	.102
Adequate forum for stakeholder consultation on FC	-.166	.044	.294	.769
Company engaged in developing domestic policies	-.028	.049	.392	.696
ENGO's dominate debate on FC	-.220	-.162	-1.497	.138
Landowners are consulted on Forest Certification	-.020	.213	1.839	.069
Communities are consulted	-.284	-.295	-2.695	.008
<i>R-square</i>				.159
<i>F-statistic</i>				2.571
<i>Prob. (F-statistic)</i>				.018

Dependent variable: Development of forest certification in Ghana

Table 6.12 Regression results showing stakeholders' engagement and the development of forest certification

The results presented in Table 6.12 indicate that stakeholders' engagement on certification correlated positively and significantly with the growth of forest certification [$R^2 = .159$; $F(7, 102) = 2.571$, $p < .05$]. This implies that the engagement in forest certification by timber firms is dependent on the level of stakeholder engagement on certification. In this case, lack of stakeholders' awareness on certification negatively affects the pace at which forest certification pursued by Ghanaian Timber firms. Thus, the hypothesis that "*Lack of stakeholder engagement on certification is responsible for the slow growth of forest certification*" is supported. This assertion is supported by the literature review which identified stakeholder consultations as a pre-condition for certification.

In analysing the relationship between the various defining variables of stakeholder engagement on certification and the development of forest certification, a significant positive relationship has been established between all variables constituting stakeholder engagement on certification. However, it is only the variable on community consultations that has a probability less than 0.05 ($p < 0.05$). The following are the correlations obtained:

- Company consulted in developing forest certification ($r = .010$, $p = ns$);

- Company involved in public debate on Forest Certification ($r = -.227$, $p = ns$);
- Adequate forum for stakeholder consultation on Forest Certification ($r = -.166$, $p = ns$);
- Company engaged in developing domestic policies ($r = -.028$, $p = ns$);
- NGO's dominate debate on Forest Certification ($r = -.220$, $p = ns$);
- landowners are consulted on Forest Certification ($r = -.020$, $p = ns$) and
- Communities are consulted ($r = -.284$, $p < .05$).

HYPOTHESIS 3:

Timber firms in Ghana pursue forest certification to gain access to markets.

This hypothesis seeks to test if access to markets is the reason for timber firms in Ghana to pursue forest certification. The construct of independent variables which relate to the market demand for timber from sustainable managed forests, domestic demand, company response to market demand, enhancement of sales, meeting market requirements and Forest certification as a market instrument for promoting sustainable forest management are run against the dependent variable of firms' pursuance of forest certification in Table 6.13.

Variables	Mean	Standard. Deviation	Total Number
Export markets demand timber from sustainable managed forests	3.65	1.446	103
There is domestic demand for timber from sustainable managed forests	2.58	1.465	103
Our company will pursue forest certification in response to market demands	4.44	4.029	103
Forest certification will enhance timber product sales	3.60	1.396	103
Forest Certification is about meeting market requirements	3.90	4.310	103
Forest certification is a market tool for promoting sustainable forest management	3.83	1.294	103

Table 6.13 Descriptive statistics for pursuance of forest certification by timber firms

The Results presented in Table 6.14 indicate the mean and standard deviation values for Ghanaian timber firms pursuing forest certification to gain access to markets. The mean values indicate a noticeable difference in the reason and extent to which Ghanaian timber firms pursue forest certification. The pursuance of forest certification in response to demands in market requirements variable being the

highest (Mean=4.44) whilst the variable related to domestic demand for timber from sustainable managed forests is the lowest (Mean=2.58) in terms of pursuance of forest certification with the aim of gaining access to markets. This is a reflection of the lack of demand for forest certification on the domestic market but provides an opportunity for promoting forest certification in the future and should be factored into any model to promote forest certification in Ghana. It also reflects that certification is not an issue on the domestic market. Respondents generally perceived forest certification as a market tool for promoting sustainable forest management with a high score (Mean=3.83). The standard multiple regression is used to test for the significance of the relationship between all the independent variables (markets) and the dependent variable (Firms pursuance of forest certification).

Variables	Coefficient (r)	t-statistic	β-statistic	Probability
Export markets demand timber from sustainable managed forests	-.128	-.108	-.846	.400
There is domestic demand for timber from sustainable managed forests	-.121	-.083	-.679	.499
Our company will pursue forest certification in response to market demands	.038	.037	.356	.722
Forest certification will enhance timber product sales	-.054	.029	.195	.846
Forest Certification is about meeting market requirements	.043	.048	.452	.652
Forest certification is a market tool for promoting sustainable forest management	-.047	-.006	-.046	.963
<i>R-square</i>				.026
<i>F-statistic</i>				.426
<i>Prob. (F-statistic)</i>				.860

Dependent variable: Pursuance of forest certification

Table 6.14 Regression results showing timber firms pursuance of forest certification

The results presented in Table 6.14 reveal an insignificant positive relationship between Ghanaian timber firms' pursuance of forest certification and access to markets [$R^2 = 0.026$; $F(6, 102) = 0.426$, $p = ns$]. This implies that the desire for Ghanaian timber firms to gain access to markets is independent of the activities

aimed at pursuing forest certification. The survey therefore shows that the hypothesis “*Timber firms in Ghana pursue forest certification to gain access to markets*” is therefore not supported. So although from the literature review firms pursue certification as a market instrument and are still perceived as such by the researcher, the results of the survey do not appear to consider market access as the reason for companies in Ghana pursuing forest certification. Market access does not appear from the survey, to be a driving force for timber firms in Ghana to engage in forest certification.

The analysis of the relationship between the various independent variables (that is, individual variables that define timber firm’s access to markets) and the dependent variable (pursuance of forest certification) revealed that none of the access to market variables correlated significantly with the dependent variable (pursuance of forest certification). The following correlations are obtained:

- Export markets demand timber from sustainable managed forests ($r = -.128$, $p = ns$);
- There is domestic demand for timber from sustainable managed forests ($r = -.121$, $p = ns$);
- our company will pursue forest certification in response to market demands ($r = .038$, $p = ns$);
- Forest certification will enhance timber product sales ($r = -.054$, $p = ns$);
- Forest Certification is about meeting market requirements ($r = .043$, $p = ns$) and
- Forest certification is a market tool for promoting sustainable forest management ($r = -.047$, $p = ns$).

These indicate that the respondents do not perceive market access as a basis for pursuing forest certification and could explain the slow uptake of forest certification in Ghana given that firms do not experience the pressure from the markets to pursue forest certification. Additionally, from Chapter 3, it is there is a growing diversification of markets for Ghana wood products resulting in a shift from the environmentally sensitive markets of EU to the West African market. This is reducing the potential of market tools in promoting forest certification in Ghana.

HYPOTHESIS 4:

Implementation of a national scheme for forest certification will see more companies pursuing forest certification in Ghana.

This hypothesis sought to test if implementing a national scheme would promote forest certification in Ghana and thereby encourage more companies to pursue forest certification. The results are shown in Table 6.15 and Table 6.16.

Variables	Mean	Standard. Deviation	Total Number
National standards used for forest certification	4.10	.975	103
National standards accredited to FSC.PEFC	3.83	1.279	103
Company awareness of timber certification	2.11	1.894	103
FSC has best standards for forest certification	1.39	1.880	103
Pan African Forest certification standards used	2.32	2.078	103
Meeting certification standards and added cost	3.47	1.571	103
awareness of ITTO Criteria and Indicators	1.52	1.857	103

Table 6.15 Descriptive statistics for national standards for forest certification and companies' pursuance of forest certification

The data presented in Table 6.15 show the mean and standard deviation figures used to evaluate the relationship between national standard for forest certification and companies' pursuance of forest certification. A cursory look at the various mean values indicate that "national standards used for forest certification" as a single variable had more impact (Mean = 4.10) than the other variables in inducing or stimulating Ghanaian timber firms to pursue forest certification. The relationship between Implementation of a national scheme for forest certification and companies' pursuance of forest certification in Ghana is presented in Table 6.16.

Variables	Coefficient (r)	t-statistic	β-statistic	Probability
National standards used for forest certification	-.160	-.100	-.872	.385
National standards accredited to FSC.PEFC	-.122	.058	.457	.649
Company awareness of timber certification	-.347	-.167	-1.285	.202
FSC has best standards for forest certification	-.365	-.201	-1.550	.124
Pan African Forest certification standards used	-.174	.016	.148	.883
Meeting certification standards and added cost	-.078	.077	.736	.464
awareness of ITTO Criteria and Indicators	-.361	-.155	-1.210	.229
<i>R-square</i>				.187
F-statistic				3.130
Prob. (F-statistic)				.005

Dependent variable: Companies' pursuance of forest certification in Ghana

Table 6.16 Regression results showing national standards on certification and pursuance of forest certification

Referring to the data presented in Table 6.16, implementation of a national scheme for forest certification as a model correlated positively and significantly with timber companies' pursuing forest certification in Ghana [$R^2 = .187$; $F(7, 102) = 3.130$, $p < .005$]. This implies that the tendency for more timber companies to pursue forest certification in Ghana is crucially dependent on the implementation of a national scheme for forest certification. The hypothesis that implementation of a national standard for forest certification will see more companies pursuing forest certification in Ghana is therefore supported. The literature review established that this is the approach adopted by UK Wood Assurance scheme, Malaysia through its MTCC and the PEFC.

Evaluation the relationship between the independent variables within the implementation of a national scheme for forest certification model and the dependent variable (companies' pursuance of forest certification in Ghana) revealed an insignificant relationship between all the independent variables and the dependent variables as follows:

- National standards used for forest certification ($r = -.160$, $p = ns$);
- National standards accredited to FSC.PEFC ($r = -.122$, $p = ns$);
- Company awareness of timber certification ($r = -.347$, $p = ns$);

- FSC has best standards for forest certification ($r = -.365$, $p = ns$);
- Pan African Forest certification standards used ($r = -.174$, $p = ns$);
- Meeting certification standards and added cost ($r = -.078$, $p = ns$); and
- Awareness of ITTO criteria and indicators ($r = -.361$, $p = ns$).

Hypothesis 5:

The Size of company in the timber industry is responsible for its decision to pursue forest certification.

Under this hypothesis the independent t-test was used to establish if there is a difference in the two groups’ decision to pursue forest certification. The result of the t-test is shown in Table 6.17.

Dependent variable	Size of Firm	N	Mean	SD	t	df	p
Decision of timber firms to pursue forest certification	Small & Medium Size Enterprises	73	1.99	.117	5.35	101	.001
	Large Scale Enterprises	30	1.67	.479			

Table 6.17 Independent t-test for size of company and decision to pursue forest certification

The independent t-test results presented in the Table 6.17 indicates that there is a significant difference between the two groups, namely the SMFEs and the LSEs. The results show that the size of firm and the decision to pursue forest certification (N=103, $t=5.35$, $p<.001$) is significant at the 95% confidence level. Thus, the hypothesis that “*The size of company in the timber industry is responsible for its decision to pursue forest certification*” is therefore supported. In this instance, small and medium scale enterprises are (mean = 1.99) more predisposed to pursue forest certification than for large scale enterprises (Mean = 1.67). The LSEs are engaged in more than one area of activity, particularly in the value added product sector.

To further elaborate this difference between SMFEs and LSEs the response of the two groups in their perception of a model for forest certification in Ghana was analysed and this showed a significant difference in the two groups as reflected in Table 6.18.

	Number of Employees	N	Mean	SD	df	t	p
Total Model for Forest Certification in Ghana	SME or 1-29	73	18.69	8.01	101	-.976	.002
	LSE or 30+	30	20.23	4.90			

Table 6.18 Independent t-test results showing the difference in the preference of a Model for forest certification in Ghana

The table above clearly shows a difference in the preference of a model for forest certification in Ghana between SMEs and LSEs in the timber industry [$t(101) = -.976, p < 0.05$]. This implies that SMEs and LSEs in the Ghanaian timber industry would pursue significantly different approaches to developing a model for forest certification in Ghana, indicating that the size of business determines whether a timber firm will pursue forest certification and the approaches that it would adopt would be determined by the size. A critical look at the table above indicates a notable difference between LSEs and SMEs with LSEs, being committed to engagement in the development of a model for forest certification in Ghana [LSEs (x) = 20.23, SMEs (x) = 18.69].

6.5 Conclusion

The respondents had a high proportion of top management in the firms surveyed responding to the questionnaire reflecting the seriousness attached to the research work by the timber industry in Ghana. 73% of Managing Directors responded to the survey. 71% of respondents were from the SMFEs and 29% from the LSEs category which is a reflection of the structure of the Ghana timber industry dominated by SMFEs. Sawmills accounted for 60% of respondents in the survey. This again mirrors the industry structure with a high level of primary processing and slow growth of the tertiary processing sector. Respondents however varied from loggers to integrated mills. A high number of respondents did not own forest concession, either as TUPs or TUCs, indicating that a high proportion of respondents purchased their raw material implying the need for an effective chain of custody system if forest certification in Ghana is to be credible. 36% of respondents had TUPs and 27% had TUCs. Only 12% of those firms surveyed had engaged in Forest Certification. This is mainly the LSEs that are members of the Global Forest and Trade Network, which reflects the response of companies that are engaged in forest certification though no certified timber is being sold by Ghana. The survey showed that SMFEs were more likely to engage in forest certification than the LSEs. Timber firms in Ghana expect certified timber to

provide them with a price premium. From the survey 78% of respondents expected price premiums for certified timber in excess of 6%.

Respondents identified finance and illegal logging as key constraints to forest certification in Ghana. Respondents favoured the use of national standards for forest certification in Ghana. Respondents were however, of the view that the national scheme should be accredited to an existing scheme such as the FSC or PEFC. Interestingly, respondents did not favour the use of the Pan African Forest Certification Scheme. This also reflects the poor state of the African Timber Organization that is promoting the scheme. For almost a decade the African Timber Organization has not been able to hold its annual Ministerial meetings and the organizations finances have been in a poor state as a result of unpaid dues from its members.

The respondents in the survey perceived forest certification as an added cost and consistent with the literature reviewed. The VPA process should therefore be used to underwrite the cost of certification to reduce the cost burden to the industry. Government providing a national based system for verifying legality as in the VPA process can promote certification in Ghana It will allow at minimal cost to industry to attain verified legal status and bridge the gap in the requirements for full certification given that the VPA legality standard has a high component of the social and environmental considerations.

Although ITTO has been promoting its Criteria and Indicators (C&I) for sustainable forest management among tropical timber producing countries it was indicated in the survey that there was low awareness of the ITTO C&I. The survey identified priority elements for a model for forest certification in Ghana. These were legal framework (71.8%), stakeholder consultations (58.3%), economic framework (67.0%) and resource rights (58.2%).

In respect of the model, the survey revealed support for a phased approach to forest certification in Ghana. The survey, however, showed that the number of phases should be dependent on the gaps identified in the baseline study and the phases must not be pre-determined. Over 60% of those surveyed indicated the lack of stakeholder consultations in the development of forest certification in Ghana. It showed the lack of a forum for discussing forest certification.

Respondents rated as high the role of government in developing forest certification. The survey showed government should play a key role in developing forest certification and supported government playing a facilitating role while providing the regulatory framework for forest certification. Timber firms expected government to contribute 30% of the cost of forest certification. The survey did not, however, support NGOs promoting forest certification in Ghana.

Certification was seen as a market tool. However, this was driven by the export market rather than the domestic market which is reported by the survey to have a very low demand for certified timber/timber from sustainable sources.

In respect of the five defined hypotheses the following outcomes were observed at the 95% confidence level:

- The hypothesis (H1), Government support promotes the uptake of forest certification was not supported by the research
- The hypothesis (H2), that lack of stakeholder engagement on certification is responsible for the absence of forest certification is supported.
- The hypothesis (H3), that timber firms in Ghana pursue forest certification to gain access to markets is not supported. Market access does not appear, from the survey, to be a driving force for timber firms in Ghana to engage in forest certification.
- The hypothesis (H4) that implementation of a national scheme for forest certification will see more companies pursuing forest certification in Ghana is supported.
- The hypothesis (H5) that size of company in the timber industry is responsible for decision to pursue forest certification is supported.

Hence, from the five hypotheses that were proposed the research supported hypothesis 2, 4 and 5 at the 95% confidence level while hypothesis 1 and 3 were rejected at the 95% confidence level.

CHAPTER SEVEN

7 Discussion

7.1 Introduction

This chapter discusses the results of the survey taking into consideration the literature reviewed on forest certification. Based on the experiences from other sectors identified in the literature review, the survey and the hypotheses that were accepted in Chapter 7, a model is now proposed for implementing forest certification in Ghana. The process model developed should serve as a guide to existing certification schemes to review their processes in order to better promote the rapid growth of certification, particularly in the tropics in the short to medium term. The process model proposed should also provide guidance to countries that seek to pursue the development of national schemes for forest certification. In this context, earlier work undertaken in this area and through the literature reviewed identified the constraints and allowed for specific interventions to be considered in the development of the model to advance the pace of forest certification in Ghana and the tropics in general. A model to promote certification in Ghana is derived from the qualitative and quantitative analyses undertaken in Chapter 6.

7.2 The Certification Model Structure

The literature review, in particular, review of certification in other sectors and the hypothesis testing in Chapter 6, forms the starting point for constructing the model for forest certification in Ghana. The research therefore, from a practical perspective, reviews certification processes in other sectors and proposes a model for the timber sector in Ghana.

7.2.1 Certification - A policy and market instrument

7.2.1.1 Policy instrument

Researchers (Stevens *et al*, 1998; Eba'a Atyi and Simula, 2002) have cited certification as a policy instrument. This assertion is supported by the current research in that 96.1% of the respondents were of the view that governments had a key role to play in promoting forest certification and 88.4% of respondents wanted government to introduce legislation as a means of developing forest certification in Ghana. The industry surveyed does not expect direct support from the government

to pursue forest certification beyond the establishment of some regulatory framework to promote verification of legal timber and hence enhance forest certification in Ghana. Government's role should therefore be limited to regulation and facilitation but not a direct involvement in the promotion of certification or engaging in the institutional structures for implementing forest certification. This has been the challenge for the Malaysian Timber Certification Council (MTCC), which is perceived to be a government agency. Governments should therefore limit their role to the policy setting and regulation for forest certification. Certification of SFM should be industry (private sector) led rather than by governments.

The need for government involvement at the policy (including regulatory) level in developing forest certification is consistent with government's role in the other sectors that were reviewed in the literature. For instance, in the certification of diamonds, cocoa oil palm and fish, governments have taken the lead role in the certification process. In the case of the cocoa industry, this involved the partnership of government and the private sector, including labour and the NGOs. The objective is for promoting economic and social development within cocoa farming communities – a policy rather than market related objective. Additionally, government issues the certification report with independent third party verification – a regulatory role played by government. In respect of the fisheries industry, certification is based on bilateral agreements between governments. Here, again, the government is the key player as a regulator. Lister (2009) favours government involvement in forest certification, given the extent to which state and federal governments in the USA own lands and are responsible for managing the forests. This situation of land ownership is reflected in many tropical timber producing countries including Ghana. The respondents in the survey support the idea of government involvement as a regulator in promoting verification of legal timber and facilitating the development of forest certification in Ghana.

From the survey, it is concluded that the timber industry in Ghana perceives verification and certification can be promoted using policy instruments. Hence, any model for the development of forest certification in Ghana must therefore focus on the policy instruments as a means of promoting the uptake of forest certification in Ghana. This is consistent with the survey results in the perception by respondents that government regulation is necessary in promoting forest certification in Ghana.

7.2.2 Market Instrument

The underlying assumption in the research is that certification is both a policy and market instrument and therefore requires both policy and market interventions for its development and growth. It is generally understood by many researchers (Baharuddin, 1995; Kiekens, 2000; Agyeman *et al.*, 2006) that market access is a tool for promoting forest certification. This was supported by the survey and 94% of respondents in the survey indicated they would pursue forest certification in response to market demands. This however reflects a voluntary approach to promoting certification using market instruments. The hypothesis that “*Timber firms in Ghana pursue forest certification to gain access to markets*” was however not supported at the 95% confidence level. This could be a reflection of the absence of forest certification in Ghana or as a result of the diversification of markets for Ghana. This is explained from the changes in markets for Ghana where there is a shift in the sale of timber from Europe to the West African sub-region that is not environmentally sensitive. Europe’s share in value terms of the timber exports from Ghana fell from 42% in 2008 to 29% in 2009. On the other hand, exports to the African region, which is less environmentally sensitive rose from 24% of timber exports to 41% in the same period (TIDD, 2009). So it appears that, rather than react to the demand for certified timber which Europe and particularly the EU is demanding, timber exporters from Ghana rather adopted a strategy of diversifying their markets to areas that do not require certified timber. This reflects the trend in the other tropical timber producing countries and is reflected in the general shift of timber sales from USA and EU towards the recent phenomenal growth in imports of tropical timber by China. This situation is, however, being addressed in the short to medium term as the European Union engages China in the EU’s Forest Law Enforcement and Trade programme. The engagement of China and the EU on the FLEGT process is critical to ensure that we do not see strong market diversification and to ensure a level playing field for all stakeholders. This implies the need for a global approach and engagement at international level to address illegal logging and the associated trade.

This, however, brings into focus the role of domestic markets in promoting the uptake of forest certification in tropical timber countries. This is reflected in the growth of forest certification in Brazil that has a vibrant domestic market. However,

in most tropical timber producing areas the demand for legal or certified timber on the domestic market is weak. Additionally, enforcement of forest regulations is also weak. So it might be worthwhile for countries that have a low uptake of forest certification to consider promoting verification of legal timber first in the domestic market to allow for a general uptake within the timber industry prior to meeting export demand. With the uptake of verification of legal timber as a first phase governments could then follow up a second phase and promote certification of SFM as the second phase. This way government which happen to be large consumers of timber through infrastructural developments in these countries, coupled with support from donors through budget support, can influence purchases at the domestic and regional levels. Hence the EU engagement of tropical timber producer countries in the FLEGT process and the VPAs should be a key component in first advancing verification of legal timber and secondly in developing forest certification in countries such as Ghana that have been engaged in the VPAs. In this way the demand for verified legal timber is internalised in producer countries and will quicken the pace of uptake of forest certification in the tropical timber producing countries. So a pre-condition for promoting forest certification in Ghana and the tropics should be a domestic demand for legal timber. The model for forest certification in Ghana must therefore recognise the demand for verified legal/certified timber on the domestic market.

7.2.3 Proposed model for promoting forest certification

The following sections therefore review those elements identified through the literature review, the research and the analysis of the data, in particular the hypotheses that were tested in putting forward the elements and proposed model for promoting forest certification in Ghana. The elements that should be considered are:

- **Phased approach** – This research work, the literature review and the experiences from other sector all point to the need to use the phased approach as a mean to promote the uptake of forest certification. Ghana should adopt the phased approach to pursuing forest certification for the timber industry. The literature review showed a move towards a phased or stepwise approach to forest certification as a result of the difficulties companies, particularly in tropics, were facing in achieving SFM certification. The Keurhout, Ikea and LEI models have all adopted the phased approach to certification. Hence, the lessons learned and the experience of approaches adopted from other sectors,

particularly the cocoa, tourism and oil palm, emphasize the need to adopt a phased approach to certification in Ghana. The phased approach adopted by the oil palm sector of a gradual progression and a trial period of two years for the use of its criteria and indicators, that allows for continuous improvement is certainly one worth considering by the forest sector to enhance the growth of forest certification. Various researchers, Meidinger (2003), Abreu and Simula (2004) and Nuassbaum *et al.* (2003) have all advocated for the phased approach to forest certification. This is supported by the research work and the survey showed 90% of respondents supported the introduction of the phased approach to forest certification. 51% of respondents also had the view that the number of phases in the scheme should not be pre-determined but dependent on the gaps identified in the assessment of the company. This recognises that companies would be at different stages of development and forest management which should be factored into any model that is proposed for promotion of forest certification in Ghana. The model should look beyond a “one size fits all” where a phased approach is adopted. In particular the model should take into account the existence of SMFEs. However, for the model the first phase of minimum requirements for legality should be met and hence should be mandatory in this phase. Therefore the model would adopt the phased approach and recognise that differences exist in the capacity and capabilities of SMFEs and LSEs but that all companies should in the first phase meet the requirements of the legal standard that is adopted through a multi-stakeholder process. The model should also provide an opportunity for companies to pursue certification at different paces; however the challenge would be how to ensure credibility particularly for the different phases. One way of addressing this problem would be to allow on product labels only for the phases that have been achieved. So for example if a company has achieved all the requirements in phase 1 and is progressing to the next phase it only gets acknowledged for phase 1. Recognizing effort and the next level of achievement would be made when the next level is achieved and not trying to communicate for achievements in between the phases.

- **Legal framework** – This is a key requirement in forest certification and should be considered as the first phase in any model that is proposed. 72% of respondents in the survey perceived legal framework a priority for forest

certification. This was the highest in ranking by respondents. The legal framework is also a key element in certification approaches adopted by other schemes in the literature review. For instance the RSPO has this as one of its principles for the oil palm industry. Under the VPA a legal standard is a key requirement for the issuance of FLEGT licences. This therefore offers opportunities for synergy with the requirements under the EU FLEGT and VPA. For countries such as Ghana, Cameroon and the Republic of Congo, that have signed the VPA with the EU, this is an opportunity to make legality a first phase for forest certification and build on it to achieve certification of SFM. For Ghana therefore, legislation and regulation should be built around the work of the EU FLEGT process to promote the first phase. Companies can thus take advantage of the market recognition for the FLEGT licenses and not create a separate label. The strength of the FLEGT process is its broad stakeholder consultative process and for Ghana has been an opportunity to undertake legal reforms in the forest sector with support from the EU. So for Ghana rather than develop parallel systems it would be worthwhile to build on the EU FLEGT process in developing its certification scheme. However, Ghana should make it clear to the EU that there is a need for a more flexible approach in the requirements to address the concerns of the SMFEs. The EU should liaise with partner countries to promote the FLEGT process and license on the international markets and discussions in the international policy forums such as the ITTO, Forest Europe, the Regional Forestry Commissions and the UNFF. So for the model that is proposed meeting legal requirements would be the minimum requirement as phase 1. This approach is consistent with models used in other sectors and those proposed by Nussbaum *et al* (2003) in the MIV model.

- **Economic framework** – The economic framework was included from the focus group discussions in the study and 67% of respondents in the survey prioritized economic framework as important in forest certification. This is consistent with the literature review that clearly indicates (Baharuddin and Simula, 1996; Eba’ a Atyi and Simula, 2002; Simula *et al.*, 2004) that certification is at a cost. Therefore areas in the tropics that have experienced a growth in forest certification have been as a result of external financial support. The model being developed should then factor this element of cost and financial support into its functions. In the absence of external support, the companies in Ghana would expect a contribution towards the cost of certification. Although

economic framework was ranked high by the survey and is consistent with the argument that firms engage in forest certification for economic gains and access to markets (Araújo, 2008), the economic framework goes beyond the cost and includes the economic situation in the producer country. The economic framework involves influences from other sectors. This therefore is beyond the control of the timber firms and should not be factored into the model. Countries with strong economies can afford to provide support in the form of subsidies for certification.

- **Cost** – 40% of respondents in the survey indicated their expectation for a price premium in excess of 5% for certified products. Price premiums have been addressed in other sectors, such as the oil palm, and are worth considering in the development of the model for forest certification. For instance, the RSPO passes the cost of certification on to the party making the request. This approach would, however, require consultation on the fees and levels to charge since the cost of certification for timber is so varied. Nevertheless, this experience offers an approach that could be modified to share cost between parties in the supply chain in the absence of external support to companies and to promote the uptake of certification given that respondents have expectations of payment of a price premium. However, since cost will be area specific it would not be factored into the model. Provision should be made for support from donors or take advantage of the emerging financing mechanisms under the REDD+.
- **Stakeholder consultations** – The Hypothesis (H2) that the lack of stakeholder engagement on forest certification is responsible for the absence of forest certification is supported and reflects the need for the model to include stakeholder consultations. Stakeholder consultations over the years have come to be seen as a reflection of good governance. Stakeholder consultations are identified as a key requirement for forest certification with 70% of respondents prioritising it as a key element for forest certification in Ghana. This reflects the extent to which Ghanaian timber firms would expect to be consulted in decisions relating to forest management. The extent of stakeholder consultations provides a basis for giving credibility to forest certification schemes. This is the spirit behind the approach adopted in other sectors, in particular the RSPO who from the inception of the process have identified multi-stakeholder participation as critical to a credible system and also minimises adversarial tendencies. The

cocoa industry and the fisheries sector both engage in extensive stakeholder consultations. The survey indicates that the industry in Ghana perceives there is a poor level of consultation with stakeholders in the uptake of forest certification and forest management in Ghana. Any model for developing forest certification should therefore consider stakeholder consultations as a pre-condition for certification in Ghana. Stakeholder consultations are closely linked to communications and awareness creation. Unclear communication in respect of approach to forest certification in Ghana has been a key constraint to forest and product certification in Ghana. The communication and awareness creation is presently the major weakness in the VPA FLEGT process where there is very little promotion and education of FLEGT licenses in the EU. However, it is expected that by March 2013 FLEGT license will be a minimum requirement for the trade in wood products within the EU market.

The lack of information on standards and procedures for forest certification in Ghana is a key challenge for forest certification. Also the lack of a platform for stakeholder consultations is a challenge for developing forest certification in Ghana. The scheme should also have a communications strategy to inform the public on the value of its scheme and label. A lesson from RSPO is how it helps companies and participants to communicate to consumers in respect of the certification scheme. So schemes in the forest sector, particularly the EU FLEGT, must provide support for communicating the value of the scheme and promoting the trade in legal/FLEGT licensed timber.

- **Size of company** – The hypothesis (H5) that size of company in the timber industry is responsible for the decision to pursue forest certification was accepted at the 95% confidence level and will be taken into account in the proposed model for forest certification in Ghana. This is understandable given that the literature reviewed and the survey indicates that certification would be at an added cost and that the standards are too detailed for SMFEs. This implies that the decision to pursue forest certification is very dependent on the size of the company. A further analysis on the difference between the two groups LSEs and SMFEs approach to a model for forest certification also showed differences between the groups. This implies that in the development of the model the design and approaches should be different for the two groups. So far forest certification has adopted an approach that creates the distinction between the two groups (SMFE and LSE) as an afterthought and therefore attempts to address the difficulties for the SMFEs as the scheme progresses. This is

approach is used by some certification schemes such as FSC in their adoption of the group certification schemes for the SMFEs. Hence the model for forest certification in Ghana calls for a dual system that would provide incentives for the SMFEs to pursue forest certification while providing an advantage for the LSEs. Additionally for Ghana the SMFEs are in the informal sector and the model should therefore take into account the need to get this group involved in certification since they supply a significant volume of timber to the domestic market and logs to the large size enterprises. A key challenge for certification for the SMFEs would be the informal sector in the forest sector who purchase their timber from illegal sources and who have not been engaged in discussions on timber certification.

- **Markets** – The hypothesis (H3) that timber firms in Ghana pursue forest certification to gain access to markets is rejected at the 95% confidence level. This implies that the market does not influence the decision of firms in Ghana to pursue forest certification. However, the survey identified that domestic market though not demanding certified timber could hold the key to promoting forest certification in Ghana. Although markets were assumed to be an instrument for the promotion of forest certification, it failed to differentiate the international market from the domestic market. Various researchers (Bass *et al.*, 2001; Baharuddin and Simula 1996) have argued for markets as an instrument for promoting forest certification but failed to differentiate the domestic market from the export market. The survey however shows that for Ghana, and by extension other tropical timber producing countries, there is the need to consider both the domestic and export markets. The two markets are structurally different in their trade in wood products. Almost all developing countries have targeted the export market and the literature review also reflects the strong leaning towards the export markets. It is, however, evident from the survey that the domestic market is perceived by the industry in Ghana as a strong factor for the promotion of forest certification in Ghana. This approach is also consistent with the approach that was adopted by Ghana in its negotiations with the EU on the VPA where Ghana identified addressing illegal production and trade of timber on the domestic market as one of its requirements and priorities under the agreement. Hence any model that is developed for forest certification in Ghana must include the domestic market. This is consistent with Porter's (1998)

diamond framework and his factor conditions that identify the domestic market as a means to provide competitive advantage for industries. Additionally, 70% of the respondents surveyed indicated that engaging in forest certification would promote their sales on the domestic market. Hence, policy interventions in favour of legal/sustainable timber, particularly for the domestic market, would promote forest certification in Ghana. The model for forest certification in Ghana should therefore take into account the domestic market in proposing the model for forest certification in Ghana.

- **National Standards** – The hypothesis (H4) that implementation of a national scheme for forest certification will see more companies pursuing forest certification in Ghana is accepted at the 95% confidence level. This is consistent with the approach that is adopted by the Nordic countries, Malaysia and the UK. It is also the model that the literature review has identified as being used by the PEFC. For tropical timber producing countries, this approach might offer the quickest way to develop forest certification. The PEFC currently has the largest forest coverage among the forest certification schemes based on the endorsement of national schemes. Also from the survey 94% of respondents favoured Ghana using the national standard for certification. Despite the fact that Ghana has not been able to gain endorsement for its national standard, it stands to move its forest certification process forward if it can adopt a national scheme and seek its endorsement from other international schemes. For Ghana, despite the initial presence of the FSC office and the support it provided to the National Working Group on Forest Certification in Ghana, it appears the PEFC model would be most appropriate for Ghana. Under an approach that seeks endorsement of its national standard, PEFC would be the natural ally for the Ghana timber industry. This is an approach that has been adopted by Malaysia. Any model that is being developed for forest certification in Ghana could therefore take into account the need to develop the scheme around a national standard. The literature review shows that significant work has gone into developing a national standard by Ghana but it has since failed to implement and move towards certification. The approach should therefore be to adopt this UK approach and seek endorsement from the market leaders such as FSC and PEFC.

The Pan African Forest certification (PAFC) is not an approach that Ghana should lean towards given the challenges identified in the literature review and low resource level of PAFC and the differences in forest management practices

and forest regulations in the African timber producing countries. The model that is proposed under this chapter should therefore seek the endorsement of the national scheme by FSC and PEFC taking into account that Ghana's traditional market for timber is the European Union.

The challenge for Ghana would be to gain recognition from the two main schemes, namely FSC and PEFC. Though PEFC would appear the natural ally, Ghana could face a backlash if it went solely in this direction due to rivalry between FSC and PEFC.

- **Resource rights** – The survey confirmed the finding from the literature review on the importance of forest resource rights. 58% of respondents placed resource rights as a priority. Land tenure and resource rights are key elements in standards for forest certification and are included in criteria and indicators of sustainable forest management. Ghana and most tropical timber producing countries that were colonised have continued to implement the policies of the colonial period that placed ownership of the resources in the hands of central governments to manage in a cost neutral way (Bird *et al.*, 2006). Any model that is being proposed will have to address the ownership rights of the forest resource and in particular re-examine land and tree tenure issues. This may imply the need for legal reforms to address this ownership issue and have improved rights to land and resources for the forest and local communities. The issue of rights of indigenous communities does not arise in Ghana since there are no such groups in Ghana.
- **Role of Government** – The hypothesis (H1) that government support promotes the uptake of forest certification was rejected at the 95% confidence level. This is consistent with the literature reviewed where it was noted that forest management in the tropics is to a large extent revolving around governments but the mistrust between governments and civil society (NGOs) is constraining the promotion of forest certification. It is also worth stating that this response may have been influenced by the character of the respondents, namely the timber industry in Ghana.

In most tropical timber producing countries governments have managed the forests and must be seen as one of the key stakeholders that must be engaged. What has not been clear is the nature of the role of Governments. From the

survey, respondents were of the view that the government role should be focused on regulation and facilitation of the development of forest certification. The respondents also returned the view that government should underwrite at least 30% of the cost of certification. This assertion is supported by the literature review (Fischer *et al.*, 2005). The survey also showed 86% of respondents to be favouring government introducing legislation to facilitate the development of forest certification. Any model in facilitating the development of forest certification in Ghana must involve the government as a key stakeholder. The survey supported government regulation and the provision of support by government in the development of the forest certification scheme.

7.3 Model for forest certification in Ghana

The model for forest certification seeks to facilitate the development of certification in Ghana, and the tropics in general, taking into account the findings in the literature review and the results from the survey that was undertaken and the elements that have been identified. The model would be a tool for firms in Ghana to use in facilitating their uptake of forest certification. The model considers the forest management practices in Ghana taking cognisance of the forest situation in Ghana. Forests are divided into Forest Reserves and Off-Forest Reserves. Ghana also has material coming from underwater (resulting from flooding of forest reserves as a result of a dam built on the Volta River) and plantation timber. The literature review shows that forest reserves are considered to have the potential to be managed sustainably in perpetuity. Timber coming from the Volta Lake can at best qualify only as legal timber. Plantation timber has the potential to qualify for SFM certification.

The model further takes into account differences that exist in the approaches adopted by the SMFEs and LSEs and that, according to the survey, most SMFEs have TUPs rather than long term contracts (TUCs). TUPs are allocated from off reserve areas and are not intended to be managed sustainably. It would therefore be worthwhile for these companies to target verification for legality and not that of sustainability. This must be a clear concept for Ghana where timber or forest products from the off-reserve areas cannot qualify for certificates of sustainability due to the nature of forest management and practices in such areas. Hence, timber coming from off-reserve areas or harvesting under TUPs will only qualify for

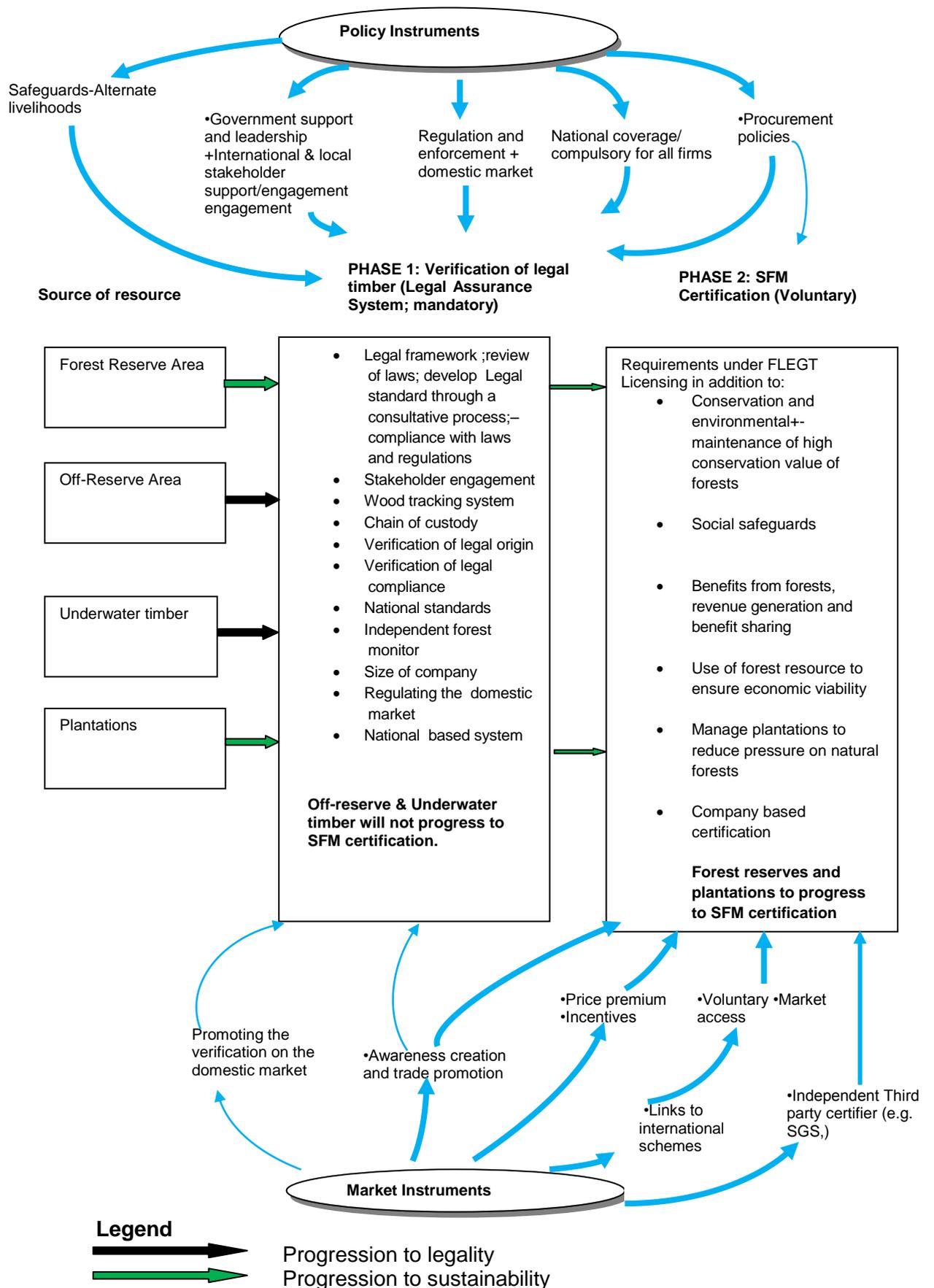
verified legal statement which will be the first phase. No such material will qualify for certificates of sustainability.

The model draws its design from experiences and lessons learned from certification schemes in other sectors such as cocoa, palm oil, diamonds and the various models that have been identified through the literature review, taking into account the results of the survey and the hypotheses that were tested from the research. The model also draws heavily on the elements that have been identified as a result of the literature review and the survey. Pre-conditions for this model are that it is phased approach; the first phase is for legal timber modelled along the EU FLEGT VPA. The VPA forms a good basis for engagement of stakeholders in the certification process and also allows for legal reforms at the country/state level in support of sustainable forest management and the production of legal timber. It involves regulation and facilitation by government- a key role identified in the study. However, unlike the VPA process that targets external or the EU market, this model will build on the need for legal timber on the domestic market as a key component. Strong policy interventions to ensure production and trade of legal timber on the domestic market are therefore required. This approach implies that, for the first phase that allows for the issuance of statements/licenses of legal origin/ Forest Law Enforcement and Governance Licenses, implementation would be at a national level. All operators would be expected to comply and it is therefore mandatory for the first phase – Legal (FLEGT) phase. However, the move to the other level to achieve sustainability of forest management should continue to be voluntary and market based. This approach of a first legal compliance phase would require strong government engagement consistent with the literature review and research results. For Ghana, strong government engagement and regulation would be consistent with its engagement in the VPA as well as meeting requirements in its key markets of the European Union given the future introduction of the FLEGT license and requirement of the EU regulation on timber sales in the region and the USA with implementation of the Lacey Amendment Act (2008). Furthermore, the strong government engagement in Ghana in the introduction of legal compliance would enable the government to address the problem of illegal chainsaw timber and trade in illegal timber on the Domestic market.

The EU VPA approach provides the opportunity for support to developing timber producing countries for the reforms and implementation of the certification of legal origin, thereby underwriting or subsidizing the cost of certification. This process will provide resources for capacity building in the timber producing countries, developing the national standard, undertaking legal reforms, and installing a chain of custody system to track the flow of timber products. As has been reported in the literature review, the EU has also provided support to Ghana in implementing safeguards as a result of persons that would be dislocated by the introduction of the legal reforms, standard and implementation of the VPA. These safeguards provide for alternate livelihoods for persons engaged in the production of chainsawn timber that is illegal in Ghana but accounts for 84% of the lumber supply to the domestic market (Marfo, 2010). This approach could significantly reduce the incidence of illegal logging in Ghana and the partner countries that have engaged the EU in the VPA.

The model uses the Ghana national standard that has been developed and makes provision for Ghana to seek endorsement from the International schemes that are operational in the second phase. For Ghana a lot of effort has gone into the development of the standards for the Ghana National Forest Certification Scheme. The national scheme was taken into consideration in the VPA between Ghana and the EU. However, for other tropical timber producing countries that have not as yet embarked on a national scheme it would be advisable to use the international criteria and indicators as a reference point for the development of their national standards. This way it would be easier to obtain endorsements of the national schemes from the international schemes, namely FSC and PEFC.

The proposed model for forest certification in Ghana is shown in Table 7.1.



NB: The weight of the blue arrows reflect the magnitude of the intervention
Figure 7.1 Proposed Model for the promotion of forest certification in Ghana.

Structure of model

As a result of the literature review, the experiences from other sectors on certification and the results of the survey the model proposed has two distinct phases; Phase 1 is the verification of legality which should have strong policy interventions, regulation and enforcement to ensure compliance and Phase 2 which is the certification of SFM which should have strong market instruments influencing company behaviour. Any interventions in the second phase would be market oriented and voluntary. The two phases will have the following features:

- **Phase 1** is verification of legality and in the model referred to as the Legal Assurance Scheme (LAS) or Verification of Legal timber. This phase is modelled along the lines of VPA Legal Assurance Scheme and is meant to encourage synergy with the programme that Ghana is piloting with the view to scaling it up. It also offers opportunity for other tropical timber producing countries to replicate. This has two advantages. Firstly it addresses the issue of market access and opens up the EU market to tropical timber producing countries. This verification system for legal compliance also meets the requirements under the amendment in May 2008 to the USA Lacey Act that banned trade in illegally sourced wood and wood products. It will generally provide evidence of legality to markets that favour legal timber thereby meeting the requirements of most procurement policies, particularly those of the UK. Secondly, this phase is undertaken at the national level and is mandatory and not voluntary. All operators will have to comply with the requirements, further strengthening government regulation in the harvesting and trade in timber products. Phase 1 consists of compliance with legal standards and relate to regulations covering existing laws, indigenous people and community relations and workers' rights. This phase adopts a policy intervention approach to ensure regulation and compliance with the national and international laws and for robust institutions to enforce the regulation. The coverage of the LAS should be at the national level and mandatory for all timber firms.
- **Phase 2** - certification of sustainability that will be built on the legal and regulatory framework but will entail the three pillars of economic, social and environmental aspects of sustainable forest management. These will cover principles on benefits from forests, environmental and social impacts. This phase would be voluntary and market based interventions are used to encourage compliance and performance by timber firms. This phase should

in all instances cover elements from phase1- that is compliance with legal standard that have been agreed upon through broad stakeholder consultations. This phase in particular will have strong social and environmental components and use either national standard for SFM of those of companies implementing certification of SFM such as the FSC, PEFC, LEI or the MTCC. This phase would aim to strengthen SFM. Companies, particularly the SMFEs, should have the opportunity to break this phase up into 2 but not more than 3 stages based on their gaps or corrective measures identified between verification of legality and certificates of sustainability. However, in this phase the intervening achievements will not have any statements of claim or certification. Companies moving at the various stages in this phase will not receive recognition until they have achieved full certification. They will therefore not be able to use any labels in the intermediate stages of phase 2.

The key attributes of model are:

- **Phase 1 would have national coverage (mandatory)** and all firms engaged in the timber sector would be expected to comply and come under regulation. The government of Ghana will build on its successes on the VPA and the support that is provided by donor countries under this programme thereby reducing cost of implementation to the Ghanaian firms. National coverage is expected to ensure that all timber that is traded and processed locally is legal.
- This approach would to a large extent also cover the social aspects that are part of the Ghanaian law and custom. It therefore covers workers' rights, health and safety, resource allocation and user rights, revenues due to state should be fully paid, comply with the legal standard and have a chain of custody in place.
- The legal standard will be developed through a broad stakeholder consultative process and have elements for verification of performance against the legal standard.
- There will be an independent forest monitor to oversee the implementation of the system and make recommendations for remedial action. The independent monitor is to ensure credibility of the system and provide assurance to the market on the implementation by the Ghanaian authorities.

- There would be an adjudication process in phase 1 to allow firms not happy with actions taken or who feel their rights have been infringed upon to report and seek redress. A higher body would be the governing council and would consist of a multi-stakeholder group of government of Ghana, landowners, NGOs, forest certification firms working in Ghana, Forestry Commission, private sector, representative from a research institution, the finance ministry and the donors supporting the FLEGT process of the forest sector in Ghana.
- **Social safeguards** - As a result of the regulation there will be displacement of persons that were operating illegally in the sector. As shown from the literature review the group of illegal chainsaw operators is large and due to policy failures in the past there is a need to find alternate livelihoods for this group to prevent them from taking up a militant approach and also provide for reduced job losses in the sector thereby minimising the potential social effect of displacements. The Government of Ghana, with the support of donors, should put in place a programme for alternative livelihoods and those identified should be retrained and encouraged to shift into alternate livelihoods to operate in a legal regime.
- **Regulating and enforcement on the domestic** market is a key feature in the model for forest certification in Ghana. This is consistent with the outcome of the survey, which identified the domestic market as key to promoting forest certification in Ghana. Although markets were identified in the literature review as a key instrument for the promotion of forest certification, the hypothesis H3 that timber firms in Ghana pursue forest certification to gain access to markets was not supported. The research did not consider the international market separate from the domestic market. All the other studies have not made this distinction and this study is making the distinction in the market and emphasizing the potential impact of the domestic market in promoting the growth of legal and sustainably produced timber.

This approach of introducing a regulatory framework for the domestic market is seen as a means of promoting the production and trade in legal timber as a first phase and for countries to build on it for the second phase of SFM certification. This will however require strengthened institutions for the regulation and enforcement on the domestic market. This would imply strengthening the Ghana Forestry Commission, particularly its Timber Industry Development Division and the Forest Service Division to enforce compliance at the forest and market levels. It may also require subsidiary legislation to ensure enforcement and compliance. This should also provide the opportunity for self-regulation

amongst the timber firms and within the various trade associations. There should be the introduction of codes of conduct by the various trade associations to enhance compliance.

The domestic market approach has not been used by any of the other sectors that the literature review was drawing on but identified by the survey as providing opportunities for growth and development for forest certification and verification of legality. In the literature review, and supported by experiences from other sectors, procurement policies by both government and the private sector have been helpful in promoting legal timber and SFM. Introduction of procurement policies on the domestic market should facilitate the growth and development of the production and verification for legal timber.

As a result of the strong regulation required on the domestic market, the government would be the lead in promoting this model and phase. Government engagement and commitment is required for the production and trade in legal timber in phase 1. This approach for Ghana should encourage the EU to strongly promote regulation of the domestic market among all VPA partner countries.

In the model proposed, Phase 1 would not be an “on-product” label. This is modelled along the EU Voluntary Partnership Agreements but would not be limited to the EU and certificates and the process will build on the experience of partner countries that have engaged the EU in the VPA. Certificates would only accompany shipments or transportation locally to prove that the material is coming from a legal source and has complied with all legal requirements in the country of origin.

- **The Legal standard** would be based on national laws but the minimum legal standard would be agreed through a multi-stakeholder consultative process that is broad and transparent. A conformance matrix would be derived from the Legal Standard to guide implementation. This would be government led and the regulations and laws would have to be enforced. This would in some countries such as Ghana call for capacity building of the regulatory institutions including those outside the forest sector such as the law enforcement agencies (e.g. the police force, customs etc.) Timber from off-reserve areas and underwater timber will only qualify for Legal timber status due to the nature of the operation and knowing that these areas cannot be managed sustainably. Only timber from the

forest reserves will qualify for SFM certification but firms would have to pursue it through phase 1. Timber from reserve areas that are under the timber utilisation permits (TUPs) will also not qualify for sustainability certificates since they are being salvaged.

SMFEs would be encouraged to target legal timber verification. Their volumes are small and from the research results there is sufficient information to show this group is allocated resources in the off-reserve areas. With the new system of competitive bidding for concession holdings the likelihood of SMFEs owning concessions in forest reserves would be smaller.

- **Land tenure security** – is identified in all the schemes as a key component for forest certification. Long term security of tenure is viewed through the literature reviewed as a key element for forest certification. This is more pronounced for local and indigenous communities. From the literature reviewed Kishor and Constantino (1993), Becker, (2005), Gullison, (2003) all cite insecure tenure rights as a factor that greatly favours forest conversion over long term management for sustainable timber production. Hence land tenure is a pre-requisite for the verification of legal timber and that of SFM certification. Land tenure in Ghana is generally problematic due to undocumented land ownership or land is in the hands of the state and stools/skins (local chiefs/clans). The Concessions Act of 1962 (Act 124) in Ghana placed all timber lands both in the reserved and off reserves forest areas under the jurisdiction of the President (Bird *et al.*, 2006). This therefore poses a critical challenge for forest certification in Ghana and is reflected in the survey as most companies had Timber Utilization Permits which lack tenure security. Any attempt to promote forest certification must therefore address the gaps in the allocation of forest resources. The present system of issuance of permits is not sustainable and will not promote SFM or timber certification.
- **Stakeholder consultations** – is perceived from the survey to be a key component for the promotion of legal timber. The legal standard is developed through a multi-stakeholder process. The survey also identified stakeholder consultations as a key requirement for forest certification, with 70% of respondents prioritising it as a key element for forest certification in Ghana. This reflects the extent to which Ghanaian timber firms would expect to be consulted in decisions relating to forest management. The extent of stakeholder consultations provides a basis for giving credibility to forest certification

schemes. The RSPO, the Kimberley process, fisheries and the cocoa industry have all identified multi-stakeholder participation as a critical component in certification. Hence the certification process being planned should involve stakeholder consultations. This is supported by hypothesis (H2), that lack of stakeholder engagement on certification is responsible for the absence of forest certification.

- **Government support** – is necessary for the promotion of legal timber. In the cocoa, fisheries and diamond sectors government has been very supportive of trade in legal products. A strong trade promotion for legal timber would be pursued both in the domestic and international markets and led by the government agencies responsible for timber. For instance government would ensure that legal timber is undertaken at the national level and take steps to put in place a timber tracking and verification system. This would be tracking system that would track timber through the supply chain.
- **Phase 2** would be SFM certification and compliance with Phase 1 requirements would be a precondition for proceeding to Phase 2. In addition, the company would have to: undertake conservation and environmental work Monitor management performance and environmental impact of the firms operations; Undertake silviculture and sustained yield practices as required by the law and the respective forest operations manuals. SFM certification promotion will target the LSEs that have TUCs and large holding of forest concessions.
- This process will have a second phase that is the production of SFM certified timber through promotion of market interventions to provide incentives that encourage companies to move from the legal assurance level to full certification. Some of the incentives would include tax breaks, payments for environmental services due to practising of sustainable forest management.
- **Size of company** – will determine the phase to be addressed. Companies that are classified under LSEs will target certificates of SFM while those of SMFEs will target verification of legality only. This is confirmed by the survey results which show that a large number of SMFEs hold TUPs and cannot qualify for certification of SFM. So, like other sectors such as the tourist industry the SMFEs should limit themselves to statements of legality, particularly given that a large number in this category are in the informal sector. This is consistent

with the hypothesis H5 that the size of the company is responsible for its decision to pursue forest certification.

- **Links to International schemes-** From the literature review, national schemes should be associated to international scheme and in this respect the PEFC has higher likelihood for endorsing national schemes based on the model it has adopted. FSC however has a strong support base that is more of ENGOs. This however is not critical issue in the consideration of promoting forest certification in Ghana.
- **Health and safety and workers' rights-** This is identified as a key element in the certification under the cocoa certification scheme. This has been identified as key elements in timber certification and the production of legal timber under the VPA. However the survey did not rank this high and is then not perceived as a critical element in promoting forest certification in Ghana.
- **Price premiums:** - 40% of respondents in the survey indicated their expectation for a price premium in excess of 5% for certified products. Price premiums have been addressed in other sectors such as the oil palm and worth considering in the development of the model for forest certification. For instance, the RSPO passes the cost of certification on to the party making the request. For the timber sector the literature review shows that market premium varies considerably and not guaranteed for certified products. Price premiums cannot therefore be a critical element in the promotion of forest certification in Ghana.

Hence the model to promote forest certification in Ghana the domestic market is critical to ensuring an uptake of certification by companies. Regulation and enforcement on the domestic market is important and should be undertaken through national coverage. Ghana would adopt a phased approach with the first phase being the introduction of verification of legality and phase 2 the certification of SFM. The legal standard would be developed through a stakeholder consultative process. SMFEs will pursue verification of legality while the LSEs pursue certification of SFM. Government role should be limited to regulation on the domestic market and to facilitate the implementation of certification of SFM.

CHAPTER EIGHT

8 Conclusions

The emergence of forest certification and the passion driving ENGOs in tackling the problem of deforestation and illegal logging in the tropics is attributed to their disillusionment in action taken by governments and multilateral initiatives to curb deforestation and forest degradation (Humphreys, 2006; Thornber, 2003). Despite this assertion, the literature review and the research shows that governments, particularly tropical timber producing governments, still have a key role to play in the development of forest certification in the tropics. The hypothesis H1 Government support promotes the uptake of forest certification is not supported at the 95% confidence level. However, the vast majority (88%) of respondents returned the view that governments role in promoting forest certification should be in regulation and facilitation. Additionally, a lesson to be drawn from the other sectors reviewed in the literature (cocoa and the palm oil) is the need for strong government engagement in creating a regulatory framework to promote verification of legal timber, particularly for the domestic market and by extension that of certification. From the study government regulation and enforcement on the domestic market is critical for implementing forest certification in Ghana and tropical timber producing countries in general. Brown and Swails (2005) cite Young (2003) reporting that the success of CITES is the strong political commitment of governments in particular in documenting information on domestic implementation and introduction of remedial measures to address illegal activities. This assertion is also supported by the research work that has identified the domestic market as a key factor for facilitating the development of a framework for verification of legal compliance as a first phase and forest certification as a second phase in Ghana. The model proposed therefore has a strong component for regulating the domestic market in the production and trade in legal timber as a means to promoting the development of forest certification in Ghana. The research showed that the domestic market is important for promoting forest certification in Ghana and the tropics in general. Domestic market regulation must however be within the first phase where regulation would be strong. The research however acknowledges that this should be done with the support of donors and should adopt

a multi-stakeholder approach to addressing this problem, especially in respect of illegal chainsaw production in Ghana.

Stakeholder consultation is considered critical in the development and promotion of certification of legal timber and that of SFM. The hypothesis H2 that lack of stakeholder engagement on certification is responsible for the absence of forest certification was accepted at the 95% confidence level. Hence stakeholder consultations are a key feature in phase 1 of the model. In phase 1, it will be very important to define what the country considers legal and to establish the laws to engage very broadly the various stakeholders. Given the work that is being done under the VPA on developing the legal standard through a multi-stakeholder process and supported by the donor community it will be worthwhile to build on this process to achieve the verification of legality at the national level.

Market access was identified by the literature review as a tool for promoting forest certification (Baharuddin, 1995; Kiekens, 2000; and Agyeman *et al.*, 2006.) However, from the survey of timber firms in Ghana the hypotheses that companies pursued timber certification to gain access to markets was not supported. It can be concluded from the trade statistics that for Ghana there was trade diversion of its exports in favour of the less environmental sensitive areas. Timber exports had shifted from the European Union to the West African sub-region. Hence market access is not a critical issue in the development of forest certification in Ghana given that an emerging market for Ghana's wood products is not environmentally sensitive. This has informed the proposal for the EU to work with partner countries to promote legal timber.

Ghana should make the domestic market regulation and enforcement a key element in promoting verification of legality and certification of sustainable forest management. By internalising this process companies will see it as an incentive to pursue forest certification.

The research concludes that forest certification in Ghana should be a phased approach. This is consistent with the literature review (Meidinger 2003), Proforest, (2003), Abreu and Simula, (2004)) and the results of the survey of timber firms. A two phased approach is proposed to cover a verification of legal compliance for phase 1 and SFM certification in phase 2. The literature review shows a move towards a phased or stepwise approach to forest certification as a result of the difficulties companies were facing in achieving SFM certification. The Kerhout,

Ikea and LEI have all adopted the phased approach to certification. Experience of approaches adopted from other sectors, particularly the cocoa, tourism and oil palm sectors, reflect the need to adopt a phased approach for forest certification in Ghana. The model being proposed therefore adopts the phased approach. The elements for the phases also reflect the criteria and indicators for SFM and can be grouped into the legal and compliance related issues in phase 1 and the environmental, monitoring and social aspects in phase 2.

Timber in Ghana originates from four main areas, namely reserved forests, off reserve forests, underwater and plantations. Off reserve and underwater timber cannot qualify for certificates of sustainability and should limit its claims to that of legality. Timber from off-reserves and underwater timber would qualify only as legal timber due to the nature of harvesting, the management practice of such material and the allocation of the resource. Timber from reserved forests and plantations can qualify for certification of SFM due to management practices in such areas.

The model being proposed will use policy instruments to promote the production and verification of legal timber and while market instruments are used to promote SFM certification. The model proposes that phase 1 should be national in coverage and must have strong regulation and enforcement, particularly for the domestic market. This is consistent with the literature review which identified policy and market approaches as a means of addressing SFM (Stringer, 2006). Regulation and promotion of legal timber on the domestic market has not been considered by any of the literature reviewed and is seen as an emerging factor in the promotion of forest certification in Ghana and the tropics in general.

The hypothesis H4 that implementation of a national standard for forest certification will see more companies pursue forest certification in Ghana was supported at the 95% confidence level. The national standard should be aligned to the main international schemes if they are to gain recognition in the market, particularly in the export markets.

The hypothesis H5 that the size of a company in the timber industry in Ghana is responsible for a decision to pursue forest certification was supported at the 95% confidence level. SMFEs would however have challenges in implementing SFM

certification and it is proposed that given the nature of their operations and the ownership of concessions held by this group (TUPs) they focus on the phase 1 only and produce legal timber. LSEs would be encouraged to pursue SFM certification.

8.1 Limitations of Research

The sampling frame considered companies that were registered with the Ghana Forestry Commission – Timber Industry Development Division. These were mainly timber operatives and the outcome could have been skewed towards industry perceptions. This limited the number in the sample. The sample size could have been larger if the sampling frame had been expanded to include other stakeholders such as government institutions in the forest sector, civil society, retailers and distributors.

A number of respondents did not respond to the open ended question on constraints to forest certification. Perhaps this question should not have been open ended but rather offer some answers to encourage response. This would have improved the response rate and the analysis of the survey.

8.2 Areas for future research

The domestic market is found to be critical in the promotion of forest certification in Ghana. This is however, the perception based on responses from the industry. Future work should be undertaken in Ghana to ascertain the perception of other stakeholders in the supply chain. This would, among others, include retailers and distributors of wood products on the domestic market as well as those of the civil society. It would also be useful to undertake further work on the potential of the domestic market to promote the production and trade in legal and sustainable timber from timber producing countries.

The proposed model could be tested in future research work and this research should also establish if there would have been significant difference in the outcomes if other stakeholders were included in the study.

References

- Adams, M. and Attah, A. (2009) A review of the United Kingdom Timber Market, Yokohama, International Tropical Timber Organisation
- Adu, G. . (2007). Personal Communication
- Agyeman, V. K., B. Kyereh, (2006) Quality Control and Standardization of Ghanaian wood products: Review of Policy and governance issues. Inception Workshop for ITTO PD/318/04 REV.2 (I) Quality Control and Standardization of Ghanaian Wood Products. Kumasi, Ghana, FORIG.
- Akwetey, L.M, (2006) Investment Attraction and Trade Promotion in Economic Development: A study of Ghana within the Economic Community of West African States (ECOWAS), Trafford Publishing, Oxford
- Alt, C. (2001) The impact of certification on US hardwood flooring manufacturers, a dissertation submitted to Virginia Polytechnic Institute and State university in fulfilment of the requirements for a PhD.
- Anon, (2002) Ghana tries to boost log imports. UK: hardwoodmarkets.com vol 17 (7). pp. 3.
- Appiah, M and Pederson R. T., (1998) Participatory Forest Management in Gwira Bansa, Ghana. Dept. Of Economics and Natural Resources, Royal Veterinary and Agricultural University, Denmark.
- Appiah, M (2002) Co- Partnership in Forest Management: The Gwira Bansa Joint Forest Management project in Ghana. Environment, Development and Sustainability 3(4) pp. 343-360.
- Appiah. S. K. (1990) “Status Report on Ghana Timber Industry”. In Proceedings of Seminar on the promotion of further processing of tropical hardwood timber, Accra, Ghana.
- Attah, A.N. (2009) Impact of global economic crisis on the Ghana Timber Trade. A presentation made to the FC/Forest Research Institute of Ghana Colloquium, Accra, Ghana
- Attah, A.N. (2005a) Ghana Timber Export Performance – 2004.
- Attah, A. N. (2005b) A statement presented at the ITTO/FAO International Conference on Plywood, Beijing, China, and 26th – 28th September 2005.
- Attah, A.N. (2003) The Ghana timber Industry: Trends and Current issues. Paper presented at ITTO Council session, Panama City, Panama.

- Araújo, M. (2008). Forest certification in Brazil: Choices and impacts. a dissertation submitted to Faculty of Forestry, University of Toronto in fulfilment of the requirements for an MSc (Forestry).
- Augusto, J., M. Simula, De Abreu (2004). Report on the procedures for the implementation of phased approaches to certification in the tropical timber producing countries. Yokohama, International Tropical Timber Organisation: 9.
- Baah-Wiredu, K. (2006). "Design Measures to reach SMEs." Daily Graphic, 7 June 2006, Accra, Ghana
- Baharuddin, H. G. (1995). "Timber Certification: an overview." *Unasylva* 46(4). An examination of the concept of timber certification, its origins and its present state of development.
- Baharuddin, H. G. and M. Simula (1996). *Timber Certification in Transition*. Manila, Philippines, International Tropical Timber Organization: 81.
- Bass, S., Thornber, K., Markopoulos, M. Roberts, S. and Grieg-Gran, M. (2001) Certification's impacts on forests, stakeholders and supply chains. *Instruments for sustainable Private Sector Forestry series*, IIED, London, U.K.
- Becker, M, 2005. Barriers to forest certification in tropical timber producing countries, submitted as a Master's in Forest Conservation at the University of Toronto, Canada. Accessed 29th January, 2006
- Bird, N., Fomete, T., Birikorang, G. (2006) Ghana's Experience on Timber Verification System Design. *VERIFOR country case study*. Overseas Development Institute, London.
- Boateng, P.E.K, (2007). Personal communication.
- Brack, D. (2007). *Controlling Illegal logging: Lessons from the US Lacey Act*, Chatham House, London, UK.
- Brack, D. (2005) Illegal logging and the illegal trade in forest and timber products, *International Forestry Review*, vol 5(3), Commonwealth Forestry Association.
- Brack, D., C. Marijnissen, Ozinga, S. (2002). Controlling imports of illegal timber: Options for Europe. London, Royal Institute of International Affairs FERN.
- Brown, D. and Swails, E. (2006). Comparative Case Study 3: The Convention in Trade in Endangered Species (CITES) VERIFOR. Overseas Development Institute, London.

- Butterfield, R. (2005). "Forest Certification and small forest enterprises: key trends, benefits and impacts." *ETFRN NEWS* 39/40: Globalisation, localisation and tropical forest management.
- Cadman, T. (2002) *Managing Small-scale plantations in a certified environment*, www.certifiedforest.org.au/documents/art5.html accessed 3/2/2006.
- Carbarle, B. and Freitas, R (1995). "Timber Certification and pursuit of credible claims." *Unasylva* 46(4).
- Cashore, B., Gale, F., Meidinger, E. and Newsom (2006); *Confronting Sustainability: Forest Certification in Developing and Transition Countries*, Yale School of Forestry and Environmental Studies, New Haven, USA.
- Castaneda, F. (2000). "Criteria and indicators for sustainable forest management: International processes, current status and the way ahead." *Unasylva*.
- Cobbina, A, (2006). Personal communication.
- Coleman, H. (2000) *Analysis of market trends for tropical hardwoods from Ghana in the UK market. A dissertation for Master of Science (MSc.) Bio-composite Technology*, University of Wales.
- Dauvergne, P., and Lister, J. (2010). *The Prospects and Limits of Eco-Consumerism: Shopping our Way to Less Deforestation*. *Organisation and Environment*, Thomas Oaks, Vol 23 Issue 2, pp. 132
- Davies, S. J., (2006) "*So what is Certification?*" *Security*, 43 Vol 10 pp 87
- De Vaus D. 2002. *Surveys in social research*. Routledge, London.
- Dillman, D.A. (1978) *Mail and Telephone Surveys: The Total Design Method*. New York: Wiley and Sons.
- Durst, P. B., McKenzie, P. J., Brown, C. L., and Appanah, S. (2006). *Challenges facing certification and eco-labelling of forest products in developing Countries*, "*International Forestry Review* 8(2)
- Easten, I.L., Addae-Mensah, A. and De-Graft Y. T. (1993) *Tropical Timber Boycotts: Strategic implications for the Ghana timber industry*. *Unasylva*, Vol 43 pp 170
- Eba' a Atyi, R., and Simula, M. (2002) *Forest Certification; pending challenges for tropical timber*, ITTO Technical series number 19. Yokohama, International Tropical Timber Organization.
- EIU, E. I. U. (2004) "Country Profile, 2004." *The Economist*: 13.

- Elliot, C. and R. Schlaepfer (2001) "Understanding forest certification using advocacy coalition framework." *Forest Policy and Economics* 2(3-4): 257-266.
- FAO, (2010), *Global Forest Resources Assessment – Country Report (Ghana)*, <http://www.fao.org/forestry/62318/en/gha/> accessed 20 July, 2010.
- FAO (2009) *State of the Worlds Forests*. Accessed on 14 August 2010 at www.fao.org/forestry
- FAO, (2000): *State of the Worlds Forests*. United Nations, Rome.
- FAO. (2001). "Criteria and indicators for sustainable forest management" <<http://www.fao.org/fo>>
- Fischer, C., F. Aguilar, Jawahar and P. Sedjo, R . (2005). "Forest Certification: Toward Common Standards?"
- Forestry Commission (2008): *National Forest Plantations Development Programme Annual Report*, FC, Accra.
- Forestry Commission, (2009), *Annual Report*, Forestry Commission, Accra.
- Forestry Department, (1996) *Problems and potentials of applying certification to forest management in Ghana*, presented at the *Workshop on Forest Certification and other market-based instruments in Ghana*, FORIG, Fomesua, 12-13 June 1996.
- Freris, N. and K. Laschefski (2001). "Seeing the wood from the trees." *The Ecologist* 31No. 6.
- Fripp, E., Oliver, R., and Andy, R. (2005) *Wood products trade – Africa and Europe: Changing International markets for timber – what can African producers do?* Timber Trade Federation UK.
- Ghanaweb (2005). *European timber buyers warn Ghana's timber industry*. Ghanaweb.
- Ghanaweb (2010). *Ghana Oil II: Transforming the Ghanaian economy*, Ghanaweb accessed 20th August, 2010.
- Ghartey, K.K.F. (1989). *Results of the National Forest Inventory*. In: Wong, J.L.G. 1989. *Proceedings of Ghana forest inventory project seminar, 29-30 March 1989*, Accra. Unpublished. Department for International Development/Ghana Forestry Commission.
- Gibbs, A.A. (1993) "Enterprise culture and education: understanding enterprise education and its links with small business entrepreneurship and wider

- educational goals", *International Small Business Journal*, Vol. 11 No. 3, April-June, pp. 11-34.
- Gomm, R., (2008) *Social Research Methodology: A critical Introduction*. 2nd Ed. Palgrave MacMillan, Basingstoke.
- Goss, J., Leinbach, T. R. (1996) Focus group as alternative research practices, *Area* 28(2) pp 115-123.
- Greenpeace, IUCN, FOE, WWF, Milliedefensie and NCVI (2006). "Legal forest destruction: A gap between legality and sustainability." Retrieved March, 2006.
- Gullison, R.E. (2003). Does forest certification conserve biodiversity? , *FFI, Oryx* 37(2) pp 153-165. U.K.
- Gyimah, R.(2007). Studies on growth and ecophysiological characteristics of tropical tree species useful in Ghana. United Graduate School of Agricultural Sciences, Kagoshima University Japan..
- Hall J.B and Swaine M.D. (1976) Classification and ecology of closed-canopy forests in Ghana. *Journal of Ecology* 64, pp 913-951
- Hall J.B and Swaine M.D. (1981). Distribution and ecology of vascular plants in a tropical rain forest. W. Junk, The Hague
- Hawthorne, W.D. and Abu-Juam, M. Forest protection in Ghana with particular reference to regulation and plant species (IUCN/.ODA/Forestry Department), Ghana
- Higman, S. and Nussbaum. (2002) How standards constrain certification of small forest enterprises. *ProFor*
- Hubbard, S.S. and Bove, S.A. 2005. Environmentally certified wood products: Perspectives and experiences of primary wood manufacturers in Wisconsin. *Forest Products Journal* 55 (1) pp 33.
- Humphreys, D. (2006): *Logjam: Deforestation and the crisis of global governance*, Cornwall, UK
- Hundley, V. and Van Teijlingen, E.R (2001) The importance of pilot studies. *Social Research Update*, University of Surrey, Surrey.
- INDUFOR, Oy. (2002). Feasibility study on Pan-African Forest Certification. Helsinki, Ministry of Foreign Affairs: 74.
- IISD, (2004). The ISO and corporate social responsibility: Small and Medium-sized enterprises, Briefing notes, Winnipeg, May 2004

- ITTO (2009) Annual Review and Assessment of the World Tropical Timber Situation, Yokohama, Japan.
- ITTO, (2004) ITTO Guidelines on Auditing of Criteria and Indicators for Sustainable Forest Management, Yokohama, Japan.
- ITTO (2002) Annual Review and Assessment of the World Tropical Timber Situation, Yokohama, Japan.
- Johnson, S. (2000). "Success and responsibility in Tropical Timber Market." *Tropical Forest Update* 10(3).
- Johnson, S. (2003), Estimating the extent of illegal trade of tropical forest products. *International Forestry Review* 5(3)
- Jung, C.G. (1995) *Memories, dreams, reflections*, Fontana, London
- Karna, J, Hansen, E and Juslin, H. (2003) Environmental activity and forest certification in marketing of forest products – a case study of Europe. *Silva Fennica*, 37 (2). Finnish Society of Forest Science, Helsinki, Finland.
- Kiskor, N.M and Constantino, L.F. (1993) *Forest Management and Competing Land Uses; An Economic Analysis of Costa Rica*. LATEN Dissemination Note 7, Latin America Technical Department, Environment Division, The World Bank, Washington, DC, USA.
- Kishor, N. M. and K. L. Rosenbaum (2003). "Indicators to monitor progress of forest law enforcement and governance initiatives to control illegal practices in the forest sector." *International Forestry Review* 5(3) (September 2003): 211-218.
- Kitzinger, J (1995) *Introducing focus groups* *British Medical Journal* 311 pp 299-302
- Kreuger, R. (1988) *Focus groups: A practical guide for applied research*. Sage, London
- Kotey, N. A., J. Francois, Francois, J, Owusu, J.G.K, Yeboah, R and Antwi, L. (1998). *Ghana Country Study: Policy that works for forests and people*. London, IIED.
- Kuffour K.O (2000) *Forest Management in Ghana: Towards a sustainable approach*. *Journal of African Law*, 44 pp 52-64
- Kyeretwie, O. (2007). Personal Communication
- Lister, E. J, (2009) *Co- regulating corporate social responsibility: government response to forest certification in Canada, the United States and Sweden*, PhD in Resource Management and Environmental Studies University of British Columbia, Vancouver, Canada

- Marfo, E., (2010). *Chainsaw Milling in Ghana: Context, drivers and impacts*. Tropenbos International, Wageningen, the Netherlands. Xii + 64pp.
- Marsh, P. 2003 *Diamond maker seeks harder competitive edge*, London: Financial Times.
- McClendon, B. (2007). *Illegal-logging bill misses the mark*, Washington: The Hill.
- Morasso, G.S., (2005). *Changing International Markets for Timber – What African Producers can do*. Market Report – Italy. Timber Trade Federation, UK.
- MLNR, (1996) *Forestry Development Master Plan*, MLNR, Accra.
- MTCC, (2008). *Annual Report, 2007*. Malaysian Timber Certification Council, Kuala Lumpur, Malaysia.
- MTCC, (2007). *Annual Report, 2006*. Malaysian Timber Certification Council, Kuala Lumpur, Malaysia.
- NWG, (2005). *Ghana Forest Management Certification and Checklist, version 5*, National Working Group on Forest Certification, Accra, Ghana.
- Nussbaum, R. and Simula, M (2004). *Forest Certification: A Review of Impacts and Assessment Frameworks*. Yale, Yale University.
- Nussbaum, R and Simula, M. (2006) *The Forest Certification Handbook*. London, Earthscan.
- Nussbaum, R., Gray, I. and Higman, S. (2003) *Modular Implementation and Verification: A tool Kit for the phased application of forest management standard and certification* Oxford, Proforest. www.proforest.net/publication accessed 28th June, 2006.
- Nussbaum, R. Jennings, S. and Garforth, M. (2002). *Assessing Forest Certification: a practical guide*. Proforest Oxford
- ODI, (2005), *Forestry Briefing Notes*, November, 2005
- Ownbah, C.E., Le Master, D. C., Bourke Jim and Lee, J.G. (2001) *Forest Tenure systems and Sustainable forest management: A case of Ghana*, *Forest Ecology and Management*, 149(2001) pp 253-264
- Owusu, J.H., 1998. *Current convenience, desperate deforestation: Ghana's Adjustment programme and the Forestry Sector*, *The professional Geographer*, 35(2)
- Ozanne, L.K., and Vlosky R. (1997). *Willingness to pay for environmentally certified wood products: A consumer perspective*. *Forest Products Journal* 47(6):39–48.

- Peattie, K. and Charter M. (2002). "*Green marketing*" Chapter in *The Marketing Book* (5th Edition), Michael J. Baker (Ed). CIM/Butterworth-Heinemann.
- PEFC, (2006) National Validation of PAFC Gabon Certification, PEFC, Gabon
- Pinto de Abreu, J.A.K. and Simula, M., (2004) Report on The Procedures for the Implementation of Phased Approaches to Certification in Tropical Timber Producer Countries, ITTO, Yokohama.
- Poore, D. (2003). *Changing Landscapes*, Earthscan Publications Ltd.
- Private Enterprise Foundation (PEF), (2004). Potential Impact of 2004 Budget on the Development of Science and Technology for SMEs. PEF, Accra.
- Purbawiyatna, A. and Simula, M., (2007) Report on the Comparability and Acceptance of Forest Certification Systems, ITTO, Yokohama.
- Raison, J., Flinn, J.W. and Brown, A.G (2000). *Criteria and Indicators for Sustainable Forest Management*. Oxford, CABI Publishing.
- Richards, M., Palmer C., Young, C. F. and Obidzinski, K. (2003). Higher International Standards or rent seeking race to the bottom? The impact of forest product trade liberalisation on forest governance. FAO, Rome.
- Remenyi, D. Williams, B., Money, A., Swartz, E. (2000). *Doing Research in Business and Management : An introduction to process and method*, Sage, London
- Rudel, T. K., Flesher, K, Bates, D., Baptisa, S. and Holmgram, P. (2000). "Tropical deforestation literature: geographical and historical patterns." *Unasylva* 51(203).
- Rytkönen, A. (2003). *Market Access for forest goods and services*, Food and Agricultural Organisation, Rome, 2003
- Sackey A. W. A. (2007) Assessment of forest management practices in Ghana: A cases study of some forest districts in Ghana. *IMRE Journal* vol 1 (2)
- Sarfo- Mensah, P. 2005: *Exportation of timber in Ghana: The menace of illegal logging practices*. Bureau of Integrated Rural Development, Kwame Nkrumah University of Science and Technology. www.feem.it/Fem/Pub/Publications/wpapers/default.htm
- Sann, K. and Thornber, K. (2003) *Impact of market-based instruments and initiatives on trade in forest products and SFM*, Rome, FAO.
- Schwarzbauer, P. and Rametsteiner, E., (2000) The impact on forest products markets in Western Europe – and analysis using forest sector simulation model. *Journal of Forest Policy and Economics* V2 pp 241-256.

- Simula *et al.* (2004) Preliminary report on financial cost-benefit analysis of forest certification and implications of phased approach. ITTO, Yokohama.
- Sraha, A. (2003). Why Small and Micro Enterprises fail in Ghana: A case study of Accra – Tema Area: Dissertation for a Post Graduate Diploma in Administration, Ghana Institute of Public Administration.
- Sharifi, M. A. and Y. Hussin. (2005). "Development of effective information systems supporting monitoring and certification process of production forests in Indonesia: Concept and progress." Retrieved January 2006.
- Smillie, I, The Kimberley Process Certification Scheme for rough diamonds www.verifor.org/case_studies/kimberley.html accessed 9th June 2006.
- Stephenson, J.B. and Greer, L.S. (1981) "Earthnographers in their own cultures: Two Appalachian cases" *Human Organisation*, 40 pp. 123-30
- Steven, H. S. and B. A. Scott (2005). "Environmentally certified wood products: Perspectives and experiences of primary wood manufacturers in Wisconsin." *Forest Products Journal* 55(1): 33.
- Stevens, J. Ahmad M., Ruddell, S. (1998). Forest products certification, A survey of manufactures, *Forest Products Journal* 48 (6) pp 43.
- Stringer, C. (2006). Forest Certification and changing global commodity chains, *Journal of Economic Geography* 6 pp 701-722
- Sun, C. and Chen, X. Small and Medium Forestry Enterprises in China: An initial review of sustainability and livelihoods issues. Research Centre of Ecological and Environmental Economics, Beijing, China and International Institute of Environment and Development, London.
- Teisl, M. F. (2003). "What We May Have Is a Failure to Communicate: Labelling Environmentally Certified Forest Products." *Forest Science* 5(49): 668 - 680.
- Teketay, D. (2005). Status of forest resources, trends in forest certification an FSC in Africa. FSC Stakeholders Workshop. Elmina, Ghana.
- Thomas, R.S., Macqueen, D.J., Hawker, Y., and DeMendonca, T. (2003) Small and Medium Forest Enterprise in Guyana. Guyana Forestry Commission and International Institute for Environment and Development, London.
- Thorner, K., Plouvier, D. and Bass, S. (1999) Certification: Barriers to Benefits – A discussion of equity implications. A forestry certification advisory group briefing paper European Forest Institute, Finland.
- TIDD (2009). Timber Export Permit Report, Ghana.

- TIDD (2002). Timber Export Permit Report, Ghana.
- Toyne, P., O'Brien, G. and Nelson, R. 2002 The timber footprint for the G8 and China: Making a case for green procurement by governments, Switzerland, WWF.
- Treue, T. (2001). Politics and Economics of Tropical High Forest: The case study of Ghana. Dordrecht, The Netherlands, Kluwer Academic Publishers
- TTJ (2005). "Baltics add value as costs and competition rise." TTJ (12/19 November 2005): 10/11.
- TTJ (2005). "UK trade teeters as demand remains subdued." Timber Trades Journal (12/19 November 2005): 12/13.
- UNECE, (2010). Forest products Annual Market Review, 2009-2010. United Nations, Geneva.
- Upton, C. and Bass, .S. (1995) The Forest Certification Handbook, Earthscan Publications Ltd. London.
- Upton, D. A. J. and A. Attah (2003). Commercial Timbers of Ghana - The potential of Lesser Used Species, London, Commonwealth Secretariat and Forestry Commission.
- Van Bodegom, A. J., Savenije, H., Wit, M. (2009). "Forests and Climate Change: adaptation and mitigation." Tropenbos International, Wageningen, The Netherlands. xvi +160pp
- Varangis, P. N., Carlos, A. Primo Braga, C. A, and Takenchi, K. (1993). Tropical Timber Trade Policies: What impact will eco-labelling have? Washington, USA, World Bank.
- Vlosky, R. and S. Duery (2005). "Bolivia: A Global Leader in Certification." Forest Products Journal 55(5): 8-19.
- Vlosky R.P. and Ozanne L.K., (1998). Environmental Certification of Wood products: The US manufacturers' perspective. Forest Products Journal 48 (9) pp 21-26
- Walley, N. and Whitehead, B. (1994) "*It's not easy being green*" Harvard Business Review, Vol 72.3 pp 46-52.
- Wessells, C.R., Cochrane, K., Deere, C., Wallis, P. and Willmann, R. (2001) Product Certification and Ecolabelling or Fisheries Sustainability. FAO, Rome. .
- Wenban-Smith, M, (2005) FSC Policy and Standards Unit: An Overview. Presentation at a Stakeholders Workshop, held in Kumasi, Ghana, 29-30 August 2005

Wong, V., Turner, W. and Stoneman, P. 1996 Marketing strategies and Market Prospects for environmentally-friendly consumer products, *British Journal of Management*, 7, 263-281.

World Bank, (2010) World Development Indicators 2010, World Bank, www.devdata.worldbank.org/AAG/gha-aag.pdf accessed 20th August, 2010
www.keurhout.nl/english/background.htm, accessed 15th November, 2007)
www.lei.or.id, accessed, 12th July, 2006
www.rspo.org/, accessed 22nd May, 2010
www.sfiprogram.org/ accessed 29 August, 2010.

Young, D. 2006. Personal Communication.

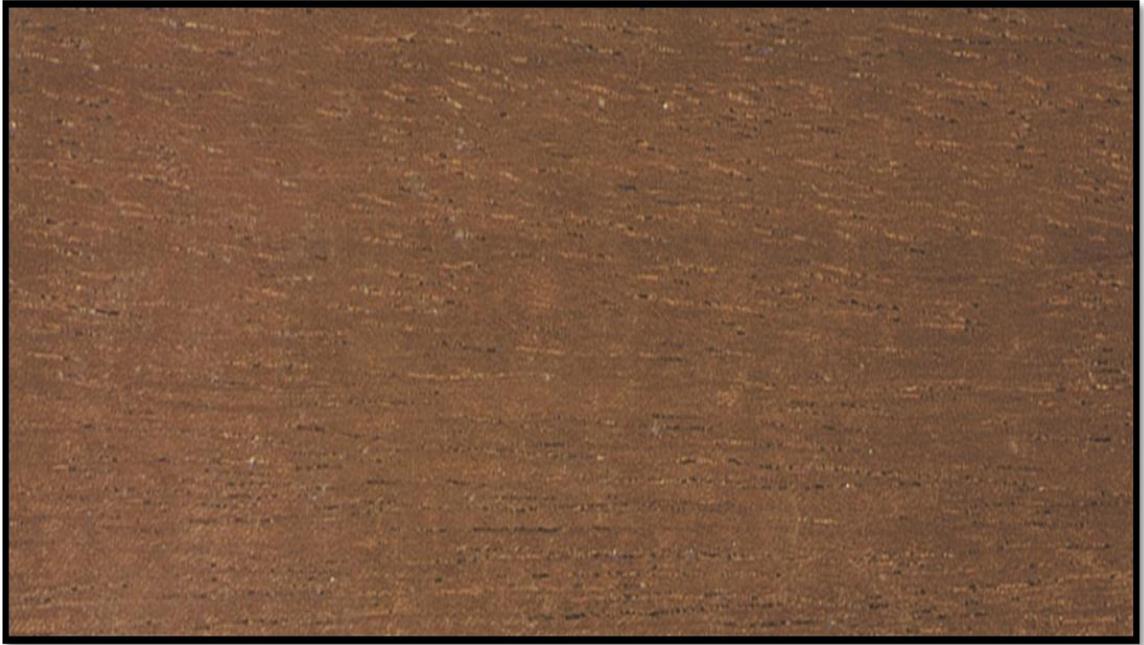
Appendix 1
Pictures of dominant species in Ghana's forests



Item 1: Ceiba



Item 2: Celtis



Item 3: Kosipo/Candollei



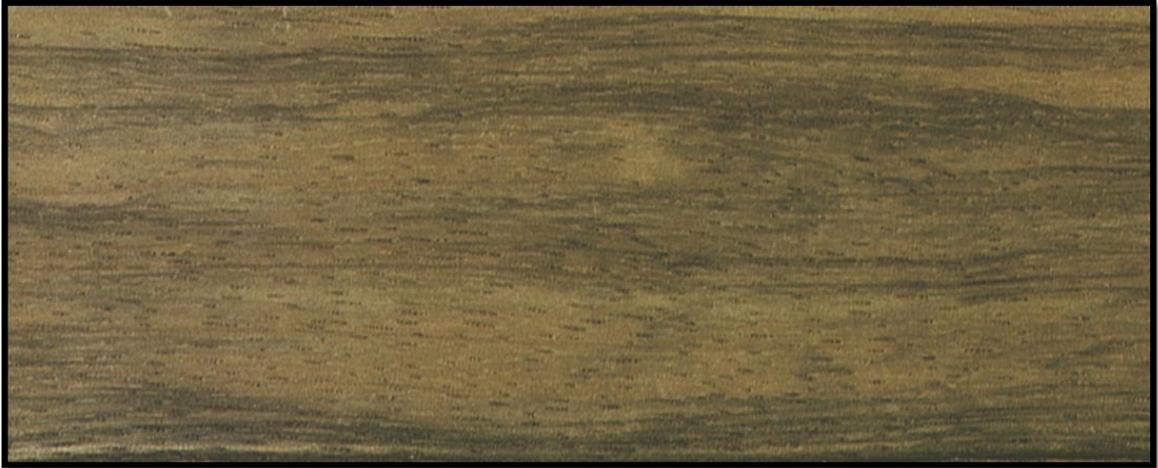
Item 4: Dahoma



Item 5: Danta



Item 6: Kyenkyen



Item 7:Ofram



Item 8: Sapele



Item 9: Utile



Item 10: Wawa

Appendix 2

Components for Schematic diagram of Modular Implementation and Verification

GROUP 1

Legal component

- L1 Resource rights
- L2 Operating legally
- L3 Control of unauthorised activities

GROUP 3

Environmental component

- E1 Waste management
- E2 Assessment of environmental resources and impacts
- E3 Conservation and environmental protection

GROUP 4

Social component

- S1 Health and safety
- S2 Workers' rights
- S3 Stakeholder analysis and social impact appraisal
- S4 Rights and needs of forest users
- S5 Employment and local development

GROUP 2

Technical component

- T1 Management planning
- T2 Silviculture and sustained yield
- T3 Plantation design (for plantation timber)
- T4 Economic viability
- T5 Forest operations and operational planning
- T6 Monitoring
- T7 Training and capacity building
- T8 Forest protection
- T9 Chemicals and biological control

GROUP 5

Chain of custody component

- C1 Chain of custody

Appendix 3: Road map for forest certification in Ghana

Date	Activity	Major Outcomes
November 1995	Launching of the Ghanaian certification process	Adopted and initiated a certification process involving consultations, system development, implementation, monitoring and review
June 1996	First Stakeholder Workshop	-Stakeholders presented their views on the certification scheme - Developed consensus on the scope and economics of certification and strategies for the implementation of certification
August 1996	Establishment of the National Committee on Certification (NCC)	-Recommended the setting up of a National Committee on Certification (NCC) to co-ordinate the development of a credible certification system -Ministry of Lands and Forestry (MLF) formally mandated the NCC to coordinate the development of a credible certification scheme.
September 1996	Formation of the Technical Committee on Certification (TCC)	-The Director of the Ghana Standards Board (GSB) made the Chair of the TCC -The TCC was charged with the responsibility of developing standards and criteria for SFM and an appropriate framework for implementation of the certification system
November 1996	African Regional Seminar on Certification of SFM	-Developed African position on international timber certification -Formulated strategies for harmonization and mutual recognition of certificate schemes in the member countries of the African Timber Organization (ATO)
November 1997	Workshop on Potential for Sustainable Timber Production outside Forest Reserves	-Developed stakeholder consensus on standards for quality forest management (QFM) outside forest reserves -Considered the appropriate mechanism for log tracking and other chain of custody issues for off-reserve SFM certification
December 1997	Publication of the draft Standards Document	The Technical Working Group (TWG) of the NCC published the draft QFM standards documents Principles document Criteria and Indicators document Systems document
December 1999	Pilot testing of the computer-based log tracking system	-Stakeholders and technical experts tested the bar-coding of trees and logs. -Tested the inspection and reporting of log movements in the chain of custody process with computer-aided database and Transmission system
April 2000	International Certification Workshop	Shared the findings of the field study and pilot testing of the log tracking system.
November 2000	Forest Management Certification Standards and Checklist – Version 4	Standards to reinforce the forest management system and to facilitate its application in the field
May 2002	Capacity Building in Forest Certification Workshop	Inter-institutional development of training capacity in forest certification. Re-launch of the National Working Group on Forest Certification and Sustainable Forest Management
August 2004	International Tropical Timber Organisation (ITTO) and African Timber Organisation (ATO) Project PD 124/01 Rev.2 (M)	Harmonization of Ghanaian Standards with ATO Criteria and Indicators.
April 2007	Ghana Forest Certification Standard in FSC format	Stakeholder consultations on Ghana Forest Certification Standard in FSC format to facilitate FSC endorsement of Ghana standards.
July, 2010		Submission of GFC standards to FSC for endorsement

Appendix 4

SURVEY ON PERCEPTIONS OF TIMBER CERTIFICATION IN GHANA

- Q1** **Name of Company** _____
- Q2** **Position in Company** _____
- Q3** **Number of employees**
- 1-8
- 9-29
- 30+
- Q4** **Nature of Business of your company**
- Plymill.....
- Sawmill.....
- Veneer mill
- furniture
- Q5** **Does your company own a Timber Utilisation Contract?**
- Yes.....
- NO.....
- I don't know
- Q6** **Does your company own a Timber Utilisation Permit?**
- Yes
- No
- I don't know
- Q7** **Have you heard of forest certification?**
- Yes.....
- No
- I don't know
- Q8** **Is your company engaged in forest certification?**
- Yes.....
- No
- I don't know
- Q9** **What level of Price Premium are you expecting for timber from certified forests?**
- none
- 1-3%.....
- 4-5%.....
- 5-10%

Q10 List five (5) constraints your company is contending with in pursuing forest certification

Q11 Standards

	<i>Strongly agree</i>	<i>Agree</i>	<i>Neither Agree nor disagree</i>	<i>Disagree</i>	<i>Strongly disagree</i>
National standards should be used for forest certification	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ghana's national standard should be receive accreditation from any of the existing forest certification schemes (e.g. FSC, PEFC etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Our Company is aware of Ghana's forest certification standard	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FSC has the best standards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pan African Forest Certification standards should be used by African Countries	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Meeting certification standards is an added cost	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am aware of Criteria and Indicators of the International Tropical Timber Organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q12 Stakeholder Consultations

	<i>Strongly Agree</i>	<i>Agree</i>	<i>Neither agree nor disagree</i>	<i>Disagree</i>	<i>Strongly disagree</i>
Our company is consulted in developing standards for certification in Ghana	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There is sufficient public debate on Forest Certification in Ghana	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There is adequate forum for stakeholder consultations on forest certification in Ghana	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Our company is consulted on the development of domestic policies on forest management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stakeholder consultations are dominated by the ENGO's	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Consultations engage landowners	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Consultations engage the communities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q13 Government support

	<i>Strongly Agree</i>	<i>Agree</i>	<i>Neither agree nor disagree</i>	<i>Disagree</i>	<i>Strongly disagree</i>
Government has a key role to play in timber certification	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Government must introduce legislation to facilitate the development of forest certification	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Government must facilitate the development of forest certification	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Forest certification must remain voluntary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Government should contribute about 30% of the cost of certification	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Forest certification is best promoted by Non-Governmental organisations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q14 Model for forest certification in Ghana

	<i>Strongly Agree</i>	<i>Agree</i>	<i>Neither agree nor disagree</i>	<i>Disagree</i>	<i>Strongly disagree</i>
Ghana should pursue phased approach to forest certification	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Number of phases should depend on the gaps identified in the baseline audit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Number of phases should be pre-determined	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Legality should form the first phase	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Legal compliance of national and international regulations, laws and treaties must be enforced as first phase towards forest certification	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ISO 14001 should form the basis for any certification scheme	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q15 Prioritisation of elements in the certification model (*prioritise the elements below using 1 for least and 6 for highest priority*)

- Stakeholder consultations*.....
- Domestic use rights for local communities*.....
- Respect for workers rights*
- Resource rights*.....
- Good legal framework*.....
- Economic framework*.....

Q16

Markets

	<i>Strongly agree</i>	<i>Agree</i>	<i>Neither agree nor disagree</i>	<i>Disagree</i>	<i>Strongly disagree</i>
Export markets demand timber from sustainable managed forests	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There is domestic demand for timber from sustainable managed forests	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Our company will pursue forest certification in response to market demands	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Forest certification will enhance timber product sales	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Forest Certification is about meeting market requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Forest certification is a market tool for promoting sustainable forest management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>