



## **FSC-STD-GHA-01-2012 Ghana Forest Stewardship Standard EN**

**Version 5**

**Working Group on Forest Certification**

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## 1. Preface

### 1.1. Historical development

Since 1997 Ghana has been developing a national certification programme for forestry. The programme of development started in the form of a project: the Ghana Forest Management Certification Systems Project - a project of Ghanaian Government with technical and financial assistance provided by the European Union (EU contract B7-620/97-/4VIII/FOR) and the Government of the Netherlands (GH 008701).

The standards attempt to define good forest practice in Ghana. The process by which these standards were developed involved the consultation and active collaboration of a broad range of stakeholders. A set of draft standards – *The Quality Management of the Forests of Ghana: Forest Standards, Principles and Specification* - were finalised and published in March 1999.

Since 1994, the Government of Ghana and its principal technical and executive agencies have modified the way that forests have been managed. Ghana has substantially restructured its executive agencies in order to support the new management system and to ensure the delivery of quality forest management. The structure and content of the standards have been strongly influenced by the new forest management system and revised institutional framework. Funding for the finalization of the standard has been provided since 2006 by the Interchurch Organization for Development Cooperation based in the Netherlands.

These standards do not seek to replace or substantially redefine the management system that Ghana has developed. Indeed, they seek to reinforce the management system and ensure its application in the field.

### 1.2. Descriptive statement of FSC

FSC is an independent, non-governmental, not for profit organization established to promote the responsible management of the world's forests. It provides standard setting, trademark assurance and accreditation services for companies and organizations interested in responsible forestry. Products carrying the FSC label are independently certified to assure consumers that they come from forests that are managed to meet the social, economic and ecological needs of present and future generations. FSC maintains representation in more than 45 countries. Forests provide us with clean water, fresh air, and help combat global warming. They also provide food, medicine and important natural resources, such as timber and paper. If managed responsibly, forests and plantations benefit forest people and the global community. However, in some countries as much as 80% of the timber is harvested illegally. This often involves violation of human rights and felling of protected forests.

For further information, please visit: [www.fsc.org](http://www.fsc.org)

#### **Highlights of this current version include:**

1. Alignment with the FSC Principles and Criteria (P&C)
2. Update of indicators and verifiers to reflect new institutional nomenclature, laws, regulatory and administrative requirements.
3. Incorporation of indicators and verifiers for Plantations (FSC Principle 10)
4. Incorporation of separate indicators for Small Low Intensity Managed Forests (SLIMF) to meet the needs of this group of forest managers/Owners.

### 1.2 Descriptive statement of the National Office / Standard Setting Group

Working Group (WG) on Forest Certification is a registered NGO accredited by the Forest Stewardship Council (FSC) to promote responsible forest management in Ghana. The registration took place on 13<sup>th</sup> August, 2004 at the Registrar Generals Department in Accra. The mission of the WG is to provide technical services to facilitate the development of sound forest management

standards and the operation of a credible system of forest and chain of custody certification in Ghana. WG achieve this by

- Promoting awareness about, and improve communication and information sharing on, forest certification and sustainable forest management among key stakeholders.
- Acting as a focal point for training and capacity building in sustainable forest management and certification.
- Drafting and regularly review the national standards for forest certification and sustainable forest management.
- Promoting consultations among, and the participation of, key stakeholders in the processes relating to the development and testing of national forest stewardship standards.
- Facilitating and monitoring the forest and chain of custody certification processes and provide support to the activities of certification bodies in the country.

## 2. Introduction to the standard

### 2.1 Purpose of the standard

This standard sets out the required elements against which FSC accredited Certification Bodies shall evaluate forest management practices within the given scope of the standard. The FSC Principles and Criteria for Forest Stewardship provide an internationally recognized standard for responsible forest management. However, any international standard for forest management needs to be adapted at the regional or national level in order to reflect the diverse legal, social and geographical conditions of forests in different parts of the world. The FSC Principles and Criteria therefore require the addition of indicators that are adapted to regional or national conditions in order to be implemented at the forest management unit (FMU) level. The FSC Principles and Criteria together with a set of such indicators accredited by FSC constitute an FSC Forest Stewardship Standard.

This standard follows the requirements of *FSC-STD-20-002 Structure and content of forest stewardship standards* (November 2004) to improve consistency and transparency in certification decisions between different certification bodies in Ghana and in different parts of the world, and thereby to enhance the credibility of the FSC certification scheme as a whole.

### 2.2 Scope

This standard is applicable to all forest operations seeking FSC certification within Ghana. This includes Natural Forest and Plantation in Ghana

### 3. Version of Standard

#### 3.1 The current Version 5

The current GFMCS is an output of the Working Group on Forest Certification Ghana, in fulfilment of one of its basic function of routine review of the GFMCS. The review of the earlier version (Version 4) has therefore been carried out to reflect new knowledge and changed public values and to ensure that the standards continues to contribute to the processes of improving systems and programmes for Sustainable Forest Management (SFM) in Ghana.

### 4. Context

#### 4.1. General description of geographical area covered by the standard

Ghana has a long history of forest management, aimed at ensuring responsible stewardship over the forests within her territory to yield sustained environmental, social and economic benefits for the owners and for the larger society. In this period of almost 100 years that some form of regulated forestry has been practised, concepts of what constitutes "good" or "responsible" forest management have evolved in response to various developments and pressures. The development of written, verifiable standards that would make it possible for specific forests to be certified as being responsibly managed is thus only one of the latest initiatives in the process of developing quality forest management in the country.

#### **Ghana's forests, forest ownership and administration**

Ghana may be divided into two broad ecozones with two broad natural forest vegetation:

- the closed forest, two-peak rainfall ecozone carrying closed tropical moist or "high forests";
- The drier open forest ecozone carrying savanna type woodlands.

Management for commercial timber production has largely taken place in the closed forests. Plantation Forestry for timber production has, in the past, been a minor activity compared to the natural closed forest management.

An important feature of Ghanaian Forestry is that forests and forest lands largely belong to various social groups or communities, not to "Government". The attempt by the early colonial Government to take over ownership of those forests that would be designated as permanent forests (forest reserves) met with such strong resistance that it had to be abandoned.

Nevertheless a tradition of the forest owning communities technically managing their forests has not developed. The Public Forestry Authority has therefore not been only policy maker and regulator of forest management, but has always played an active role managing forests on the ground on behalf of the forest owners.

The logging and wood industry is largely a private sector activity, being undertaken by numerous small and medium sized commercial enterprises. The acquisition of the rights to harvest on a defined forest area for a defined period of time, and the activities of the logging, wood manufacturing and wood exporting companies have been regulated by legislation and governmental administrative instructions for about 100 years.

Substantial portions of the natural forests have, to date, been legally set aside and managed for permanent protection and for the conservation and sustainable production of an array of environmental, social and economic benefits. These areas which are physically demarcated on the ground, surveyed, pillared and described are usually referred to as the forest reserves. They constitute part of the permanent forest estate of the nation, to be managed for the benefit not only of the owners but also for other segments of the society.

#### 4.2. List of members of the committee that prepared the standard

<b>Environmental</b>	<b>Economic</b>	<b>Social</b>
<b>Name:</b> <b>Abraham Baffoe</b>	<b>Name:</b> <b>Ernest Asare Abeney</b>	<b>Name:</b> <b>Wallace Koomson</b>
<b>Stakeholder Group</b> Civil Society	<b>Stakeholder Group</b> Training and Research Institution	<b>Stakeholder Group</b> Tree Growers
<b>Expertise</b> Environmental advocacy	<b>Expertise</b> Education/Logging/Harvesting	<b>Expertise</b> Small Scale Plantation Development
<b>Name:</b> <b>Ama Kudom-Agyemang</b>	<b>Name:</b> <b>Joseph William Osei</b>	<b>Name:</b> <b>Benjamin Kwame Sam</b>
<b>Stakeholder Group</b> Women Group	<b>Stakeholder Group</b> Independent representative Bodies	<b>Stakeholder Group</b> Timber and Woodworkers Union of the Trade Union Congress
<b>Expertise</b> Environmental Journalism, Communication and Gender issues	<b>Expertise</b> Forester/Economist	<b>Expertise</b> Labour Rights
<b>Name:</b> <b>Tabi Agyarko</b>	<b>Name:</b> <b>Stephen Darko</b>	<b>Name:</b> <b>Nana Ansah Adu Baah II</b>
<b>Stakeholder Group</b> Government	<b>Stakeholder Group</b> Wood Industry	<b>Stakeholder Group</b> Landowners
<b>Expertise</b> Governance	<b>Expertise</b> Timber Trade/Agriculture	<b>Expertise</b> Timber Grader

4.3. List of key consultants and advisors who assisted the committee

Name of Expert Team	Members	List of documents (ToR, work plan, documents produced)
Emmanuel Amoah Boakye	Staff, Working Group on Forest Certification	Executive Secretary/GIS Analyst
Matthew Wenban Smith		Standards drafting
J.G.K. Owusu		Policy, Legislation and Documentation
J. W. Osei		Auditor, Smartwood. Drafting and Field-testing team leader.
Demel Teketay		Regional Director, FSC.

4.4. Associated documentation referenced in the standard.

*FSC STD 01 001 V4 0 EN FSC Principles and Criteria*  
*FSC-STD-60-006 Procedure for the development of Forest Stewardship Standards*  
*FSC STD 20 002 V2 1 EN Structure and Content Forest Stewardship Standards*  
*FSC STD 01 003 V1 0 EN SLIMF Eligibility Criteria*  
*FSC STD 01 003a EN SLIMF eligibility criteria addendum 2008 02 13*  
*FSC-GUI-60-100 Guidance on the interpretation of the FSC Principles and Criteria to take account of scale and intensity*  
*FSC-GUI-20-200 EN FSC Guidelines for Certification Bodies 2005*  
*FSC POL 30 401 EN FSC certification and ILO Conventions 2002*  
*FSC POL 20 002 EN Partial Certification 2000*  
*FSC Guidance Document FSC-GUI-30-004: FSC Principles 2 and 3: Guidance on Interpretation*  
*FSC GUI 30 001 V2 0 EN FSC Pesticides Policy Guidance 2007*  
*FSC GUI 30 001a V1 0 EN Approved derogations for use of pesticides 2008 01 21*  
*FSC POL 30 001 EN FSC Pesticides policy 2005*  
*FSC PRO 01 004 V2 1 EN Processing pesticide derogation applications*  
*FSC POL 30 602 EN FSC GMO Policy 2000*  
*FSC ADV 30 602 EN Conversion of plantation to non forest land 2004 03 29*  
*FSC ADV 30 602 EN Conversion of plantation to non forest land 2004 03 29*  
*FSC ADV 30 901 EN Interpretation of Criterion 9 2 2003 04 28*  
*FSC ADV 31 001 EN Interpretation of C10 9 2002 12 03*

## 5. TERMS AND DEFINITIONS

AAC	Annual Allowable Cut
CBA	Collective Bargaining Agreement
CBD	Convention on Biological Diversity
CITIES	Convention on International Trade in Endangered Species
DFM	District Forest Manager
DFO	District Forest Office
DFA	Defined Forest Area
EIA	Environmental Impact Assessment
FC	Forestry Commission
FMU	Forest Management Unit
FMP	Forest Management Plan
FMS	Forest Management Systems
FSC	Forest Stewardship Council
FSD	Forest Service Division
FR	Forest Reserve
FRNR	Faculty of Renewable Natural Resources
GSBA	Globally Significant Biodiversity Area
HCV	High Conservation Value
HCVF	High Conservation Valued Forest
HFZ	High Forest Zone
H&S	Health and Safety
ILO	International Labour Organisation
ITTA	International Tropical Timber Agreement
LIF	Log Information Form
LMCC	Log Measurement and Conveyance Certificate
LUS	Lesser Used Species
MoP	Manual of Procedures
NHIS	National Health Insurance Scheme
NTFP	Non-Timber Forest Products
PPE	Prevention and Protective Equipments
PSP	Permanent Sample Plots
RFM	Regional Forest Manager
RFO	Regional Forest Office
RIL	Reduced Impact Logging
RMSC	Resource Management Support Centre
RS	Range Supervisor
RTE	Rare Threatened and Endangered
SFM	Sustainable Forest Management
SIA	Social Impact Assessment
SRA	Social Responsibility Agreement
TIF	Tree Information Form
TO	Technical Officer
TOS	Timber Operational Specifications
TUC	Timber Utilisation Contract
WSD	Wildlife Services Division



## 6. GLOSSARY

**Biological diversity:** The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems. (see Convention on Biological Diversity, 1992)

**Biological control agents:** Living organisms used to eliminate or regulate the population of other living organisms.

**Biological diversity values:** The intrinsic, ecological, genetic, social, economic, scientific, educational, cultural, recreational and aesthetic values of biological diversity and its components. (see Convention on Biological Diversity, 1992)

**Chain of custody:** The channel through which products are distributed from their origin in the forest to their end-use.

**Chemicals:** The range of fertilizers, insecticides, fungicides, and hormones which are used in forest management.

**Criterion (pl. Criteria):** A means of judging whether or not a Principle (of forest stewardship) has been fulfilled.

**Customary rights:** Rights which result from a long series of habitual or customary actions, constantly repeated, which have, by such repetition and by uninterrupted acquiescence, acquired the force of a law within a geographical or sociological unit.

**Ecosystem:** A community of all plants and animals and their physical environment, functioning together as an interdependent unit.

**Endangered species:** Any species which is in danger of extinction throughout all or a significant portion of its range.

**Exotic species:** An introduced species not native or endemic to the area in question.

**Forest integrity:** The composition, dynamics, functions and structural attributes of a natural forest.

**Forest management/manager:** The people responsible for the operational management of the forest resource and of the enterprise, as well as the management system and structure, and the planning and field operations.

**Forest management unit (FMU):** a clearly defined forest area with mapped boundaries, managed by a single managerial body to a set of explicit objectives which are expressed in a self-contained multi-year management plan.

**Forest stewardship:** forest management which, in conformity with the FSC Principles and Criteria for Forest Stewardship, is environmentally responsible, socially beneficial, and economically viable.

**Genetically modified organisms:** Biological organisms which have been induced by various means to consist of genetic structural changes.

**Indicator:** a quantitative or qualitative variable which can be measured or described, and which provides a means of judging whether a forest management unit complies with the requirements of an FSC Criterion. Indicators and the associated thresholds thereby define the requirements for responsible forest management at the level of the forest management unit and are the primary basis of forest evaluation.

**Indigenous lands and territories:** The total environment of the lands, air, water, sea, sea-ice, flora and fauna, and other resources which indigenous peoples have traditionally owned or otherwise occupied or used. (Draft Declaration of the Rights of Indigenous Peoples: Part VI)

**Indigenous peoples:** "The existing descendants of the peoples who inhabited the present territory of a country wholly or partially at the time when persons of a different culture or ethnic origin arrived there from other parts of the world, overcame them and, by conquest, settlement, or other means reduced them to a non-dominant or colonial situation; who today live more in conformity with their particular social, economic and cultural customs and traditions than with the institutions of the country of which they now form a part, under State structure which incorporates mainly the national, social and cultural characteristics of other segments of the population which are predominant." (Working definition adopted by the UN Working Group on Indigenous Peoples).

**High Conservation Value Forests:** High Conservation Value Forests are those that possess one or more of the following attributes:

a) forest areas containing globally, regionally or nationally significant concentrations of biodiversity values (e.g. endemism, endangered species, refugia); and/or large landscape level forests, contained within, or containing the management unit, where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance

b) forest areas that are in or contain rare, threatened or endangered ecosystems

c) forest areas that provide basic services of nature in critical situations (e.g. watershed protection, erosion control)

d) forest areas fundamental to meeting basic needs of local communities (e.g. subsistence, health) and/or critical to local communities' traditional cultural identity (areas of cultural, ecological, economic or religious significance identified in cooperation with such local communities).

**Landscape:** A geographical mosaic composed of interacting ecosystems resulting from the influence of geological, topographical, soil, climatic, biotic and human interactions in a given area.

**Local laws:** Includes all legal norms given by organisms of government whose jurisdiction is less than the national level, such as departmental, municipal and customary norms.

**Long term:** The time-scale of the forest owner or manager as manifested by the objectives of the management plan, the rate of harvesting, and the commitment to maintain permanent forest cover. The length of time involved will vary according to the context and ecological conditions, and will be a function of how long it takes a given ecosystem to recover its natural structure and composition following harvesting or disturbance, or to produce mature or primary conditions.

**Mature secondary forest:**

**Native species:** A species that occurs naturally in the region; endemic to the area.

**Natural cycles:** Nutrient and mineral cycling as a result of interactions between soils, water, plants, and animals in forest environments that affect the ecological productivity of a given site.

**Natural Forest:** Forest areas where many of the principal characteristics and key elements of native ecosystems such as complexity, structure and diversity are present, as defined by FSC approved national and regional standards of forest management.

**Non-timber forest products:** All forest products except timber, including other materials obtained from trees such as resins and leaves, as well as any other plant and animal products.

**Other forest types:** Forest areas that do not fit the criteria for plantation or natural forests and which are defined more specifically by FSC-approved national and regional standards of forest stewardship.

**Plantation:** Forest areas lacking most of the principal characteristics and key elements of native ecosystems as defined by FSC-approved national and regional standards of forest stewardship, which result from the human activities of either planting, sowing or intensive silvicultural treatments.

**Precautionary approach:** Tool for the implementation of the precautionary principle.

**Principle:** An essential rule or element; in FSC's case, of forest stewardship.

**Silviculture:** The art of producing and tending a forest by manipulating its establishment, composition and growth to best fulfil the objectives of the owner. This may, or may not, include timber production.

**SLIMF (small or low intensity managed forest):** a forest management unit which meets specific FSC requirements related to size and/or intensity of timber harvesting, and can therefore be evaluated by certification bodies using streamlined evaluation procedures. The applicable FSC requirements are defined in *FSC-STD-01-003 SLIMF Eligibility Criteria*.

**Stakeholder:** individuals and organizations with a legitimate interest in the goods and services provided by an FMU; and those with an interest in the environmental and social effects of an FMU's activities, products and services. They include: those individuals and organizations which exercise statutory environmental control over the FMU; local people; employees; investors and insurers; customers and consumers; environmental interest and consumer groups and the general public [modified from Upton and Bass, 1995].

**Succession:** Progressive changes in species composition and forest community structure caused by natural processes (nonhuman) over time.

**Tenure:** Socially defined agreements held by individuals or groups, recognized by legal statutes or customary practice, regarding the "bundle of rights and duties" of ownership, holding, access and/or usage of a particular land unit or the associated resources there within (such as individual trees, plant species, water, minerals, etc).

**Threatened species:** Any species which is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

**Use rights:** Rights for the use of forest resources that can be defined by local custom, mutual agreements, or prescribed by other entities holding access rights. These rights may restrict the use of particular resources to specific levels of consumption or particular harvesting techniques

**PRINCIPLE #1: COMPLIANCE WITH LAWS AND FSC PRINCIPLES**

Forest management shall respect all applicable laws of Ghana, and international treaties and agreements to which the country is a signatory, and comply with all FSC Principles and Criteria.

Forest management shall respect all applicable national and local laws and administrative requirements.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
<p>1.1.1 Forest managers shall maintain an up to date register of all statutes relating to forestry <b>and</b> possess copies of all relevant regulations</p>	<p>1. Register of relevant documentation  2. Copies of up-to-date statutes and regulations</p>	<ul style="list-style-type: none"> <li>• Office of DFM/RFM of FSD</li> <li>• Office of the Forest manager</li> </ul>	<p>Relevant acts include:</p> <ul style="list-style-type: none"> <li>• Forest and Wildlife Policy 1994</li> <li>• Timber Resource Management Act 1997</li> <li>• Timber Resource Management Amendment Act, 2002 Act 617</li> <li>• Wildlife Conservation Regulations 1971 LI 685 and its amendments of 1983 L.I 1284; 1988 L. I 1357; 1989 L. I 1452</li> <li>• Forestry Commission Act 1999</li> <li>• Trees and Timber Amendment Act 493 1997</li> <li>• Companies Code 1963 and/or Incorporated Private partnerships Act 1962</li> <li>• Provincial ordinances</li> <li>• Exchange Control Act</li> <li>• Investment Act</li> <li>• Environmental Health Act</li> <li>• National Health and Safety Regulations</li> <li>• Labour Act 651 of 2003</li> </ul> <p>(List not exhaustive)</p>	

<p>1.1.2 Forest managers shall demonstrate an understanding of and compliance with relevant codes of practice, guidelines and agreements.</p>	<ol style="list-style-type: none"> <li>1. TUC holders expend directly a sum of <u>not</u> less than 5% of annual royalty accruing from the TUC in support of development of the community.</li> <li>2. Company policy coincides with laws and regulations</li> <li>3. Forest management objectives and procedures coincide with laws and regulations</li> <li>4. Duly authorised Timber Utilisation Contract</li> </ol>	<p>Discussions with:</p> <ul style="list-style-type: none"> <li>• DFM/RFM</li> <li>• TUC/concession holder</li> </ul> <p>Office visits</p>	<p>Timber Resource Management Regulations 1998 – 13 (1) a, b and 14 (1) d Timber Resource Management Regulation Amendment Relevant guidelines and codes of practice include:</p> <ul style="list-style-type: none"> <li>• Timber Utilisation Contract Procedures Manual</li> <li>• Manual of Procedures</li> <li>• Terms of Timber Utilisation Contract</li> <li>• Timber Operational Specifications (TOS)</li> <li>• Social Responsibility Agreements (SRA)</li> <li>• Forest protection strategies                             <ul style="list-style-type: none"> <li>• Logging manual</li> </ul> </li> </ul>	
<p>1.1.3 Forest managers shall document and implement procedures to monitor compliance with laws and regulations and for taking corrective action if/when any non-compliance is detected</p>	<ol style="list-style-type: none"> <li>1. Register of offences</li> <li>2. Complaints register</li> <li>3. Reports of field visits by DFM/RFM/Managers</li> <li>4. Offence files of DFM</li> </ol>	<p>DFM office – FSD  Office of Forest manager</p>	<p>Timber Utilisation Contract Procedures Manual</p>	
<p>1.1.4 TUC shall be awarded in accordance with due procedures laid down in the Timber Resource Management Regulations 1998</p>	<ol style="list-style-type: none"> <li>1. TUC signed by appropriate authority exists.</li> <li>2. TUC with all annexes</li> <li>3. Tender documents including advertisements</li> <li>4. Minutes of Evaluation Committee</li> <li>5. Audit trail of progress of</li> </ol>	<p>Discussions and office visits at:</p> <ul style="list-style-type: none"> <li>• Responsible ministry for Forestry</li> <li>• Forestry Commission</li> <li>• DFM/RFM office</li> <li>• Forest manager</li> </ul>	<p>Records held by TUC holder will need to be scrutinised independently to ensure that due process was observed</p> <p>Timber Utilisation Contract Procedures Manual</p>	

	TUC application process			
1.1.5 There shall be no substantiated outstanding claims of non-compliance with national and local laws, regulations or administrative requirements related to forest management.	<ol style="list-style-type: none"> <li>1. Completed Environmental Impact Assessment</li> <li>2. Health and Safety Certificates</li> <li>3. Records of payments and subscriptions from responsible Labour Ministry</li> <li>4. Records of union meetings</li> <li>5. No outstanding court cases</li> </ol>	Responsible Ministry for Environment and Forestry Responsible Ministry for Labour Forest managers and Union representatives Forestry Commission	Consultation with regulatory authorities and other official bodies responsible for monitoring compliance  Timber Utilisation Contract Procedures Manual	

1.2 All applicable and legally prescribed fees, royalties, taxes and other charges shall be paid.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
1.2.1 Forest managers shall provide evidence that applicable fees, royalties, taxes and other applicable charges have been paid.	<ol style="list-style-type: none"> <li>1. Register of fees paid                             <ul style="list-style-type: none"> <li>• stumpage</li> <li>• royalty</li> <li>• land rent</li> <li>• fines</li> <li>• compensation payments</li> </ul> </li> <li>2. Official receipts</li> <li>3. Offence register</li> <li>4. Records held by local administrator of stool lands</li> <li>5. Records held by District Assembly</li> </ol>	DFM office  Local administrator of stool lands	For details of fees see: <ul style="list-style-type: none"> <li>• Register of Fees held by District Forest Manager</li> <li>• The terms of the Timber Resource Management Regulations 1998 and Amendment</li> <li>• Timber Utilisation Contract</li> <li>• Copies of licence agreement</li> <li>• TUC Procedures Manual</li> </ul>	

1.3 In signatory countries, the provisions of all binding international agreements such as CITES, ILO Conventions, ITTA, and Convention on Biological Diversity, shall be respected.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
<p>1.3.1 Forest managers shall be aware of the implications of the Convention on International Trade in Endangered Species (CITES) in the region, and shall implement appropriate measures or controls to ensure that its provisions are respected.</p>	<p>1. Species on CITES list Appendix 1 are protected 2. Species on CITES list Appendix 2 possess appropriate export licences and documentation 3. Adequate protection measures exist for species that appear on Appendixes 1 and 2</p>	<p>Discussions with Forest manager  Discussions with RFM and DFM</p>	<p>Note local species on CITES appendices 1 and 2 (see Annex 2).  Contact Ministry or local body responsible for monitoring of CITES agreement in Ghana</p>	
<p>1.3.2 Forest managers shall adhere to Ghana's Labour Laws and ILO conventions applicable in Ghana and shall implement appropriate measures to ensure that their provisions are respected.</p>	<p>1. Employment policies of:     • Forest manager     • Contractors 2. Formal contracts of employment 3. Terms of contracts for staff of:     • Forest manager     • Contractors Operational manuals and Codes of Conduct</p>	<p>Discussions with staff of the forest manager  Discussions with Labour Unions and representatives</p>	<p>Ghana's Labour Laws</p>	
<p>1.3.3 Forest managers shall be aware of the implications of the ITTA in Ghana and shall implement appropriate measures to ensure that its provisions are respected.</p>	<p>1. Discussions with Forest managers</p>	<p>Discussion with responsible Forestry Ministry and FC staff</p>		
<p>1.3.4 Forest managers shall be aware of the implications of the Convention on Biological Diversity applicable in their region, and implement appropriate measures to ensure that its</p>	<p>2. Discussion with forest managers of the policies and procedures of responsible Forestry Ministry and Forestry</p>	<p>Discussion with staff and managers of Forestry Commission and FSD  Discussion with staff of Min of Environment</p>	<p>Note implications of Convention on Biological Diversity in the region of management and any guidance laid down by local relevant authority. In this</p>	

provisions are respected.	Commission 2. Comparison of Forest Management System with requirements of CBD		case the responsible Environment Ministry	
1.3.5 Forest managers shall be aware of and adhere to all phytosanitary regulations to control pests and diseases of timber and wood products traded internationally or internally.	1. Discussions with forest managers about the policies and procedures of Forestry Commission 2. Conditions laid down by TIDD 3. Procedures and practices of TUC/Concession holder on prophylactic treatment of logs	Discussions with FC staff at the district regional and Headquarters  Discussions with TIDD staff	See Guidance Notes for Auditors on list of FSC prohibited Pesticides  FAO: International Standard for phytosanitary measures (Guidelines for Regulating Wood Packaging Material in International Trade)	
1.3.6 Forest managers shall be aware of the implications of International Conventions on Climate Change and Desertification.	2. Discussion with forest managers about the policies and procedures of the responsible forestry ministry <ul style="list-style-type: none"> <li>• Policies and procedures of Forestry Commission</li> <li>• Policies and procedures of the responsible Environment ministry</li> </ul>		Identify and note any other relevant international agreements and their requirements	

1.4 Conflicts between laws, regulations and the FSC Principles and Criteria shall be evaluated for the purposes of certification, on a case by case basis, by the certifiers and the involved or affected parties.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
1.4.1 Forest managers shall identify conflicts between laws, regulations and the FSC P&C.	Documented conflicts by the Forest managers			



1.4.2 Forest managers shall resolve all identified conflict between laws, regulations and the FSC P&C with appropriate regulatory bodies and other parties.	Forest managers' mechanism for resolving conflicts with relevant regulatory bodies	Discussions with relevant regulatory bodies  Discussion with the National Working Group on Forest Certification		

1.5 Forest management areas should be protected from illegal harvesting, settlement and other unauthorized activities.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
1.5.1 Any admitted farms and alienated land shall specify terms and conditions of admittance or ownership.	<ol style="list-style-type: none"> <li>1. TUC/Forest document and annexes</li> <li>2. Maps identifying location of admitted farms and alienated land</li> <li>3. Appropriate documentation specifies terms and conditions, rights and obligations of occupation</li> </ol>	Discussions with owners of admitted farms	<p>For TUCs principally the responsibility of the FC but TUC holder may identify where breaches have occurred.</p> <p>The FC is the enforcing body</p>	
1.5.2 Terms and conditions of occupation shall be adhered to.	<ol style="list-style-type: none"> <li>1. Details of rights, responsibilities and restrictions detailed in TUC/Concession and SRAs</li> <li>2. For TUC's, the FC aware of all such areas and the manager enforces rules and regulations</li> <li>3. No evidence of disputes</li> </ol>	Discussions with RFM and DFM		
1.5.3 The DFA/FMU shall be clearly	<ol style="list-style-type: none"> <li>1. Fixed markers on the ground</li> </ol>	<p>Field visits</p> <p>Discussions with the fringe</p>		

<p>identified, demarcated, described and protected against unauthorised human activities.</p>	<p>2. Gazette notices of revisions and changes to boundaries 3 Evidence of Forest Managers' mechanism for protection against unauthorised activities</p>	<p>communities Discussions with the RFM/DFM</p>		
<p>1.5.4 The area and structure of the DFA/FMU shall be maintained.</p>	<p>1. Area of DFA/FMU is not reduced. 2. Proportion of area covered by forest remains constant</p>	<p>Remote sensing imagery or aerial photographs</p>	<p>Maps of forest reserves will be readily available. Details of off-reserve forest areas will be more difficult to find</p>	
<p>1.5.5 Managers shall take measures to prevent illegal harvesting, settlement and other unauthorized activities within the management area. Depending on the size of the forest area and on the risk of illegal activity occurring, such measures may include:</p> <ul style="list-style-type: none"> <li>- Forest roads have gates and/or have controlled access to areas of high risk;</li> <li>- Forest roads are physically closed off after harvesting;</li> <li>- Forest roads are patrolled to detect and prevent illegal access to the forest;</li> <li>- Personnel and resources have been assigned to detect and control illegal activities promptly.</li> </ul>	<p>1. Fixed markers on the ground 2. Gazette notices of revisions and changes to boundaries 3. Evidence of Forest Managers' mechanism for protection against unauthorised activities</p>	<p>Field visits Discussions with the fringe communities Discussions with the RFM/DFM</p>		
<p>1.5.6 The forest area shall be monitored for evidence of illegal or unauthorized activities.</p>	<p>1. Fixed markers on the ground 2. Gazette notices of revisions and changes to boundaries 3 Evidence of Forest Managers' mechanism for</p>	<p>Field visits Discussions with the fringe communities Discussions with the RFM/DFM</p>		

	protection against unauthorised activities			
<p>1.5.7 Appropriate measures shall be taken when illegal activities are detected. Depending on the nature of the activity such measures may include:</p> <ul style="list-style-type: none"> <li>- Reporting the activity to an appropriate authority;</li> <li>- Disciplinary action or fines in the case that staff were involved;</li> <li>- Working with the appropriate authorities, and always within the law, to control the unauthorized activity;</li> <li>- Working with local communities and/or authorities to resolve underlying grievances leading to illegal or unauthorized activity;</li> <li>- Pursuing legal action (e.g. prosecution) if necessary.</li> </ul>	<p>1. Evidence of Forest Managers' mechanism for protection against unauthorised activities</p>	<p>Field visits Discussions with the fringe communities</p> <p>Discussions with the RFM/DFM</p>		
<p>1.5.8</p> <p><b>For Large Enterprises only:</b></p> <ul style="list-style-type: none"> <li>- Managers shall have documented policies and procedures to protect the forest from illegal harvesting, settlement and other unauthorized activity.</li> </ul>	<p>1. Fixed markers on the ground</p> <p>2. Gazette notices of revisions and changes to boundaries</p> <p>3 Evidence of Forest Managers' mechanism for protection against unauthorised activities</p>	<p>Field visits Discussions with the fringe communities</p> <p>Discussions with the RFM/DFM</p>		

1.5.9 The enterprise shall maintain a record of all detected instances of illegal harvesting and other unauthorized activities within its management area, and of any subsequent actions taken to control the illegal activity.	<ol style="list-style-type: none"> <li>1. Fixed markers on the ground</li> <li>2. Gazette notices of revisions and changes to boundaries</li> <li>3 Evidence of Forest Managers' mechanism for protection against unauthorised activities</li> </ol>	Records of illegal harvesting from DFM.		
1.5.10 Forest managers shall have developed agreements in discussion with local communities for their help in identifying and/or preventing illegal or unauthorized activities.	1. Documented agreement with communities.	Discussions with the fringe communities		
<p>1.5.11 Managers shall take measures to prevent illegal harvesting, settlement and other unauthorized activities within the management area. Depending on the size of the forest area and on the risk of illegal activity occurring, such measures may include:</p> <ul style="list-style-type: none"> <li>- Forest roads have gates and/or have controlled access to areas of high risk;</li> <li>- Forest roads are physically closed off after harvesting;</li> <li>- Forest roads are patrolled to detect and prevent illegal access to the</li> </ul>	1. Evidence of Forest Managers' mechanism for protection against unauthorised activities	<p>Field visits Discussions with the fringe communities</p> <p>Discussions with the RFM/DFM</p>		

<p>forest; - Personnel and resources have been assigned to detect and control illegal activities promptly.</p>				
<p>1.5.12 The forest area shall be monitored for evidence of illegal or unauthorized activities.</p>	<ol style="list-style-type: none"> <li>1. Fixed markers on the ground</li> <li>2. Gazette notices of revisions and changes to boundaries</li> </ol>	<p>Records of illegal harvesting from DFM.</p>		
<p>1.5.13 Appropriate measures shall be taken when illegal activities are detected. Depending on the nature of the activity such measures may include:</p> <ul style="list-style-type: none"> <li>- Reporting the activity to an appropriate authority;</li> <li>- Disciplinary action or fines in the case that staff were involved;</li> <li>- Working with the appropriate authorities, and always within the law, to control the unauthorized activity;</li> <li>- Working with local communities and/or authorities to resolve underlying grievances leading to illegal or unauthorized activity;</li> <li>- Pursuing legal action (e.g.</li> </ul>	<ol style="list-style-type: none"> <li>1. Report of offense to DFM.</li> </ol>	<p>Discussion with DFM and FFC</p>		

prosecution) if necessary.  •				
<b>For Large Enterprises only:</b> 1.5.14 Managers shall have documented policies and procedures to protect the forest from illegal harvesting, settlement and other unauthorized activity.	Report of illegalities detected in the forest	Discussion with DFM and FFC		
1.5.15 The enterprise shall maintain a record of all detected instances of illegal harvesting and other unauthorized activities within its management area, and of any subsequent actions taken to control the illegal activity.	Report of illegalities detected in the forest	Discussion with DFM and FFC		
1.5.16 Forest managers shall have developed agreements in discussion with local communities for their help in identifying and/or preventing illegal or unauthorized activities.	Documentation of agreements with communities.	Discussion with DFM and FFC		

1.6 Forest managers shall demonstrate a long-term commitment to adhere to the FSC Principles and Criteria.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
1.6.1 Forest managers shall demonstrate long-term commitment to the principles of responsible forest management.	1. TUC area management plan	Discussions with FC Discussions with TUC holder/Forest manager Field visit Discussion with local communities and the District Assembly		
1.6.2 Forest managers policy objectives shall coincide with international definitions of sound forest management and good practice	1. TUC area management plan	Discussions with FC Discussions with TUC holder/Forest manager Field visit		

		Discussion with local communities and the District Assembly		
1.6.3 Forest Managers shall display understanding of and commitment to the concept and practices of sustainability and the precautionary principle	1. TUC area management plan	Discussions with FC Discussions with TUC holder/Forest manager Field visit Discussion with local communities and the District Assembly		
1.6.4 Forest Managers shall strive to comply with management requirements in other areas under their responsibility	1. TUC area management plan	Discussions with FC Discussions with TUC holder/Forest manager Field visit Discussion with local communities and the District Assembly		
1.6.5 Forest Manager shall demonstrate commitment at complying with the requirements of this certification standard.	1. TUC area management plan	Discussions with FC Discussions with TUC holder/Forest manager Field visit Discussion with local communities and the District Assembly		

**PRINCIPLE #2: TENURE AND USE RIGHTS AND RESPONSIBILITIES**

Long-term tenure and use rights to the land and forest resources shall be clearly defined, documented and legally established.

2.1 Clear evidence of long-term forest use rights to the land (e.g. land title, customary rights, or lease agreements) shall be demonstrated.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
2.1.1 Records detailing the ownership of	1. List of stools, skins and other owners comprising	Discussions with paramount chiefs	For TUCs legal records maintained by the Forest	

<p>the land comprising the DFA shall be maintained by the Forest Manager. E.g. Tenorial agreement showing</p> <ul style="list-style-type: none"> <li>- Period of validity</li> <li>- Name of users</li> </ul>	<p>the reserves and DFA</p> <ol style="list-style-type: none"> <li>2. Names of District and Traditional Authorities</li> <li>3. Names of communities making up the land owning stool are listed</li> <li>4. Maps at 1:10,000 scale showing land ownership and/or tenancies</li> </ol>	<p>Lands Commission</p> <p>Administrator of Stool Lands</p>	<p>Service and by Paramount chiefs. TUC holders may also retain copies but this is primarily the responsibility of the FC staff/ Forest manager.</p>	
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2.2 Local communities with legal or customary tenure or use rights shall maintain control, to the extent necessary to protect their rights or resources, over forest operations unless they delegate control with free and informed consent to other agencies.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
<p>2.2.1 The needs of local communities and the traditional uses, rights and customs of the local communities in the area shall be adequately documented</p>	<ol style="list-style-type: none"> <li>1. Socio-economic annex of the TUC or Forest manager's social policy</li> <li>2. FRMP</li> <li>3. SRA</li> <li>4. Maps of areas of local importance, requiring specific interventions or conditions or areas to be protected</li> <li>5. Forest managers and contractors have access to this information and make use of it in the planning of their activities</li> </ol>	<p>Discussions with TUC holder/Forest manger</p> <p>Documentation held by TUC holder/Forest manager</p>	<p>Refer to:</p> <ul style="list-style-type: none"> <li>• Forest Reserve Management Plans and</li> <li>• District Forest Development Plans</li> </ul>	
<p>2.2.2 Responsibilities and rights of the owners, managers and other stakeholders shall be clearly established and made clear to all stakeholders</p>	<ol style="list-style-type: none"> <li>1. Forest /Timber Utilisation Contracts and TUC operational plans contain details of rights and responsibilities</li> <li>2. Social Responsibility Agreements contain</li> </ol>	<p>SRA</p> <p>Discussions with local communities</p> <p>Discussions with DFM</p>	<p>See TUC, SRAs and Manual of Procedures for details</p>	



	<p>details of rights and responsibilities.</p> <p>3. Local communities possess copies of SRA</p>			
<p>2.2.3 Domestic use rights of members of local communities to enter the DFA and harvest NTFPs for subsistence shall be assured.</p>	<p>1. Access to the forest is not impaired</p> <p>2. Manual of Procedures is adhered to</p>	<p>Discussions with local communities</p>	<p>See MoP Section C and F</p>	
<p>2.2.4 Local communities' traditional activities within the DFA shall be respected provided that such activities do not diminish the long term capacity of the DFA to provide products and services</p>	<p>1. SRA</p> <p>2. TOS</p> <p>3. Socio-economic annex to TUC</p> <p>Maps at an appropriate scale</p>	<p>Discussions with local communities</p> <p>Discussions with local land owners</p>	<p>This indicator covers non-extractive activities or uses. For extraction of NTFP see 2.2.</p> <p>Other activities may require the establishment of baseline data</p>	
<p>2.2.5 Control mechanisms for domestic use rights to the DFA/FMU shall be supported by landowners and Local communities.</p>	<p>1. SRAs specify the control measures</p> <p>2. Local communities and landowners are aware of control measures and what they are supposed to accomplish</p> <p>3. No evidence of consistent breaches of SRAs or other agreements</p> <p>4. No outstanding long-running disputes or court cases</p>	<p>Discussions with forest manager</p> <p>Discussions with local landowners</p>	<p>Local communities should be aware of Forest Manager's/contractors responsibilities and practices through SRAs</p>	

2.3 Appropriate mechanisms shall be employed to resolve disputes over tenure claims and use rights. The circumstances and status of any outstanding disputes will be explicitly considered in the certification evaluation. Disputes of substantial magnitude involving a significant number of interests will normally disqualify an operation from being certified.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
2.3.1	1. A formal and documented	Discussions with forest		

<p>Processes shall exist within the management system to identify and address suggestions and complaints from stakeholders</p>	<p>process for receiving and dealing with complaints and suggestions exists</p> <ol style="list-style-type: none"> <li>2. All stakeholders are aware of the process and have access to it.</li> <li>3. Forest manager maintains a community liaison officer</li> <li>4. Where local processes exist these are documented</li> </ol>	<p>managers</p> <p>Discussions with land owners</p> <p>Discussions with tenants</p> <p>Discussions with local communities</p>		
<p>2.3.2 Systems and procedures shall be formulated to resolve grievances and ensure compensation in the case of loss or damage arising from management activities within the DFA that affect customary or traditional rights, property, resources or livelihoods of local people</p>	<ol style="list-style-type: none"> <li>1. Documented procedures exist, both informal and formal and responsible personnel are identified</li> <li>2. Documented procedures exist that involve communities and the forest manager</li> </ol>	<p>Discussions with Forest managers</p> <p>Discussions with local communities</p>		

**PRINCIPLE #3: INDIGENOUS PEOPLES' RIGHTS**

The legal and customary rights of indigenous peoples to own, use and manage their lands, territories, and resources shall be recognized and respected.

**NOTE: Ghana has no "indigenous peoples" within its territory within the working definition adopted by the UN Working Group on Indigenous Peoples. Rights of (members of) local communities are provided for under Principle 2. Therefore, no indicators are proposed in relation to Principle 3. It must be mentioned however, that there exist small minority groups especially in Northern Ghana such as the Konkomba, Grusi, Chokosi, Nchumburu, Gurma etc whose rights as local communities are covered under Principle 2 .**

**PRINCIPLE #4: COMMUNITY RELATIONS AND WORKER'S RIGHTS**

Forest management operations shall maintain or enhance the long-term social and economic well-being of forest workers and local communities.

4.1 The communities within, or adjacent to, the forest management area should be given opportunities for employment, training, and other services.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
4.1.1 All efforts shall be made to employ workers from local communities before workers are sought from further afield.	<ol style="list-style-type: none"> <li>1. Human Resources/Recruitment policy/strategy</li> <li>2. Evidence of employment of local personnel</li> <li>3. Advertisements in appropriate local media</li> </ol>	Discussions with forest managers Discussions with local communities Discussion with unions	This principally applies to the licence holder who operates only within a specified DFAs	
4.1.2 Training shall be provided for workers from local communities.	<ol style="list-style-type: none"> <li>1. Human Resources/Recruitment policy/strategy</li> <li>2. Evidence of employment of local personnel</li> <li>3. Advertisements in appropriate local media</li> </ol>	Discussions with forest managers Discussions with local communities Discussion with unions	This principally applies to the licence holder who operates only within a specified DFAs	

4.2 Forest management should meet or exceed all applicable laws and/or regulations covering health and safety of employees and their families.

FSC Reference Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
4.2.1 Health and safety measures shall comply with national minimum requirements.	<ol style="list-style-type: none"> <li>1. Records of inspections by national or regional H &amp; S inspectors</li> <li>2. Records of non-compliance/No evidence of non compliance as appropriate</li> <li>3. Health and safety policy</li> </ol>	Discussions with regional H & S inspectors  Discussions with forest managers Discussions with contractors	Auditors should identify and be familiar with all relevant health and safety guidelines and regulations	

	<p>of forest manager</p> <ol style="list-style-type: none"> <li>4. Health and safety policy of contractors</li> <li>5. Managers are familiar with relevant health and safety guidelines and regulations</li> </ol>			
<p>4.2.2 Managers shall assess risks to workers of particular tasks and equipment and take all measures to reduce or eliminate such risks.</p>	<ol style="list-style-type: none"> <li>1. Written risk assessments for key tasks</li> <li>2. Records kept by forest managers and actions taken in response to accidents and/or health and safety issues raised by national or regional H &amp; S inspections</li> </ol>	<p>Discussions with managers</p> <p>Discussions with regional H &amp; S inspectors</p>		
<p>4.2.3 Workers and contractors shall know the health and safety guidelines that are relevant to them.</p>	<ol style="list-style-type: none"> <li>1. Accessible copies of guidelines and regulations</li> <li>2. Posted notices and/or circulars</li> <li>3. Job instructions</li> <li>4. Minutes of health and safety meetings</li> </ol>	<p>Discussions with workers</p>	<p>Identify all relevant health and safety guidelines and regulations</p>	
<p>4.2.4 All workers including Contractors shall receive training in safe working practices and should be provided with safety equipment and clothing appropriate to their workplace situation.</p>	<ol style="list-style-type: none"> <li>1. Up to date list of staff trained in first aid, health or safety</li> <li>2. Register of safety equipment by job description</li> <li>3. Safety equipment available and in good condition</li> <li>4. Training procedure documented</li> <li>5. Training records kept</li> </ol>	<p>Discussions with forest managers</p> <p>Discussions with employees of forest management entity</p>		

	6. Employees aware of safety procedure			
4.2.5 Managers/Contractors shall ensure that workers use safety gears and equipment that are provided.	<ol style="list-style-type: none"> <li>1. Manager's job descriptions</li> <li>2. Managers enforcement measures / procedure.</li> <li>3. Workers use protective gears during normal working day</li> <li>3. Terms of employment</li> </ol>	<p>Discussions with forest manager</p> <p>Discussions with employees</p> <p>Discussions with local Trade Union</p>		
4.2.6 Managers shall record all work related accidents and deaths of employees and their causes, record actions taken to prevent similar accidents in future, and implement such preventative actions.	<ol style="list-style-type: none"> <li>1. Accident records</li> <li>2. Evidence that preventative actions have been implemented</li> </ol>	<p>Discussions with forest managers</p> <p>Discussion with staff of forest management entity.</p>		
4.2.7 Workers shall have access to appropriate health facilities.	<ol style="list-style-type: none"> <li>1. First aid kits and trained first aid administrators available at all operational sites</li> <li>2. All first aid kits inspected for completeness on a regular basis and re-inspection dates logged</li> <li>3. Clinic maintained by forest management entity</li> <li>4. Clinic properly equipped and staffed by adequately trained staff <b>and/or</b></li> <li>5. Local health facilities are adequate and appropriate for the type of work being conducted</li> <li>6. Freedom of staff (and where appropriate families) to use local</li> </ol>	<p>Discussions with forest manager</p> <p>Discussions with employees</p> <p>Discussions with Local Trade Unions</p> <p>Discussions with the District National Health Insurance Scheme (NHIS) office</p> <p>Medical conditions as agreed in the Collative Bargaining Agreements (CBA)</p>		

	facilities 7. National Health Insurance registration status of workers/contractors			
4.2.8 There shall be assured compensation benefits in case of accidents.	<ol style="list-style-type: none"> <li>1. Appropriate process and compensation protocol documented</li> <li>2. Records of payments kept</li> <li>3. Forest management entity is adequately insured for compensation claims</li> <li>4. No complaints of non-payment outstanding</li> </ol>	<p>Discussions with forest managers</p> <p>Discussions with employees</p> <p>Discussions with Local Trade Union</p>	Labour Act 651 of 2003	

4.3 The rights of workers to organize and voluntarily negotiate with their employers shall be guaranteed as outlined in Conventions 87 and 98 of the International Labour Organisation (ILO).

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
4.3.1 Employees of the forest management entity and contractors shall be permitted to organize and voluntarily negotiate with their employers as guaranteed in the Constitution and labour laws of Ghana.	<ol style="list-style-type: none"> <li>1. Copies of Constitution and Labour Laws are available</li> <li>2. Written conditions of employment</li> <li>3. Contracts</li> <li>4. No evidence of non-compliance</li> </ol>	<p>Discussions with managers</p> <p>Discussions with employees</p>	Ghana Labour Act 651 of 2003	
4.3.2 The employees of the forest management organisation, and contractors shall receive benefits commensurate with their responsibilities.	<ol style="list-style-type: none"> <li>1. Contracts and terms of employment</li> <li>2. Minutes of union meetings</li> <li>3. Wages not below the National Minimum Wage</li> <li>4. Forest managers pay their required contribution</li> </ol>	<p>Discussions with staff and/or Local Trade Union representatives</p> <p>Discussions with forest managers</p> <p>Discussions with FC staff</p>	Collective Bargaining Agreement	

	<p>to workers' Social Security and National Insurance Trust (SSNIT) contribution</p> <p>5. Staff receive a wage not markedly below wages for equivalent work elsewhere within the industry in Ghana</p> <p>6. Working conditions and contractual terms not markedly below wages for equivalent work elsewhere within the industry in Ghana</p> <p>7. Casual workers are employed on a pro-rata basis equivalent to full benefits for full time staff.</p>			
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4.4 Management planning and operations shall incorporate the results of evaluations of social impact. Consultations shall be maintained with people and groups (both men and women) directly affected by management operations.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
<p>4.4.1 Forest management shall include systems to monitor the social impacts of harvesting and other operations.</p>	<ol style="list-style-type: none"> <li>1. Social Responsibility Agreements</li> <li>2. Discussions with communities and District Assemblies</li> <li>3. Formal complaints procedures</li> <li>4. Formal records of meetings between stakeholders.</li> <li>5. Minutes of meetings of stakeholder focus groups.</li> <li>6. Health records from hospitals and clinics</li> </ol>	<p>Discussions with District Assemblies</p> <p>Discussions with forest managers</p>		

<p>4.4.2 For TUCs, Social Responsibility Agreements with appropriate and relevant conditions for the DFA/FMU shall be established and adhered to, in spirit and in deed by all parties</p>	<ol style="list-style-type: none"> <li>1. One or more SRAs exist</li> <li>2. SRAs drawn up through an appropriate process</li> <li>3. Terms and conditions of the SRAs do not favour one stakeholder group over another</li> <li>4. Control mechanisms for domestic use rights are broadly supported by stakeholders</li> </ol>	<p>Discussions with local stakeholders, owners, farmers etc</p>	<p>Relevant background documents outline some of the problems inherent with SRAs for instance 'Status Report on Collaborative Management Practices in the High Forest Zone' and 'Developments and Setbacks in Forest Conservation', by Kofi Smith</p>	
<p>4.4.3 For TUCs, Timber Operational Specifications (TOS) shall lay down clear and unambiguous conditions and technical specifications.</p>	<ol style="list-style-type: none"> <li>1. TOS exists</li> <li>2. TOS contain appropriate operating specifications and limits relating to access and use of forest resources</li> </ol>	<p>Discussions with TUC holder  Discussion with the DFM</p>	<p>See MoP Annex Section B for details of what TOS should contain</p>	
<p>4.4.4 TOS and SRAs shall adequately cover operations in the DFA/FMU</p>	<ol style="list-style-type: none"> <li>1. TOS</li> <li>2. SRA</li> <li>3. Additional requirements esp. concerning resource development</li> </ol>	<p>Detailed examination of terms and conditions of SRA and TOS  Field visits to ensure terms and conditions are being adhered to</p>	<p>Auditors should study the specific recommendations closely:</p> <ul style="list-style-type: none"> <li>• to identify if there are any areas of management or control which are inadequately addressed</li> <li>• to ensure that the conditions laid down as part of the TOS and SRA are being adhered to</li> <li>• to ensure that both parties (contractors and local communities/farmers etc) are equally well-informed</li> </ul>	
<p>4.4.5 Within a DFA/FMU local communities, both men and women shall be consulted</p>	<ol style="list-style-type: none"> <li>1. Minutes and notes of meetings with stakeholder and planning meetings to</li> </ol>	<p>Discussions with local communities</p>	<p>See MoP Section C for details of appropriate processes</p>	



<p>during the development of the Forest Reserve Management Plans, the Timber Utilisation Contract, and in the identification of and planning for the maintenance of High Conservation Value Forest areas (see Criterion 9.1 and 9.2).</p>	<p>prepare plans</p> <ol style="list-style-type: none"> <li>2. Local community involvement detailed in the respective FMU/FRMP, TUCMP DFDP and SRA</li> <li>3. Form CAI/1 and attachments</li> </ol>		<p>Forest Service personnel are responsible for ensuring that communities are involved and consulted TUC comes complete with 5 schedules CAI/1 details all consultations undertaken as part of developing SRAs</p>	
<p>4.4.6 Forest managers shall establish awareness programmes to ensure that stakeholders are aware of the key elements of policy and management of the forest resource, including the management of High Conservation Value Forest areas.</p>	<ol style="list-style-type: none"> <li>1. Detailed list of stakeholders is established and maintained</li> <li>2. Stakeholder awareness programme exists and is widely available</li> <li>3. All stakeholders are aware of: <ul style="list-style-type: none"> <li>• the forest management policy</li> <li>• laws, regulations and other legal instruments</li> <li>• their roles in relation to the management plan</li> <li>• contingency plans to be undertaken in the event of emergencies, accidents or unforeseen conditions</li> <li>• procedures for improving response to stakeholders and performance</li> </ul> </li> </ol>	<p>Discussions with DFO and other members of FC</p> <p>Discussions with local communities</p>		
<p>4.4.7 The forest management system shall include processes for ensuring ongoing consultation with stakeholders (both men and women) during the</p>	<ol style="list-style-type: none"> <li>1. Minutes or findings/conclusions/recommendations of meetings held as part of preparation of Forest</li> </ol>	<p>Discussions with local communities</p> <p>Discussions with DFM</p>		

<p>implementation of the management plan.</p>	<p>Reserve Management Plans</p> <p>2. Recommendations on Social Responsibility Agreements provided by the FC and deriving from the consultation process</p> <p>3. Existing SRA agreements (between managers and stakeholders)</p>	<p>Discussions with forest managers</p>		
<p>4.4.8 Forest management activities shall minimise Health and safety risks to local communities as a result of their forest activities.</p>	<p>1. Potential hazards or threats to the resources and health of local communities are documented for principal forest operations:</p> <ul style="list-style-type: none"> <li>• roads - construction and use</li> <li>• vehicle use</li> <li>• field operations</li> <li>• waste and pollution</li> </ul> <p>2 Forest managers responsible for field operations have established documented mitigative measures and contingency plans for spillage, leakage and pollution of the local environment</p> <p>3. Forest managers implement appropriate mitigative and preventative measures</p> <p>4. Where necessary forest managers employ</p>	<p>Discussions with forest managers</p> <p>Discussions with local Health and Safety officers</p> <p>Discussions with local communities</p> <p>Discussions with FC staff</p>		

	appropriate remedial measures to offset or counter negative impacts on local communities			
4.4.9 The enterprise shall demonstrate how it has incorporated the results of its evaluation of social impacts into its management planning and operations.	2.			

4.5 Appropriate mechanisms shall be employed for resolving grievances and for providing fair compensation in the case of loss or damage affecting the legal or customary rights, property, resources, or livelihoods of local peoples. Measures shall be taken to avoid such loss or damage.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
4.5.1 Forest Managers shall make all efforts to avoid losses or damages affecting local peoples, and in resolving grievances related to legal rights, damage compensation.  See 4.1.1. above.	1. Existence of mechanism for avoiding loss or damage and resolving grievances.	Discussions with forest managers  Discussions with local communities		
4.5.2 Where damage to the forest or local facilities occurs as a result of forest management activities, local communities shall be compensated in a fair and prompt manner	2. Clear rules exist and are documented for compensation of the aggrieved party(ies) 3. Clear rules exist for compensating landowners 4. Organisation responsible for meeting compensation claims is clearly identified	Discussions with FC  Discussions with forest managers  Discussions with local communities	Be aware of the potential for problems to occur 'downstream' from where the activities took place	
4.5.3 There shall be a documented procedure for the resolution of disputes or grievances raised in relation to the activities of the forest enterprise.	5. Clear rules exist and are documented for compensation of the aggrieved party(ies) 6. Clear rules exist for	Discussions with FC  Discussions with forest managers	Be aware of the potential for problems to occur 'downstream' from where	

	compensating landowners 7. Organisation responsible for meeting compensation claims is clearly identified	Discussions with local communities	the activities took place	
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**PRINCIPLE # 5: BENEFITS FROM THE FOREST**

Forest management operations shall encourage the efficient use of the forest's multiple products and services to ensure economic viability and a wide range of environmental and social benefits.

5.1 Forest management should strive toward economic viability, while taking into account the full environmental, social, and operational costs of production, and ensuring the investments necessary to maintain the ecological productivity of the forest.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
5.1.1 Forest managers budgets shall include provision for environmental and social as well as operational costs necessary to maintain certifiable status	1. EIA for the forest/TUC which includes an assessment of the social as well as environmental costs of critical activities 2. Annual Budget records (present, past and projected)	Discussions with forest managers	For new TUC an EIA is mandatory under LI 1652 1999. Concessions issued prior to the TUC should be covered by an Environmental Management Plan - EPA 490/94	
5.1.2 Benefits and costs shall be consistent with predictions used to justify the initial investment	1. Forest Managers Budgets 2. Forestry, timber trade and export statistics 3. Annual reports, published accounts of forest management entity 4 Harvesting schedule and		Auditors should be aware of techniques to undervalue the forest crop or reduce costs by such mechanisms as modifying timber dimensions and published volumes, transfer pricing etc	

	other plans			
5.1.3 Mechanisms shall exist for sustained and adequate funding of the management of the forests	<ol style="list-style-type: none"> <li>1. Accounting system designed to ensure costs and benefits for the DFA/FMU</li> <li>2. Short, medium and long term Investment strategies exist. Eg Equipment investment plan</li> </ol>	Discussion with forest management entity		

5.2 Forest management and marketing operations should encourage the optimal use and local processing of the forest's diversity of products.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
5.2.1 Forest managers shall ensure the best possible and optimum use of individual timber species	<ol style="list-style-type: none"> <li>1. Log grading on LMCC</li> <li>2. Differences in TIF and LIF</li> <li>3. Forest managers timber felling practices</li> </ol>	TIDD offices FSD district and regional offices Forest managers logging documents and records		
5.2.2 Forest managers shall ensure the commercial utilisation of Lesser Used Species (LUS)	<ol style="list-style-type: none"> <li>1. Comparison of enumeration data, with the yield .</li> <li>2. Comparison of yield with actual felling</li> </ol>	RMSC FSD offices Forest managers yield and felling records		
5.2.3 Forest Managers shall ensure local processing of Lesser Used Species (LUS)	<ol style="list-style-type: none"> <li>1. Existence of local processing of LUS</li> </ol>	Discussions with forest managers		
5.2.4 Collection of non-timber forest products shall be assured provided that harvesting does not exceed levels that are sustainable in the long term.	<ol style="list-style-type: none"> <li>1. Collection and harvesting of NTFPs specified in FRMP, TUC, TUC operational plans and Social Responsibility Agreements.</li> <li>2. Baseline data on NTFPs, status and harvesting levels</li> </ol>	Discussions with local communities  Discussions with forest managers  Discussions with DFM and FC staff	See Principle 7.7 for further details of sustainability  Auditors shall differentiate between collection for domestic purposes and 'commercial' harvesting which will require greater	

	<p>exist</p> <p>3. Levels of harvesting that area is sustainable are clearly specified</p> <p>4. In the absence of hard data on NTFPs the management system adopts a conservative and precautionary approach to harvesting</p>		<p>rigour and attention to detail and shall appear under Principle 7 - commercial use of NTFPs</p>	
<p>5.2.5 Non-timber forest products (NTFPs) shall be considered during forest use and processing. Within forest reserves appropriate areas are set aside specifically for collection of NTFPs by local communities. See also Indicators associated with Criterion 5.4</p>	<p>1. Established NTFP production areas demarcated on maps and on the ground</p> <p>2. No logging or conflicting land use employed in such area.</p> <p>3. Local communities are aware of these areas and their respective rights and responsibilities</p>	<p>See MoP Section A</p>		

5.3 Forest management should minimize waste associated with harvesting and on-site processing operations and avoid damage to other forest resources.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
<p>5.3.1 Harvesting shall take into account the need to minimise timber waste</p>	<p>1. Specific waste reducing methodologies and techniques. (RIL)</p> <p>2. Tree stumps demonstrate that stumps have been cut at the lowest level practicable.</p> <p>3. Absence of cut logs not extracted</p>	<p>Discussions with forest managers</p> <p>Field visits</p>		

<p>5.3.2 Waste and collateral damage resulting from harvesting shall be minimised</p>	<ol style="list-style-type: none"> <li>1. Collateral damage in field is monitored, recorded and made part of the yield calculation</li> <li>2. Use of objective system (eg microborer) to identify rot in trees prior to felling</li> </ol>	<p>Field visits</p>		
<p>5.3.3 Timber shall be extracted and processed promptly after felling</p>	<ol style="list-style-type: none"> <li>1. Evidence of wastage in forest</li> <li>2. Internal tracking system to monitor levels of log wastage in the forest and mill</li> </ol>	<p>Field visit</p>		

5.4 Forest management should strive to strengthen and diversify the local economy, avoiding dependence on a single forest product.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
<p>5.4.1 Land owners and other stakeholders shall benefit directly from the forest operations</p>	<ol style="list-style-type: none"> <li>1. Rights of beneficiaries to receive revenue clearly stated as a management objective within FRMP and relevant planning documents</li> <li>2. Terms and conditions for revenue sharing or disbursement clearly established and followed</li> <li>3. Land owners and other stakeholders paid promptly (quarterly)</li> <li>4. Annual Report</li> </ol>	<p>Discussions with land owners</p> <p>Discussions with District Assemblies</p> <p>Discussions with DFM</p>		
<p>5.4.2 Forest managers shall support local value added processing.</p>	<p>1 Existence of local processing of forest products eg wood carving , NTFP processing etc</p>	<p>Community visits</p> <p>Discussions with the people</p> <p>Discussions with forest managers</p>		

<p>5.4.3 For TUCs, forest managers shall meet their obligation to provide amenities to the communities within the fringes of the DFA, to a value of <u>not less</u> than 5% of the annual stumpage accruing from the operations under the TUC</p>	<ol style="list-style-type: none"> <li>1. Appropriately worded SRAs</li> <li>2. List of amenities provided and value</li> <li>3. Other amenities/services provided by forest management entity</li> </ol>	<p>Discussions with local communities</p> <p>Discussions with the DFM and the District Assemblies</p> <p>Discussions with forest managers</p>		
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5.5 Forest management operations shall recognize, maintain, and, where appropriate, enhance the value of forest services and resources such as watersheds and fisheries.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
<p>5.5.1 The full range of forest services and resources (including, for example, municipal watersheds, upstream and downstream commercial and recreational fisheries, landscape quality, and the forest's contribution to regional biodiversity, recreation and tourism) shall be identified in the forest management plan (or equivalent documentation) for the enterprise.</p>	<ol style="list-style-type: none"> <li>1. Zonation of the FMU</li> <li>2. FMU management plan</li> </ol>	<p>Discussions with the RFM and DFM,</p> <p>Discussions with forest managers</p>	<p>MoP section A</p>	
<p>5.5.2. The management plan (or equivalent documentation) shall specify appropriate measures to maintain and/or enhance the value of each identified forest service or resource.</p>	<ol style="list-style-type: none"> <li>1. Zonation of the FMU</li> <li>2. FMU management plan</li> </ol>	<p>Discussions with the RFM and DFM,</p> <p>Discussions with forest managers</p>	<p>MoP section A</p>	
<p>5.5.3 Forest managers shall protect the full</p>	<ol style="list-style-type: none"> <li>1. Zonation of the FMU</li> <li>2. FMU management plan</li> </ol>	<p>Discussions with the RFM and DFM,</p>	<p>MoP section A</p>	



range of forest services associated with the DFA where appropriate to include watersheds, biodiversity, recreation and tourism		Discussions with forest managers		
5.5.4 Forest managers shall protect riparian zones along all watercourses, streams, pools, springs and lakes/ponds, in accordance with Ghana's Logging Manual	<ol style="list-style-type: none"> <li>1. Compartment map</li> <li>2. Compartment logging plan</li> <li>3. Forest/TUC management plan</li> <li>4. Logging Manual</li> <li>4. 50m on each side of water courses as identified on a 1:50,000 topographic map and 25m for any other water course</li> </ol>	Field visits	See Ghana's logging Manual  MoP section D	

5.6 The rate of harvest of forest products shall not exceed levels which can be permanently sustained.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
5.6.1 Rates of forest product harvesting shall be established <u>prior to</u> permitting harvesting for each resource type within each compartment	<ol style="list-style-type: none"> <li>1. Data are available in sufficient detail to permit accurate estimates of current quantities of timber and of their replenishment rates</li> <li>2 PSP, inventory and stock survey methodology</li> </ol>	<ul style="list-style-type: none"> <li>• Inventory data</li> <li>• Stock survey records</li> <li>• Stock maps</li> <li>• Compartment harvesting records</li> </ul>		
5.6.2 Rates of forest product harvesting shall be based on current inventory, growth	<ol style="list-style-type: none"> <li>1. Data are available in sufficient detail to permit accurate estimates of</li> </ol>	<ul style="list-style-type: none"> <li>• Inventory data</li> <li>• Stock survey records</li> </ul>		

and yield data.	current quantities of timber and of their replenishment rates 2 PSP, inventory and stock survey methodology	<ul style="list-style-type: none"> <li>• Stock maps</li> <li>• Compartment harvesting records</li> </ul>		
5.6.3 Rates of forest product harvesting shall be demonstrated to be within the capacity of the DFA to sustain in the long term.	1. Data are available in sufficient detail to permit accurate estimates of current quantities of timber and of their replenishment rates 2 PSP, inventory and stock survey methodology	<ul style="list-style-type: none"> <li>• Inventory data</li> <li>• Stock survey records</li> <li>• Stock maps</li> <li>• Compartment harvesting records</li> </ul>		
5.6.4 Calculation of yield or yield regulation method shall be rational and scientifically based.	1. Detailed manuals for yield calculation exist and are readily available 2. Yield calculation method is regularly updated based on growth and dynamics of the FMU/DFA 3. Reliable data and information from research and monitoring is available and forms the basis of the periodic re-calculation of sustainable output	Discussions with: DFM RMSC Forest managers	See MoP section D	
5.6.5 The yield selection methods and limits on harvesting shall be clearly stated in one or more of the management documents available to forest manager	1. Minimum number and size of trees to be retained as seed bearers 2. Maximum number (or density) of trees to be harvested per hectare 3. Felling Permit from DFM	Discussions with: DFM, RMSC and forest managers  Inspection of Stock maps against yield and actual harvesting records.	See MoP section D	

	4. Statements of yield or allowable cut held by FSD and forest management entity coincide	Field visits		
5.6.6 Harvesting shall be conducted according to stipulated regulations and guidelines which ensure that the levels of harvesting do not exceed stipulated levels.	<ol style="list-style-type: none"> <li>1. The minimum exploitable diameter for each species to be harvested in the yield</li> <li>2. Stock survey field books, stock maps, yield summary and yield map</li> <li>3. Compartment closure reports</li> </ol>	<p>Discussions with:</p> <p>Forest management entity</p> <p>DFM RFM RMSC</p>	See MoP section D	
5.6.7 Forest managers shall respect controls on logging and harvesting practice to prevent over-exploitation	<ol style="list-style-type: none"> <li>1. Restriction of logging to approved production areas only</li> <li>2. Prevention of logging in protected or environmentally sensitive areas</li> <li>3. The numbers and species of trees in the yield</li> <li>4. Forest management entity exits a compartment after 2 years and do not re-enter until the next felling cycle</li> <li>5. Re-entering of a compartment before 40 years is consistent with provisions in Section D of MoP</li> <li>7. Formal permission from DFM to enter compartment for felling</li> </ol>	<p>Discussions with:</p> <p>Forest management entity</p> <p>DFM RFM RMSC</p>	Ghana Logging Manual 'Section D of MoP	

**PRINCIPLE #6: ENVIRONMENTAL IMPACT**

Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest.

6.1 Assessment of environmental impacts shall be completed -- appropriate to the scale, intensity of forest management and the uniqueness of the affected resources -- and adequately integrated into management systems. Assessments shall include landscape level considerations as well as the impacts of on-site processing facilities. Environmental impacts shall be assessed prior to commencement of site-disturbing operations.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
<p>6.1.1 The variety and distribution of biological communities and forest ecosystems that comprise the regional landscape and make up the DFA/FMU shall be identified and described.</p>	<p>1. Forest surveys</p> <p>2. Maps of forest types, important habitats and critical areas (incl. GSBA and coarse grained protection areas)</p> <p>3. Environmental impact assessment</p>	<p>DFM office and the forest management entity</p> <p>Forest management entity and responsible Environmental ministry and the FC.</p>	<p>National Forest Inventory of 1984-9 may provide baseline data about the FMU as well as the national status of the forest resource.</p> <p>The Multi-Resource Inventory (MRI) of 2002</p> <p>RMSC should possess GIS for each forest reserve within a TUC</p> <p>For new TUC an EIA is mandatory under LI 1652 (1999). Concessions issued prior to the TUC should be covered by an Environmental Management Plan - EPA 490/94</p>	
<p>6.1.2 <b>Applicable to SLIMF (1) DFAs only.</b> (Note. Above indicators do not apply except when</p>	<p>1 On the ground evidence relating to road building, logging, in-situ processing,</p>	<p>Discussions with forest managers.</p>		

<p>required by law or FC administrative directive)</p> <p>Forest managers shall be aware of and demonstrate knowledge of the possible negative impacts of their activities and take practical steps to avoid or reduce such them.</p>	<p>boundary activities, riparian management among others.</p> <p>2 Managers' knowledge of presence of any species and habitats of conservation importance and practical conservation efforts</p> <p>3 Evidence of any negative impacts from management activities on adjoining lands</p> <ul style="list-style-type: none"> <li>- Completing assessment of environmental impact</li> <li>- Integrating results of assessment into management system</li> <li>- Assessment of impact of on-site processing facilities before commencing site-disturbing operations.</li> </ul> <p>4.</p>	<p>Discussions with adjoining land owners/users</p> <p>Discussion with DFM</p>		
<p><b>6.1.3 For Large Enterprises only:</b></p> <p>The enterprise shall complete and document an assessment of the environmental impacts of its management activities at the level of the landscape in which it is situated.</p>	<p>1 On the ground evidence relating to road building, logging, in-situ processing, boundary activities, riparian management among others.</p> <p>2 Managers' knowledge of</p>	<p>Discussions with forest managers.</p> <p>Discussions with adjoining land owners/users</p> <p>Discussion with DFM</p>		

	<p>presence of any species and habitats of conservation importance and practical conservation efforts</p> <p>3 Evidence of any negative impacts from management activities on adjoining lands</p> <ul style="list-style-type: none"> <li>- Completing assessment of environmental impact</li> <li>- Integrating results of assessment into management system</li> <li>- Assessment of impact of on-site processing facilities before commencing site-disturbing operations.</li> </ul>			
<p>6.1.4 The enterprise shall complete and document an assessment of the environmental impacts of its forest management activities within the FMU under assessment.</p>	<p>1 On the ground evidence relating to road building, logging, in-situ processing, boundary activities, riparian management among others.</p> <p>2 Managers' knowledge of presence of any species and habitats of conservation importance and practical conservation efforts</p>	<p>Discussions with forest managers.</p> <p>Discussions with adjoining land owners/users</p> <p>Discussion with DFM</p>		

	<p>3 Evidence of any negative impacts from management activities on adjoining lands</p> <ul style="list-style-type: none"> <li>- Completing assessment of environmental impact</li> <li>- Integrating results of assessment into management system</li> <li>- Assessment of impact of on-site processing facilities before commencing site-disturbing operations.</li> </ul>			
<p>6.1.5 The enterprise shall complete and document an assessment of the environmental impacts of its forest management activities within the FMU under assessment.</p>	<p>1 On the ground evidence relating to road building, logging, in-situ processing, boundary activities, riparian management among others.</p> <p>2 Managers' knowledge of presence of any species and habitats of conservation importance and practical conservation efforts</p> <p>3 Evidence of any negative impacts from management activities on adjoining lands</p>	<p>Discussions with forest managers.</p> <p>Discussions with adjoining land owners/users</p> <p>Discussion with DFM</p>		

	<ul style="list-style-type: none"> <li>- Completing assessment of environmental impact</li> <li>- Integrating results of assessment into management system</li> <li>- Assessment of impact of on-site processing facilities before commencing site-disturbing operations.</li> </ul>			
<p>6.1.6 The enterprise shall complete and document an assessment of the environmental impacts of any processing facilities within the FMU under assessment.</p>	<p>1 On the ground evidence relating to road building, logging, in-situ processing, boundary activities, riparian management among others.</p> <p>2 Managers' knowledge of presence of any species and habitats of conservation importance and practical conservation efforts</p> <p>3 Evidence of any negative impacts from management activities on adjoining lands</p> <ul style="list-style-type: none"> <li>- Completing assessment of environmental impact</li> <li>- Integrating results</li> </ul>	<p>Discussions with forest managers.</p> <p>Discussions with adjoining land owners/users</p> <p>Discussion with DFM</p>		



	<p>of assessment into management system</p> <ul style="list-style-type: none"> <li>- Assessment of impact of on-site processing facilities before commencing site-disturbing operations.</li> </ul>			
<p>6.1.7 The assessments of environmental impact referred to in the three Indicators above shall include potential impacts of management infrastructure, logging camps, and workers' activities.</p>	<p>1 On the ground evidence relating to road building, logging, in-situ processing, boundary activities, riparian management among others.</p> <p>2 Managers' knowledge of presence of any species and habitats of conservation importance and practical conservation efforts</p> <p>3 Evidence of any negative impacts from management activities on adjoining lands</p> <ul style="list-style-type: none"> <li>- Completing assessment of environmental impact</li> <li>- Integrating results of assessment into management system</li> <li>- Assessment of impact of on-site</li> </ul>	<p>Discussions with forest managers.</p> <p>Discussions with adjoining land owners/users</p> <p>Discussion with DFM</p>		

	processing facilities before commencing site-disturbing operations.			
6.1.8 The assessments of environmental impact referred to in the first three Indicators above shall include potential impacts relating to the extraction of forest products (e.g. the choice of equipment, impact of the transport network, impact on rivers in the case of fluvial extraction, etc), both within and outside the FMU.	<p>1 On the ground evidence relating to road building, logging, in-situ processing, boundary activities, riparian management among others.</p> <p>2 Managers' knowledge of presence of any species and habitats of conservation importance and practical conservation efforts</p> <p>3 Evidence of any negative impacts from management activities on adjoining lands</p> <ul style="list-style-type: none"> <li>- Completing assessment of environmental impact</li> <li>- Integrating results of assessment into management system</li> <li>- Assessment of impact of on-site processing facilities before commencing site-disturbing operations.</li> </ul>	<p>Discussions with forest managers.</p> <p>Discussions with adjoining land owners/users</p> <p>Discussion with DFM</p>		

<p>6.1.9 The management plans and other relevant policies and procedures of the enterprise shall clearly identify the actions to be taken to mitigate or reduce the environmental impacts identified as a result of the assessments.</p>	<p>1 On the ground evidence relating to road building, logging, in-situ processing, boundary activities, riparian management among others.</p> <p>2 Managers' knowledge of presence of any species and habitats of conservation importance and practical conservation efforts</p> <p>3 Evidence of any negative impacts from management activities on adjoining lands</p> <ul style="list-style-type: none"> <li>- Completing assessment of environmental impact</li> <li>- Integrating results of assessment into management system</li> <li>- Assessment of impact of on-site processing facilities before commencing site-disturbing operations.</li> </ul>	<p>Discussions with forest managers.</p> <p>Discussions with adjoining land owners/users</p> <p>Discussion with DFM</p>		
<p>6.10 There shall be a procedure to review and evaluate potential environmental impacts and to record the specific actions taken to</p>	<p>1 On the ground evidence relating to road building, logging, in-situ processing, boundary activities, riparian</p>	<p>Discussions with forest managers.</p> <p>Discussions with adjoining</p>		

<p>mitigate the impacts identified, on a site-by-site basis, prior to the commencement of site-disturbing operations.</p> <p>-</p>	<p>management among others.</p> <p>2 Managers' knowledge of presence of any species and habitats of conservation importance and practical conservation efforts</p> <p>3 Evidence of any negative impacts from management activities on adjoining lands</p> <ul style="list-style-type: none"> <li>- Completing assessment of environmental impact</li> <li>- Integrating results of assessment into management system</li> <li>- Assessment of impact of on-site processing facilities before commencing site-disturbing operations.</li> </ul>	<p>land owners/users</p> <p>Discussion with DFM</p>		
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6.2 Safeguards shall exist which protect rare, threatened and endangered species and their habitats (e.g., nesting and feeding areas). Conservation zones and protection areas shall be established, appropriate to the scale and intensity of forest management and the uniqueness of the affected resources. Inappropriate hunting, fishing, trapping and collecting shall be controlled.

FSC Reference Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
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<p>6.2.1 Management plans shall contain clear and unambiguous objectives or goals for protection and conservation of flora and fauna within forest reserves.</p>	<ol style="list-style-type: none"> <li>1. Forest Reserve Management Plan</li> <li>2. TUC Management plan</li> <li>3. TOS</li> <li>4. District Forest Development Plan (DFDP)</li> </ol>	<p>Discussions with forest management entity</p> <p>Discussions with FC</p> <p>Discussions with responsible Environmental ministry.</p> <p>Discussions with District Assembly</p>	<p>Ghana source material submitted as part of Convention on Biological Diversity</p>	
<p>6.2.2 The DFA/FMU shall be covered by clearly defined and formulated strategies to ensure the conservation of existing flora and fauna, including the identification of conservation zones to protect rare, threatened and endangered species and their habitats (e.g., nesting and feeding areas)</p>	<ol style="list-style-type: none"> <li>1. Forest/TUC possesses comprehensive forest protection strategy</li> <li>2. Plans incorporate coarse and fined-grained protection measures</li> <li>3. Pre-stock survey report</li> </ol>	<p>Discussions with forest managers, staff and workforce</p> <p>Discussions with FSD, staff and workforce</p> <p>Discussions with District Assemblies</p> <p>Discussions with the RMSC</p>	<p>Procedures laid down in MoP Section A</p> <p>Appropriate planning documents in which objectives and strategies should be formulated are the FRMP and the DFDP.</p>	
<p>6.2.3 Management shall identify areas of semi-protection within the DFA/FMU</p>	<ol style="list-style-type: none"> <li>1. For forest reserves - maps showing: <ul style="list-style-type: none"> <li>• fire buffer zones</li> <li>• shelterbelts</li> <li>• areas of convalescing forest</li> </ul> </li> <li>2. Fire risk assessment of DFA conducted</li> </ol>	<p>Discussions with DFM</p> <p>Discussions with forest management entity</p> <p>Discussions with District Assemblies</p>	<p>Fine grained strategy measures detailed in Forest Protection in Ghana by Hawthorne and Abu-Juam</p> <p>Summary of procedures is found in Manual of Procedures Section A - Instruction Sheet A2.3 page 8</p>	
<p>6.2.4 Management shall adopt genetic heat index and star colour coding of individual species in the calculation of yield and the selection of trees to be felled</p>	<ol style="list-style-type: none"> <li>1. Tree maps derived from stock surveys</li> <li>2. Trees located and colour coded</li> <li>3. Selection procedure adopted as prescribed in MoP Section D</li> </ol>	<p>Discussions with DFM</p> <p>Discussions with forest management entity</p> <p>TUC Operational plan</p>	<p>Genetic heat index and the star system are detailed in Forest Protection in Ghana by Hawthorne and Abu-Juam</p> <p>Summary of procedures is</p>	

	4. Special permits for species on CITES appendixes (See annex 2)		found in Manual of Procedures Section A See also Manual of Procedures Section D Yield Allocation	
6.2.5 Management shall adopt and put in place appropriate limits or precautionary measures.	<ol style="list-style-type: none"> <li>1. Limit on maximum number of stems per hectare to be harvested is adhered to.</li> <li>2. Limits on minimum spacing of felled trees (density of felling)</li> <li>3. Other precautionary limits to prevent over-cutting</li> </ol>	<p>Discussions with DFM</p> <p>Discussions with forest management entity</p>	Existing systems are map-based and rely on accurate maps. Simple ground based rules and limits should be in place in the event that maps are inaccurate or not produced in time.	
6.2.6 Forest management shall demonstrate a commitment to adopt and adhere to protection measures and the spirit of the protection strategy	<ol style="list-style-type: none"> <li>1. Forest/TUC management plan, FMU management plan, compartment plans</li> <li>2. Policy documents</li> <li>3. Operational procedures/manuals and works instructions sheets</li> <li>4. Appropriate control of contractors and workforce exist</li> </ol>	<p>Discussions with forest management entity</p> <p>To include:</p> <ul style="list-style-type: none"> <li>• instruction sheets</li> <li>• posted notices</li> <li>• verbal instructions to staff</li> </ul>	<p>Ghanaian source material submitted as part of Convention on Biological Diversity</p> <p>Requirements developed for Forest Protection Strategy for forests (coarse and fine grained) provide the <u>minimum</u> acceptable standards</p>	
6.2.7 Inappropriate hunting, fishing, trapping and collecting shall be controlled.	<ol style="list-style-type: none"> <li>1. Existence of measures to control such activities.</li> <li>2. No evidence of uncontrolled activity taking place</li> </ol>		Consolidated Wildlife laws of Ghana	

- 6.3 Ecological functions and values shall be maintained intact, enhanced, or restored, including:
- a) Forest regeneration and succession.
  - b) Genetic, species, and ecosystem diversity.
  - c) Natural cycles that affect the productivity of the forest ecosystem.

Indicator	FMU level verifier	Other sources of	Guidance	Scoring and Notes
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<p>6.3.1 Silvicultural systems shall be adopted to ensure that a full complement of tree species regenerate successfully in the DFA over the duration of the rotation/felling cycle</p>	<ol style="list-style-type: none"> <li>1. Species composition, stand densities, quantities of forest products available post-harvesting are documented</li> <li>2. Status of forest at compartment closure is consistent with requirements for regeneration of the existing forest structure</li> <li>3. Enrichment planting is appropriate (native species etc) and is carried out in such a way as to genuinely contribute to the regeneration of the forest crop</li> <li>4. A system exists for the long term monitoring of the regeneration and growth of the forest (eg permanent sample plots, periodic re-assessments) within the DFA</li> <li>5. A system exists for executing remedial action in the event of the failure of the compartment/area to regenerate adequately</li> <li>6. Latest research information and environmental codes on what constitutes good practice inform changes in operational practice</li> </ol>	<p>information</p> <p>Post harvest inventory or objective assessment</p> <p>Discussions with forest management entity</p> <p>Field visit</p> <p>Discussions with FC (RMSC) and FORIG</p>		
<p>6.3.2 Forest management shall adopt <u>coarse grained protection measures</u> where</p>	<ol style="list-style-type: none"> <li>1. Initial zonation maps - identify, delineate and map</li> </ol>	<p>Field visits</p>	<p>Coarse grained strategy measures detailed in Forest Protection in</p>	

<p>appropriate in the planning and management of the resource</p>	<p>protected areas</p> <ol style="list-style-type: none"> <li>2. Maps are accurate and truly represent the situation on the ground</li> <li>3. Protected or conserved areas are adequate and appropriate in size and scale</li> <li>4. Areas protected for environmental stability including: <ul style="list-style-type: none"> <li>• hills, summits and steep slopes</li> <li>• swamp sanctuaries</li> <li>• shelterbelts</li> <li>• fire protection blocks</li> </ul> </li> <li>5. Areas for biodiversity protection</li> <li>6. Culturally sensitive areas of: <ul style="list-style-type: none"> <li>• local significance</li> <li>• national significance</li> </ul> </li> <li>7. Sites are excluded from production</li> </ol>		<p>Ghana by Hawthorne and Abu-Juam</p> <p>Summary of procedures is found in Manual of Procedures Section A</p> <p>Inspectors should seek to ensure that adequate and appropriate areas of forest types occurring within the FMU/DFA are set aside for protection, both nationally and regionally. Small isolated areas of forest that have been set aside for protection <u>may not be adequate</u> or capable of providing effective protection of species, plant or animal communities or ecosystems</p>	
<p>6.3.3 Forest management shall adopt fine grained protection measures in the planning and management of the forest</p>	<ol style="list-style-type: none"> <li>1. Stock surveys</li> <li>2. Individual tree location maps</li> <li>3. Compartments or zonation maps</li> <li>4. Maps are accurate and truly represent the situation on the ground</li> <li>5. Following areas are identified, mapped and physically excluded:</li> </ol>	<p>Field visits</p> <p>MoP Section C and D</p>	<p>Fine grained strategy measures detailed in Forest Protection in Ghana by Hawthorne and Abu-Juam</p> <p>Summary of procedures is found in Manual of Procedures Section A</p> <p>Class 5 = very poor.</p>	



	<ul style="list-style-type: none"> <li>• Areas where slopes &gt; 30%</li> <li>• Watercourse buffer zones (25-50m) depending on stream size</li> <li>• Permanently wet areas (but not designated as swamps)</li> <li>• Any sanctuaries identified under coarse grained zonation</li> <li>• Open patches of forest (classes 5 and 6)</li> </ul>		<p>Canopy mostly broken (&gt;75% open)                  Class 6 = no significant forest left. Scattered trees only remaining (Forest classes from Forest Protection in Ghana: Hawthorne and Abu-Juam)</p> <p>See also MoP section D</p>	
<p>6.3.4                  Areas/corridors of unlogged forest shall be retained as local refugia, to provide a seed source and to act as movement corridors for local fauna</p>	<ol style="list-style-type: none"> <li>1. Survey data</li> <li>2. Forest maps and compartment records</li> <li>3. Selection criteria and documented procedures for selecting corridors and refugia</li> </ol>	<p>Field visits                  DFM office                  Forest managers office</p>		
<p>6.3.5                  Management shall comprise systems capable of identifying degraded areas (pre or post logging)</p>	<ol style="list-style-type: none"> <li>1. Criteria established for degraded or unproductive areas</li> <li>2. Areas shown on maps and classified accordingly as non-productive, protected or convalescent</li> <li>3. Areas are appropriately designated and excluded from logging</li> </ol>	<p>Discussions with FC                  Discussions with forest management entity                  MoP section D</p>		
<p>6.3.6                  Management shall comprise appropriate mechanisms of on-site amelioration</p>	<ol style="list-style-type: none"> <li>1. Prescriptions laid down for different types of degrade or pollution including soil</li> </ol>	<p>Discussions with FC                  Discussions with forest</p>		

	and water 2. Prescriptions for enhancing or stimulating the regeneration of the tree crop 3. Reduced Impact Logging practices	management entity		
6.3.7 Degraded areas shall be identified and restorative treatments effected.	1. Evidence of prescribed treatment. 2. Compartments records	Site visits		

6.4 Representative samples of existing ecosystems within the landscape shall be protected in their natural state and recorded on maps, appropriate to the scale and intensity of operations and the uniqueness of the affected resources.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
6.4.1 Representative areas of existing forest communities and ecosystems, especially sites of ecological importance, shall be protected in their natural state and documented. (10% shall be the minimum in FSC certified forests).	1. Selection criteria and documented procedures for identifying and selecting representative areas  2. Forest and zonation maps and compartment records	Field visits	Ghana's forest protection strategy	

6.5 Written guidelines shall be prepared and implemented to: control erosion; minimize forest damage during harvesting, road construction, and all other mechanical disturbances; and protect water resources.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
6.5.1 Forest managers shall produce written guidelines to cover all aspects of management that impact on the forest to	1. Forest managers written operations procedures 2. Roads, bridges and loading sites located as per map	Field visit	Ghana Logging Manual	

<p>include road design and construction, preparation of log siding, tree felling, skidding among others aimed at minimising onsite impact.</p>	<p>3. Appropriateness and quality of road, bridges , culverts, skid trail 4. Felling direction 5. Riparian protection</p>			
<p>6.5.2 The guidelines shall include, at a minimum, specific provisions to prevent erosion by identifying areas which are susceptible to erosion, in which harvesting and other disturbance is prohibited</p>	<p>2. Forest managers written operations procedures 2 Roads, bridges and loading sites located as per map 3. Appropriateness and quality of road, bridges , culverts, skid trail 4. Felling direction 3. 5. Riparian protection</p>			
<p><b>6.5.3</b> <b>Applicable to SLIMF (1) DFAs only.</b>(Note. Indicator 6.5.1 does not apply.)  Forest managers or their contractors shall demonstrate knowledge to cover all aspects of management that impact on the forest to include road design and construction, felling among others and take practical measures to minimise negative impacts.</p>	<p>1. Managers road design and construction on the ground 4. Felling and skidding techniques</p>	<p>Discussions with forest managers and field workers  Field visits</p>		
<p>6.5.4 The road network and related constructions shall be properly constructed and maintained.</p>	<p>1. Main road width does not exceed 5m and haulage roads &lt; 3m 2. Roads with clear and unobstructed side drains and run offs 3. No erosion on road surface 4. Bridges and culverts permit unobstructed flow of water 5. Road spill material removed</p>	<p>Field visit</p>	<p>For details of permitted limits Auditors should refer to the Logging Manual and relevant sections of Mop Sections C. The key elements of these guidelines appear as verifiers in Column 2</p>	

	<p>or utilised in road and landings construction</p> <ol style="list-style-type: none"> <li>6. Embankments are stable</li> <li>7. Passing places adequate in number, appropriately constructed and sited</li> <li>8. Log loading sites properly constructed, stabilised and drained</li> <li>9. Road junctions do not exceed 11m in width and &lt; 30 m in length</li> <li>10. Roads do not exceed permitted gradients (10% for main roads and 14% for haulage roads)</li> <li>11. Roads and tracks are sited at regulation distances from rivers and streams</li> <li>12. Roads and extraction tracks do not cross rivers or buffer zones without culverts or bridges properly constructed</li> <li>13. Trees felled in road construction are utilised and/or crowns cross cut and reduced</li> <li>14. Records of road maintenance</li> <li>15. Roads not built during wet weather or other restricted times</li> </ol>			
<p>6.5.5 Felling and extraction shall be executed according to the logging plan</p>	<ol style="list-style-type: none"> <li>1. Logging adheres to logging plan</li> <li>2. Only trees selected for harvesting are felled - trees marked for retention are retained</li> </ol>	<p>Field visit</p>	<p>Format laid down in MoP Section C. Harvesting details also laid down in Logging Manual</p>	

	<p>3. Extraction routes for selected trees and/or felling direction coincides with the map in logging plan</p> <p>4. Restricted or protected areas marked in field and not logged (river buffer zones, slopes &gt;30%, swamps)</p> <p>5. Stock maps and yield maps at 1:2,500 scale</p> <p>6. Compartment inspection forms and stock maps provide details of:</p> <ul style="list-style-type: none"> <li>• roads and skid trails</li> <li>• bridges and culverts</li> <li>• areas where soil erosion control measures may be required</li> <li>• proposed location of log loading sites</li> <li>• streams and areas part of the coarse grained protection strategy</li> </ul>			
<p>6.5.6 Reduced impact logging and harvesting shall be practised</p>	<p>1. Directional felling has been practised</p> <p>2. Collateral damage identified, recorded and compensated.</p> <p>3. Yield recalculated to take into account collateral damage</p> <p>4. No skid paths on slopes &gt; 30%</p> <p>5. No trees felled on slopes &gt;30%</p> <p>5. Waterways cleared of debris</p> <p>6. Buffer zones exist</p> <p>7. No evidence of erosion or water contamination in the field</p> <p>8. Two or more trees adjacent to each other have not been</p>	<p>Field visit</p>		

	<p>felled</p> <p>9. Trees not felled into streams, buffer zones or other restricted/protected areas.</p> <p>10. No more than 3 trees per hectare felled</p>			
<p>6.5.7 Management shall provide detailed instructions and minimum standards for the design, construction and maintenance of roads and extraction tracks</p>	<p>Instructions provided on:</p> <ol style="list-style-type: none"> <li>1. Location of bridges and culverts</li> <li>2. Map requirements for alignment of roads, tracks, loading sites, bridges and culverts</li> <li>3. Road and track network subjected for approval <u>prior to</u> permission to enter compartment</li> <li>4. Specifications for road construction (width, surface cover, drainage etc)</li> <li>5. Specifications for landing sites (permanent locations)</li> <li>6. Specifications for road junctions (permissible angles, area covered by junction, approach slopes etc)</li> <li>7. Acceptable slopes on which roads and tracks may be situated</li> <li>8. Acceptable gradients for roads and extraction tracks</li> <li>9. Operational conditions clearly laid down when road and bridge construction are:             <ul style="list-style-type: none"> <li><input type="checkbox"/> permitted</li> <li><input type="checkbox"/> not permitted (wet weather conditions etc)</li> </ul> </li> </ol>	<p>Discussions with FC</p> <p>Discussions with forest managers</p>	<p>Logging Manual.</p> <p>Detailed instructions and standards for Reserve Forests are covered by MoP Section C</p>	

	<p>10. Stabilization of roads, embankments and cuttings</p> <p>11. Acceptable road density (per ha)</p> <p>12. Re-use of roads, loading and skid trails</p> <p>13. Operational rules established for roads, streams, buffer zones etc</p>			
<p>6.5.8 Trees to be harvested shall be indicated on maps of an appropriate scale prior to felling</p>	<p>1. Stock map exists at appropriate showing all trees prior to felling.</p> <p>2. Trees selected according to appropriate criteria.</p> <p>3. Stock map identifies trees to remain (seed trees, buffer zones etc)</p>	<p>Discussions with forest managers and</p> <p>DFM office</p>	<p>See MoP Section D</p>	
<p>6.5.9 Felling direction of trees and/or extraction route shall be marked on map prior to felling.</p>	<p>1. Stock map with felling direction marked</p> <p>2. Stock map with extraction route and provisional loading bays marked</p>	<p>Discussions with forest managers and</p> <p>DFM office</p>		
<p>6.5.10 Felling and extraction equipment shall be specifically selected to minimise environmental impact</p>	<p>1. Appropriate decision making criteria and process for selection and purchase of harvesting and extraction machinery</p> <p>2. Machines of dimensions and specifications higher than D6 and D7 not allowed</p>	<p>Discussions with forest managers</p>	<p><b>Ghana Logging Manual</b></p>	
<p>6.5.11 Relevant staff shall be trained and should be aware of the provisions of the written guidelines aimed at minimising impact of their operations</p>	<p>1. Training records</p> <p>2. Discussion with field workers</p>	<p>Field visit</p>		

6.6 Management systems shall promote the development and adoption of environmentally friendly non-chemical methods of pest management and strive to avoid the use of chemical pesticides. World Health Organization Type 1A and 1B and chlorinated hydrocarbon pesticides; pesticides that are persistent, toxic or whose derivatives remain biologically active and accumulate in the food chain beyond their intended use; as well as any pesticides banned by international agreement, shall be prohibited. If chemicals are used, proper equipment and training shall be provided to minimize health and environmental risks.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
6.6.1 Documented pest, disease and weed control strategies shall be available.	1. Manuals and operational guidelines exist	Discussions with forest management entity FC		
6.6.2 The use of all pesticides shall be discouraged, actively monitored and plans for their progressive phasing out made part of the management process.	1. A suitable and foolproof means of monitoring and recording the storage and use of chemicals exists and is documented 2. Guidelines and manuals for chemical use exist and good practice is adopted 3. Chemicals register (pesticides and herbicides). Including records of chemical use: a) Name of the product b) Location of the site treated; c) Area of the site treated; d) Method of application; e) Date chemical use started; f) Date chemical use finished; g) Total quantity of the chemical used 4. Contingency plans are documented and in	Field and office inspection of forest management  Discussions with forest managers	Auditors should consult advice notes on FSC list of prohibited pesticides	



	<p>place in the event of pollution or poisoning of the environment or individuals</p> <p>5. Adequate preventive and health and safety measures in place and implemented</p> <p>6. A clear plan for the phasing out of chemicals is detailed in the management plan together with a justification for the continued use of the chemical</p>			
<p>6.6.3 Environmentally friendly means of pest and weed control shall be adopted wherever possible. Chemicals shall be used only where there is no existence of known non-chemical alternative or entails excessive cost or an unrealistic expenditure of resources.</p>	<ol style="list-style-type: none"> <li>1. Documented justification for use</li> <li>2. Documentary evidence that alternatives are being considered.</li> </ol>	Field inspections.	EPA guidelines on non-chemical pest management.	
<p>6.6.4 Chemical prohibited by FSC (FSC-POL-30-601), World Health Organisation Type 1A and 1B and chlorinated hydrocarbon pesticides; as well as any highly hazardous pesticides banned by international agreement shall be prohibited, unless a FSC derogation has been obtained for their use in certified forests in Ghana.</p>	<ul style="list-style-type: none"> <li>• Records of chemicals purchased and used.</li> <li>• Field observation.</li> <li>• Discussions with managers, staff and contractors.</li> </ul>		Auditors shall consult advice notes on FSC list of prohibited pesticides	
<p>6.6.5 Where chemicals are used, proper equipment and training shall be provided to minimise health and environmental risks.</p>	<ol style="list-style-type: none"> <li>1. Procedures are in place to record all use of synthetic chemicals by the forest management enterprise</li> <li>2. Training and appropriate</li> </ol>	Field and office visits of forest management.		

	<p>equipment provided to all operators.</p> <ol style="list-style-type: none"> <li>3. Chemical tanks and stores located so that spillages and waste will not enter watercourses</li> <li>4. All equipment for the transport, storage and application of chemicals is maintained in safe condition and leak-proof containers</li> <li>5. No application of chemicals within 10m of watercourses and 30m around reservoirs and lakes</li> <li>6. No application in heavy rain or on ground baked dry during a drought</li> <li>7. No soaking of seedlings treated with chemicals in drains or watercourses</li> </ol>			
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6.7 Chemicals, containers, liquid and solid non-organic wastes including fuel and oil shall be disposed of in an environmentally appropriate manner at off-site locations.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
6.7.1 Mechanical equipment shall be maintained to function efficiently so that pollution and spillage are minimised	<ol style="list-style-type: none"> <li>1. Service records</li> <li>3. Records of maintenance programmes</li> <li>4. Absence of spillage on operational sites</li> <li>5. Where servicing and repairs in the forest are unavoidable all polluting material is collected</li> </ol>	<p>Visual inspection - working and stationary</p> <p>Field visits</p>		

	returned to camp or is disposed of properly			
6.7.2 Appropriate forms of chemical waste disposal shall be adopted in the field and in camps	<ol style="list-style-type: none"> <li>1. Waste material properly disposed</li> <li>2. Clear procedures and directives for proper waste disposal</li> <li>3. Offsite locations identified for the disposal of chemicals, oil lubricants and non-organic waste</li> <li>4. No evidence of waste and waste disposal in forests, along sides of streams etc</li> <li>5. Forest camps and operators/contractors based in the field abide by the same rules as HQ based staff</li> </ol>	Visits to field sites and camps.		
6.7.3 The enterprise shall keep an up to date list identifying the off-site location(s) for the disposal of all its chemicals, containers, liquid and solid non-organic wastes (including fuel and oil).	<ol style="list-style-type: none"> <li>1. Waste material properly disposed</li> <li>2. Clear procedures and directives for proper waste disposal</li> <li>3. Offsite locations identified for the disposal of chemicals, oil lubricants and non-organic waste</li> <li>4. No evidence of waste and waste disposal in forests, along sides of streams etc</li> <li>5. Forest camps and operators/contractors based in the field abide by the same rules as HQ based staff</li> </ol>	Visits to field sites and camps.		

6.8 Use of biological control agents shall be documented, minimized, monitored and strictly controlled in accordance with national laws and internationally accepted scientific protocols. Use of genetically modified organisms shall be prohibited.

Indicator	FMU level verifier	Other sources of	Guidance	Scoring and Notes
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		information		
6.8.1 Genetically modified organisms shall not be used	<ul style="list-style-type: none"> <li>Plant supply records</li> <li>Discussions with forest managers.</li> </ul>		The creation of GMOs involves gene transfer under laboratory conditions and not the product of tree breeding, vegetative propagation, cloning or tissue culture programmes.	
6.8.2 Use of biological control agents shall be documented, minimized, monitored and strictly controlled.	<ol style="list-style-type: none"> <li>Introduction protocols</li> <li>Permission from MoFA, EPA, FC</li> <li>Supporting trial results</li> <li>Documented procedures for monitoring impacts</li> </ol>		EPA Guidelines on non-chemical pest management	

6.9 The use of exotic species shall be carefully controlled and actively monitored to avoid adverse ecological impacts.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
6.9.1 The use of exotic species shall be carefully controlled and actively monitored to avoid adverse ecological impacts.	1. Documented procedures for monitoring ecological impacts of exotic species <i>or</i> existence of a long history of use without known, significant negative ecological impacts			
6.9.2 The likely ecological impacts of any exotic species shall be evaluated prior to its use.	1. Documented evidence of evaluation prior to the use of an exotic species.			

6.10 Forest conversion to plantations or non-forest land uses shall not occur, except in circumstances where conversion:

- a) entails a very limited portion of the forest management unit; and
- b) does not occur on high conservation value forest areas; and
- c) will enable clear, substantial, additional, secure, long term conservation benefits across the forest management unit.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
<p>6.10.1 Forest conversion to plantations or non-forest land uses shall not occur, except in circumstances where conversion: a) entails a very limited portion of the forest management unit; and b) does not occur on high conservation value forest areas; and c) will enable clear, substantial, additional, secure, long term conservation benefits across the forest management unit.</p>	<p>1. Maps of areas planted 2. Maps of land use prior to planting 3. Conversion objectives</p>			
<p>6.10.2 The area affected shall not exceed 0.5% of the area of the FMU in any one year, nor affect a total of more than 5% of the area of the FMU.</p>	<p>1. Maps of areas planted 2. Maps of land use prior to planting 3. Conversion objectives</p>			

**PRINCIPLE #7: MANAGEMENT PLAN**

A management plan -- appropriate to the scale and intensity of the operations -- shall be written, implemented, and kept up to date. The long term objectives of management, and the means of achieving them, shall be clearly stated.

7.1 The management plan and supporting documents shall provide:

- a) Management objectives.
- b) Description of the forest resources to be managed, environmental limitations, land use and ownership status, socio-economic conditions, and a profile of adjacent lands.
- c) Description of silvicultural and/or other management system, based on the ecology of the forest in question and information gathered through resource inventories.
- d) Rationale for rate of annual harvest and species selection.
- e) Provisions for monitoring of forest growth and dynamics.
- f) Environmental safeguards based on environmental assessments.
- g) Plans for the identification and protection of rare, threatened and endangered species.
- h) Maps describing the forest resource base including protected areas, planned management activities and land ownership.
- i) Description and justification of harvesting techniques and equipment to be used.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
<p>7.1.1 Management plan for FMU/DFA/TUC Area, the attached and referenced documents shall provide</p> <ul style="list-style-type: none"> <li>a. Clear management objectives</li> <li>b. Description of the resource, exploitation, land use ownership, socio-economic conditions and adjoining lands</li> <li>c. Description of silviculture and or other management system based on knowledge of the ecosystem of the forest in question and information gathered through resource inventory</li> <li>d. Rationale for annual harvest and species selection.</li> <li>e. Description and justification of the</li> </ul>	<p>1 Copies of relevant and up to date FRMPs available                      .2. Clear and unequivocal management goals</p> <p>3.Management goals for the FMU are congruent with the forest policy and do not conflict with each other</p> <p>4. For TUCs, management goals are congruent with FMU management goals.</p> <p>5.One or more maps at an appropriate scale showing the boundaries of the DFA and with reference to survey</p>	<p>Forest Management Plan</p> <p>Visits to DFM office and discussions with DFM</p> <p>Discussions with forest managers</p>	<p>Refer to:</p> <ul style="list-style-type: none"> <li>• National Forestry Plan</li> <li>• Forest Reserve Management Plans</li> <li>• Forest Protection Strategy (Fine and coarse grained)</li> <li>• Manuals of Procedures</li> <li>• MoP Section D</li> </ul>	

<p>techniques and equipment to be used</p> <p>f. Environmental safeguard based on environmental assessment</p> <p>g. Measures for identifying and protecting of rare, threatened and endangered species</p> <p>h. Map(s) describing the forest resource including protected areas, unique biological or cultural resources, watercourses and drains, compartments/blocks, roads, log landings, , and other planned management activities;</p> <p>i. Strategies for monitoring forest growth and dynamics</p>	<p>points or clear and recognisable geographical or topographical features</p> <p>6. Maps require all appropriate features to be included:</p> <ul style="list-style-type: none"> <li>• rivers and water features with buffer zones</li> <li>• black star species</li> <li>• scarlet star species</li> <li>• Slopes</li> <li>• Cultural sites</li> <li>• Research sites</li> <li>• Proposed roads, extraction tracks, junctions and loading sites</li> </ul> <p>7.All relevant personnel have access to plans, maps and technical data as required</p> <p>8. Adequate information exists on which to base an FRMP</p>			
<p>7.1.2 TUCs shall be observed in formulating the FMU plans and they should follow the agreed format.</p>	<ol style="list-style-type: none"> <li>1. Socio-economic survey</li> <li>2. Field reconnaissance</li> <li>3. Conservation and protection areas</li> <li>4. Maps</li> <li>5. Forest Reserve Annual Reports</li> <li>6. Team composition for FMU plans</li> <li>7. Stakeholder workshops for FMU plans</li> </ol>	<p>DFM and RFM</p>		

<p>7.1.3 Information on the flora of the DFA/FMU shall be clearly documented.</p>	<ol style="list-style-type: none"> <li>1. Forest Reserve Management Plan</li> <li>2. Forest inventory</li> <li>3. Forest stock maps</li> </ol>	<p>DFM DFO DFM</p>	<p>National Forest Inventory of 1984-9 may provide baseline data about the FMU as well as the national status of the forest resource and the Multi-resource inventory of MRI (2003)</p> <p>Annexes and zonation maps should accompany the Forest Reserve Management Plan</p>	
<p>7.1.4 Information on the fauna of the DFA/FMU shall be clearly documented</p>	<ol style="list-style-type: none"> <li>1. Forest Reserve Management Plan</li> </ol> <p>Ecological survey which details the status of fauna within the DFA</p>	<p>DFM Wildlife Division and Min of Environment</p>	<p>DFM and/or Forest management entity are expected to conduct some form of survey to assess the current status of fauna within the DFA/FMU</p>	
<p>7.1.5 DFA/FMU shall be covered by a valid harvesting schedule of a pre-determined format</p>	<ol style="list-style-type: none"> <li>1. Harvesting schedule available</li> <li>2. Accompanying maps</li> <li>3. DFA/FMU appropriately subdivided into compartments</li> <li>4. Harvesting Schedule for DFA/FMU is appropriate based on the 40 felling cycle and compartment history</li> </ol>	<p>Forestry Commission RFM or DFM of FC</p>	<p>Format laid down in MoP Section E and Logging Manual</p>	
<p>7.1.6 Compartment inspection shall be completed for the DFA/FMU</p>	<ol style="list-style-type: none"> <li>1. Detailed compartment map at 1:10,000 scale</li> <li>2. Detailed compartment information available according to format</li> </ol>	<p>Discussion with DFM</p>	<p>Format and key elements to be included are laid down in MoP Sections C and E</p>	
<p>7.1.7 Stock Survey and Compartment</p>	<p>Completed inspection form and stock survey signed off</p>	<p>Discussion with DFM</p>	<p>Format laid down in MoP Section D and Logging</p>	



inspection shall be completed for the DFA/FMU	by District Forest manager.	Forest manager	Manual	
7.1.8 DFA/FMU compartment logging plan shall be prepared.	<ol style="list-style-type: none"> <li>1. Logging plan which adheres to a detailed pre-determined format:</li> <li>2. Stock maps and yield maps at 1:2,500 scale or better</li> <li>3. Yield summary in tabular form</li> <li>4. Compartment logging plan with details of: <ul style="list-style-type: none"> <li>• roads and skid trails</li> <li>• bridges and culverts</li> <li>• areas where soil erosion control measures may be required</li> <li>• proposed location of log loading sites</li> <li>• streams and areas part of the coarse grained protection strategy</li> </ul> </li> <li>5. Forestry Commission approval of logging plan</li> </ol>	Discussion with the DFM and DFA managers	See MoP Sections C Format laid down in MoP Sections B and C and the Logging Manual	
7.1.9 <b>Applicable to SLIMF (1) DFAs only:</b> (note: above indicators do not apply except when required by law or FC administrative directive)  DFA shall have written management plan	<ol style="list-style-type: none"> <li>1 Written management plan of DFA</li> <li>2 Managers knowledge of the management plan's contents</li> </ol>	<p>Discussion with DFA managers</p> <p>Discussion with DFM</p>		

<p>that at minimum includes the following:</p> <ul style="list-style-type: none"> <li>a . Objectives of management;</li> <li>b . A description of the forest;</li> <li>c . How the objectives will be met.</li> <li>d Sustainable harvest limits that is consistent with FSC criteria 5.6);</li> <li>e. Conservation of rare species habitats and any high conservation values;</li> <li>f. Maps of the forest, showing protected areas, planned management.</li> <li>g. Duration of the plan.</li> </ul>				
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7.2 The management plan shall be periodically revised to incorporate the results of monitoring or new scientific and technical information, as well as to respond to changing environmental, social and economic circumstances.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
<p>7.2.1 Planning and overall management of the forest resource shall be based on the best and most up-to-date information possible and shall be regularly reviewed and revised to incorporate new information.</p>	<ol style="list-style-type: none"> <li>1. Forest inventories and surveys</li> <li>2. Compartment records and closing reports</li> <li>3. Research, bulletins, briefing papers</li> <li>4. Forest Reserve Management Plans</li> <li>5. Document tracking system for research reports to ensure proper circulation.</li> <li>6. Schedule for revision of management plans at regular intervals.</li> <li>7. EIA guidelines for forest and wood industries</li> </ol>	<p>Discussions with FC</p> <p>FORIG and DFA managers</p>		
<p>7.2.2 The forest management system (FMS) shall be constantly upgraded and</p>	<ol style="list-style-type: none"> <li>1. Organisations and individuals responsible for systems modification are</li> </ol>	<p>Discussions with FC and DFA managers</p>		

<p>improved in the light of new information and of the results of monitoring to ensure its continuing suitability and effectiveness</p>	<p>clearly identified and are aware of their responsibilities</p> <ol style="list-style-type: none"> <li>2. Provisions are made for the periodic review, evaluation and revision of the FMS and its component parts</li> <li>3. Evaluation of policy objectives and targets in light of information from internal monitoring procedures, audits and feedback from stakeholders</li> <li>4. Failures to meet intended goals or manifest failures of FMS are identified</li> <li>5. Appropriate modifications in the FMS developed and installed</li> <li>6. Document tracking system for research reports to ensure proper circulation.</li> <li>7. Schedule for revision of management plans at regular intervals.</li> <li>8. EIA guidelines for forest and wood industries.</li> </ol>			
<p>7.2.3  <b>Applicable for SLIMF (1) DFA's only</b> (Note: above indicators do not apply except where it is required by law or FC administrative directive)</p> <p>Management plan shall be reviewed at least every 10 years and updated, if necessary, incorporating the results</p>	<ol style="list-style-type: none"> <li>1. Age of the management plan</li> <li>2. Monitoring results</li> <li>3. Available research results on the DFA</li> </ol>	<p>Discussions with managers</p>		

of monitoring to plan and implement future management.				
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7.3 Forest workers shall receive adequate training and supervision to ensure proper implementation of the management plan.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
7.3.1 The Forest Management Organisation shall assign responsibilities to employees and delegate authority to them to enable them to fulfil their responsibilities.	<ol style="list-style-type: none"> <li>1. Clear documentation exists identifying roles and responsibilities</li> <li>2. Organisational chart identifying individuals, and respective responsibilities</li> <li>3. Respective individuals are aware of their responsibilities</li> <li>4. Instruction sheets to staff and workers</li> <li>5. Contracts and terms of employment</li> </ol>	Discussions with staff of forest management entity	It is important for management staff to be as fully informed as possible and that the authority and responsibilities of those responsible for the management of the resource are clear and transparent.	
7.3.2 Regular assessments of training and education <u>needs</u> of employees and contractors shall be conducted by the managers.	<ol style="list-style-type: none"> <li>1. Records of training assessments</li> </ol>	Discussions with managers	Both for forest managers own employees <u>and</u> contractors	
7.3.3 Regular assessments of employees and contractors' <u>performance</u> and actions shall be conducted regularly by managers to identify and correct poor performance, failure to meet standards or other shortcomings	<ol style="list-style-type: none"> <li>1. Records of training assessments</li> <li>2. Records of induction courses</li> <li>3. Appropriateness of content of induction courses</li> <li>4. Records of courses on</li> </ol>	Discussions with managers		

	health and safety 5. Individual training records (personnel records)			
7.3.4 Sufficient workers with appropriate levels of skills shall be employed by the managers to execute the work required by the forest management system.	1. Adequate workforce 2. Regular and appropriate training and re-training programmes	Discussions with DFM  Forest manager	Workforce of the forest management entity will need to be evaluated to see if they can fulfil their respective functions	
7.3.5 Any changes in operational procedures from that laid down by the FMS or arising from corrective or preventive actions shall be recorded.	1. Forest managers operations manuals	Discussions with FC staff  Discussions with forest managers		
7.3.6 Provisions shall be made for the periodic review and evaluation of forest managers procedures to detect, prevent or remedy non-conformities and to determine the extent to which actual outcomes of the operations coincide with forecasts.	1. Licence holder continues to meet its legal, technical and organisational obligations (eg under TUC) 2. Relevant and appropriate targets and performance indicators have been established by management 3. Maps of DFA/FMU and its constituent components readily and widely available and regularly updated 4. Management comprises suitable monitoring systems which provides information to improve and modify the management of the DFA	Discussions with managers		

	/FMU			
7.3.7 Management systems shall ensure good internal communications and transparency.	System exists for communication between the contract/licence holders and the government agencies responsible for management as well as landowners, farmers and other stakeholders 1. Formal system of recording and documenting correspondence and communications exists 3. Public reporting mechanisms exist 4. Stakeholder awareness programme exists (see also 2.5)	Discussions with:  DFM Communities Staff of Forest management entity among other stakeholders		
7.3.8 Manuals of management and or Standard operations procedures (SoP) shall be established and maintained.	1. Appropriate manuals of procedures and operational guidelines exist and are regularly in use  2. Regular revisions/updates	Discussions and office visit with forest management entity  Discussions visit with FC	It is the FC who is principally responsible for maintaining the Manuals of Procedures, Logging Manual and associated technical manuals.  However, it is reasonable to expect TUC holders to produce their own operations and field manuals even if they are distillations of the manuals prepared by the FC.	

7.4 While respecting the confidentiality of information, forest managers shall make publicly available a summary of the primary elements of the management plan, including those listed in Criterion 7.1.

Indicator	FMU level verifier	Other sources of	Guidance	Scoring and Notes
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		information		
7.4.1 A summary of the primary elements as in 7.1 (i to j) of the management plan shall be made publicly available, including the elements listed in FSC Criterion 7.1 and 9.3	1. Publicly available management plan summary. 2. Stakeholders have received the public summary when they have requested it.		The summary should be available to members of the public on request.	

Criterion 7.5 Measures shall be taken to prevent and minimise outbreaks of fire (Additional Criterion for Ghana)

Bush fire is a problem in the country.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
7.5.1 The need for fire management and control shall be properly evaluated and documented.	1. FRMP and District Area Plans  2. District Forest Development Plan	Discussions with DFM  Discussions with District Assemblies MoP G	<b>National Wildlife Management Policy 2006</b>	
7.5.2 In fire-prone areas, or those in which fire is an integral feature of the ecology of the forest, there shall be a fire management plan.	1. Fire plan based on appropriate maps and consideration of: <ul style="list-style-type: none"> <li>• Known ignition sources;</li> <li>• Direction of main threat;</li> <li>• Fuel, distribution and flammability;</li> <li>• Ecological features and processes in the forest;</li> <li>• Special features e.g. archaeological sites, rare fire susceptible flora;</li> <li>• Local communities;</li> <li>• Local assets</li> </ul>	Discussions with DFM  Discussions with District Assemblies  MoP G  <b>National Wildfire Management Policy 2006</b> The Ghana National Fire Service Act, 1997	<b>.National Wildfire Management Policy 2006</b> The Ghana National Fire Service Act, 1997	

	<ul style="list-style-type: none"> <li>• requiring protection;</li> <li>• Access, firebreaks and fuel reduction measures;</li> <li>• Fire detection and suppression procedures;</li> <li>• Resources for control and suppression</li> </ul>			
7.5.3 Forest managers shall implement fire management plan and monitor its effectiveness	<ol style="list-style-type: none"> <li>1. Implementation procedures</li> <li>2. Monitoring records</li> <li>3. Action on monitoring results</li> <li>4. Field visits</li> </ol>			

**PRINCIPLE #8: MONITORING AND ASSESSMENT**

Monitoring shall be conducted -- appropriate to the scale and intensity of forest management -- to assess the condition of the forest, yields of forest products, chain of custody, management activities and their social and environmental impacts.

8.1 The frequency and intensity of monitoring should be determined by the scale and intensity of forest management operations as well as the relative complexity and fragility of the affected environment. Monitoring procedures should be consistent and replicable over time to allow comparison of results and assessment of change.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
8.1.1 Forest management shall include systems for periodic monitoring and reporting of key elements of forest management and their impacts.  Note: see also Indicators for implementation of Criterion 8.2, below.	<ol style="list-style-type: none"> <li>1. Existence of monitoring system</li> <li>2. Coverage of monitoring system eg environmental, social, and economic and operation.</li> <li>3. Actions on monitoring results</li> </ol>	<ul style="list-style-type: none"> <li>• Compartment Records</li> </ul>		
8.1.2 The frequency and intensity of	1 Assessment of complexity of operations and the		Auditors must refer to the classification contained in	



monitoring shall be based on the size and complexity of the operation and the fragility of the resources under management	ecosystem. 2. Periodicity of monitoring 3. Monitoring reports		schedule 1 of the Timber Resources Management Regulation L.I 1649 of 1998: 20km <sup>2</sup> , 125km <sup>2</sup> and 125+ km <sup>2</sup> for small, medium and large operators respectively	
8.1.3 <b>Applicable to SLIMF (1) DFA's only</b> (Note: above indicators do not apply except where it is required by law or FC administrative directive):  DFA managers shall conduct regular and consistent monitoring in connection with harvesting operations.	1. Evidence of monitoring of harvesting operations 2. Consistency of monitoring	Discussions with managers		

8.2 Forest management should include the research and data collection needed to monitor, at a minimum, the following indicators:

- a) Yield of all forest products harvested.
- b) Growth rates, regeneration and condition of the forest.
- c) Composition and observed changes in the flora and fauna.
- d) Environmental and social impacts of harvesting and other operations.
- e) Costs, productivity, and efficiency of forest management.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
8.2.1 Forest management shall include systems to monitor the growth rates, regeneration and condition of the commercially exploitable tree crops	1. Post harvesting inventory 2. Compartment registers 3. Compartment closure report (for baseline data and purposes of comparison) 4. Research records and reports 5. Analysis of data from permanent sample plots (PSP)	Post harvesting inventory data  Aerial photographs  Satellite and remote sensing imagery		
8.2.2	1. Compartment records	Discussions with		

<p>Forest management shall include systems to monitor changes in the structure of the forest ecosystem - its flora and fauna.</p>	<ol style="list-style-type: none"> <li>2. Forest maps</li> <li>3. Permanent sample plots and continuous inventory</li> <li>4. Data and forms for recording fauna</li> <li>5. Remote sensing, aerial photography</li> <li>6. Ongoing monitoring of fauna and flora component</li> <li>7. Routine reporting systems by forest guards</li> </ol>	<p>managers/FC</p> <p>Discussions with forest guards</p>		
<p>8.2.3 Forest management shall include systems to monitor the effectiveness of the measures employed to maintain or enhance the high conservation value attributes identified as a result of the analysis specified in indicator 9.1.1.</p>	<ol style="list-style-type: none"> <li>1. Monitoring records on HCV</li> <li>2. Analysis and use of results</li> </ol>			
<p>8.2.4 Forest management shall include systems to monitor costs, productivity, and efficiency of forest management operations.</p>	<ol style="list-style-type: none"> <li>1. Annual reports for on reserve forests</li> <li>2. Comparison of performance with 5 year plan</li> <li>3. Monthly reports.</li> <li>4. Quarterly expenditure and revenue reports.</li> <li>5. Published accounts</li> </ol>	<p>Discussions with forest managers</p>		
<p>8.2.5 Adequate compartment registers shall be established and maintained by the managers</p>	<ol style="list-style-type: none"> <li>1. Compartment registers of an appropriate format exist detailing: <ul style="list-style-type: none"> <li>• location, area and boundaries</li> <li>• history of operations and interventions</li> <li>• schedule for harvesting including date of next cut</li> </ul> </li> </ol>	<p>Visit to offices of forest management entity and the DFM</p>		

	<ul style="list-style-type: none"> <li>location and descriptions of environmentally sensitive areas and requirements for their conservation</li> </ul>			
<p>8.2.6  <b>Applicable to SLIMF (1) DFAs only</b>                  (Note: above indicators do not apply except where it is required by law or FC administrative directive): DFA shall at a minimum monitor and record information on the following:</p> <ul style="list-style-type: none"> <li>Amount of products harvested;</li> <li>Regular monitoring of any identified high conservation values;</li> <li>Fire threats</li> <li>Forest growth and regeneration.</li> <li>Post harvest inspection for erosion and stream flow; and,</li> <li>Periodic inventory (every 10 to 15 years).</li> </ul>	<p>2. Compartment maps</p> <p>1. Monitoring records</p>	Discussions with managers		

8.3 Documentation shall be provided by the forest manager to enable monitoring and certifying organizations to trace each forest product from its origin, a process known as the "chain of custody."

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
<p>8.3.1                  Forest management shall include a system for identifying and marking, in a unique and unambiguous manner, the identity of timber or other commercial</p>	<p>1. FC's log tracking procedure</p> <p>2. Physical marking of timber/other products</p> <p>3. System of timber tagging</p>	<p>Discussions with forest management entity</p> <p>Field visits to harvesting sites in field</p>	<p>Timber Resource Management Regulation L.I 1649</p> <p>Ghana Logging Manual</p>	

forest products and its point of origin.	4. Marking or tagging corresponds to field surveys and tree maps	Visits to roadside check stations		
8.3.2 Forest management shall include systems for tracking timber or other commercial forest products from the point of origin to the point of sale or point of conversion.	1. Control systems in place and functioning effectively 2. FC tracking system 3. Yield summaries, TIF, LIF, LMCC, production and	Discussions with forest management entity and FC  Field visits	Note: The Free Zone Board holds quarterly production, export , local sales and other data for registered free zone forest entities	
8.3.3 The forest management entity shall maintain <b>control</b> of the chain of custody of commercial forest products up to the point of sale.	1. Procedure documented 2. Invoices or appropriate documentation issued for timber sales that clearly identifies: <ul style="list-style-type: none"> <li>• the commercial product (permitting its source to be traced)</li> <li>• the date of sale</li> <li>• the quantity and specifications (species, dimensions, quality)</li> <li>• the point at which the buyer takes control of the chain of custody of the product</li> </ul>	Discussions with forest management entity  Discussions with FC  Field visits at various points along the custody of chain		

8.4 The results of monitoring shall be incorporated into the implementation and revision of the management plan.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
8.4.1 The management plan shall include protection and conservation strategies are modified in response to new data	1. System exists for regular review of management plans 2. Results of environmental studies	Discussions with forest management entity, FC staff (RMSC) and FORIG		

and information	<ol style="list-style-type: none"> <li>3. Results of forest inventories and permanent sample plots</li> <li>4. Wildlife studies and information from Wildlife Division on forest ecosystems</li> <li>5. Remote sensing data and aerial photography</li> <li>6. Forest maps and compartment records</li> <li>7. Fire protection plans</li> </ol>	<p>Discussions with Wildlife Division</p> <p>Discussions with forest management entity</p>		
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8.5 While respecting the confidentiality of information, forest managers shall make publicly available a summary of the results of monitoring indicators, including those listed in Criterion 8.2.

FSC Reference Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
8.5.1 A summary of the results of monitoring shall be made publicly available, including the elements listed in FSC Criterion 8.2.	<ol style="list-style-type: none"> <li>1. Publicly available summary of results of monitoring.</li> <li>2. Stakeholders have received the public summary when they have requested it.</li> </ol>		The summary should be available to members of the public on request.	

### PRINCIPLE 9: MAINTENANCE OF HIGH CONSERVATION VALUE FORESTS

Management activities in high conservation value forests shall maintain or enhance the attributes which define such forests. Decisions regarding high conservation value forests shall always be considered in the context of a precautionary approach.

9.1 Assessment to determine the presence of the attributes consistent with High Conservation Value Forests will be completed, appropriate to scale and intensity of forest management.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
9.1.1 The results of assessments specified in	1. Forest surveys	Ghanaian assessments of Globally Significant	GFCS Glossary: " <b>Globally Significant Biodiversity</b> "	

<p>Indicator 6. 1.1. shall be analysed to determine the presence of High Conservation Value attributes, as defined in the FSC Glossary.</p>	<p>2. Maps of forest types, important habitats and critical areas (incl. GSBA and coarse grained protection areas)</p> <p>3 Environmental impact assessment</p>	<p>Biodiversity Areas (GSBA).</p> <p>An Interpretation of Global HCVF toolkit for use in Ghana</p>	<p><b>Areas (GSBA):</b> Areas within Ghana that are assessed as being outstanding (globally and nationally) as repositories of biodiversity. Key elements of Ghana's protected area network. Broadly synonymous with High Conservation Value Forests..."</p>	
<p>9.1.2 Sites within the DFA that are of special cultural, ecological or religious significance to local communities shall be identified in collaboration with such people, documented and provided with such protection that they continue to fulfil their functions</p>	<ol style="list-style-type: none"> <li>1. TOS and SRA</li> <li>2. Clear policy exists for identifying and dealing with such sites when they are encountered</li> <li>3. Operational or field guidelines of forest managers</li> <li>4. Surveys and maps accompanying forest management</li> <li>5. Clear guidelines exist for the subsequent protection of such sites when identified</li> </ol>	<p>Discussions with forest management entity</p> <p>Discussions with local communities</p> <p>Field visits</p>	<p>Guidelines for the appropriate processes can be found in MoP Section C</p> <p>Details of sites should also appear in the TUC and appropriate annexes and the SRA</p>	

9.2 The consultative portion of the certification process must place emphasis on the identified conservation attributes, and options for the maintenance thereof.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
<p>9.2.1 Forest managers shall consult and document in consultation with stakeholders on the identification of High Conservation Values, and the</p>	<p>see indicators 4.4.5 and 4.4.6</p> <p>Existence of consultation documentation.</p>		<p>During evaluation for certification the certification body should consult to confirm whether the Managers' consultation</p>	

management options thereof. (see Indicators 4.4.5 and 4.4.6)	Discussion with stakeholders		with stakeholders was adequate in relation to consideration of High Conservation Values.	
9.2.2 <b>Applicable to SLIMF (1) DFAs only</b> (Note: above indicators do not apply except where it is required by law or FC administrative directive):  Managers shall have consulted with relevant stakeholders to identify HCVs and/or HCVF. This may occur during the actual certification assessment. If HCVs or HCVF are present, managers are required to take all reasonable steps to protect these values and/or reduce threats	1. Evidence of any earlier consultations	Discussions with managers		

9.3 The management plan shall include and implement specific measures that ensure the maintenance and/or enhancement of the applicable conservation attributes consistent with the precautionary approach. These measures shall be specifically included in the publicly available management plan summary.

FSC Reference Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
9.3.1 The management plan shall include specific measures for the maintenance and/or enhancement of those attributes identified in Criterion 9.1 as being High Conservation Values	Management planning documents	An Interpretation of Global HCVF toolkit for use in Ghana		

9.4 Annual monitoring shall be conducted to assess the effectiveness of the measures employed to maintain or enhance the applicable conservation attributes.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes

9.4.1 see Indicator 8.2.3				
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**PRINCIPLE # 10: PLANTATIONS**

Plantations shall be planned and managed in accordance with Principles and Criteria 1 - 9, and Principle 10 and its Criteria. While plantations can provide an array of social and economic benefits, and can contribute to satisfying the world's needs for forest products, they should complement the management of, reduce pressures on, and promote the restoration and conservation of natural forests. Annex 6 provides details of plantation definition in the context of Ghana.

10.1 The management objectives of the plantation, including natural forest conservation and restoration objectives, shall be explicitly stated in the management plan, and clearly demonstrated in the implementation of the plan.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
10.1.1 Objectives of plantation shall be clearly stated in the management plan to include: Conservation and restoration of the nature forest, social acceptability and environmental appropriateness.	1. Management plan 2. Supporting documents	Forest manager's office Discussions with other stakeholders	Plantation Manual of Procedures (MoP) Section A, B and C	
10.1.2 The means of achieving plantation management objectives shall be documented in the management plan	Management plan and supporting documents	Forest Manager's office	<b>For areas less than 20 ha a management plan may not be necessary documented</b>	
10.1.3 Plantation management objectives shall be demonstrated in forest management activities	1 Management plan 2. Forest manager's field operational procedures/instructions	Forest managers office Discussions with other stakeholder Field visit		

10.2 The design and layout of plantations should promote the protection, restoration and conservation of natural forests, and not increase pressures on natural forests. Wildlife corridors, streamside zones and a mosaic of stands of different ages and rotation periods shall be used in the layout of the



plantation, consistent with the scale of the operation. The scale and layout of plantation blocks shall be consistent with the patterns of forest stands found within the natural landscape.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
10.2.1 Plantation design and layout shall demonstrate the commitment to protect, restore and conserve natural forest	1 Management plan 2. supporting documents 3. Planning procedures 4. Plantation and blocks map	Plantation MoP (A) DFO	Field visits	
10.2.2 Plantation design and layout shall establish riparian zones in accordance with Ghana's best practices, wildlife habitats and corridors suitably located across plantation areas.	1. Plantation and block maps 2. Field inspection	Field visits Discussions with other stakeholders		
10.2.3 The layout of plantation blocks shall be consistent with the patterns of the landscape and natural feature of the area	1.Management plan 2. Planning procedures 3. Field inspection	Field visits	Topographical map of the area	

10.3 Diversity in the composition of plantations is preferred, so as to enhance economic, ecological and social stability. Such diversity may include the size and spatial distribution of management units within the landscape, number and genetic composition of species, age classes and structures.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
10.3.1 Plantation establishment shall place emphasis on combining / varying, varying block sizes, age class and structure	1.Management plan (number of species) 2. Field visits (block sizes, age classes)			
10.3.2 Plantation design and management shall ensure species and genetic	The number of species and management practices	Field visit Botanical and other wildlife reports		

diversity	Diversity of flora and fauna within plantation Reports indicating changes in species diversity since plantation establishment			
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10.4 The selection of species for planting shall be based on their overall suitability for the site and their appropriateness to the management objectives. In order to enhance the conservation of biological diversity, native species are preferred over exotic species in the establishment of plantations and the restoration of degraded ecosystems. Exotic species, which shall be used only when their performance is greater than that of native species, shall be carefully monitored to detect unusual mortality, disease, or insect outbreaks and adverse ecological impacts.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
10.4.1 Species selection shall be based on suitability to the site conditions (soils, topography and climate) and management objectives	1. Management plan 2. Justification for species selection	1. Discussion with other stakeholder (FORIG, RMSC, FRNR)	Plantation MoP (A)	
10.4.2 Indigenous species shall be given first consideration during species selection.	1. Justification for specie selection 2. Discussion with manager on potentials and limitations of indigenous species	Discussions with research institutions eg, FORIG, FRNR		
10.4.3 The choice of exotic species shall be justified to include that it out-performs against native species for selected management objectives.	1. Justification for selection of exotic species 2. Discussions with management	Discussions with research institutions eg FORIG, FRNR		
10.4.4 Exotic species shall not be planted on a large scale until local trials and /or experience have shown that they are well adapted to the site and do not have serious adverse ecological impact.	1. Species local trial results 2. Species trial results from other published sources	Discussion with research, eg FORIG, FRNR  Field visits		

10.5 A proportion of the overall forest management area, appropriate to the scale of the plantation and to be determined in regional standards, shall be managed so as to restore the site to a natural forest cover.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
10.5.1 A proportion of the existing natural ecosystem shall be managed to enhance its natural characteristics. (Note. Reference is also being made to indicators 10.2.1, 10.2.2 and 10.2.3)	1. Maps 2. Justification for total area managed for natural forest restoration 3. Field visits			
10.5.2 <b>Applicable to SLIMF (2) only:</b> (Note, Indicator above do not apply except where it is required by law or FC administrative directive)  Plantation design and management shall enhance ecological values especially conservation features	1. Maps 2. Field visit			

10.6 Measures shall be taken to maintain or improve soil structure, fertility, and biological activity. The techniques and rate of harvesting, road and trail construction and maintenance, and the choice of species shall not result in long term soil degradation or adverse impacts on water quality, quantity or substantial deviation from stream course drainage patterns.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
10.6.1 Plantation establishment and management shall incorporate specific measure to maintain or enhance the soil in terms of structure, fertility and biological activity.	1. Management plan 2. Species selection 3. Soil suitability records 4. Field visit	Discussions with research institutions	Plantation MoPs A and C	
10.6.2	1. Management plan	Discussions with other	Plantation MoPs	

Plantation design and management activities shall not lead to soil degradation	2. Field visit	stakeholders		
10.6.3 Plantation activities shall not degrade water quality, and impact negatively on local hydrology.	1. Management plan 2. Other plans (maps, annual plan of work) 3. Field visits	Discussions with other stakeholder (eg fringe communities)		
10.6.4 Where soil rehabilitation or improvement is required, organic fertilisers, cover cropping or other non-chemical means shall be adopted in preference to inorganic fertilisers wherever possible	1. Discussions with managers  2. Documentation on methods used.	Site visits of rehabilitation areas		

10.7 Measures shall be taken to prevent and minimize outbreaks of pests, diseases, fire and invasive plant introductions. Integrated pest management shall form an essential part of the management plan, with primary reliance on prevention and biological control methods rather than chemical pesticides and fertilizers. Plantation management should make every effort to move away from chemical pesticides and fertilizers, including their use in nurseries. The use of chemicals is also covered in Criteria 6.6 and 6.7.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
10.7.1 Plantation management shall take measures to prevent outbreaks of pest, disease, fire and invasive plant introduction	1. Management plan 2. Records on species selection 3. Monitoring plan and records			
10.7.2 Integrated Pest and fire management plans shall exist.	1. Documented fire plan 2. Pest management policy	Discussions with staff		
10.7.3 Plantation management shall take measures to minimise the use of	1. Nursery management procedures 2. Field visits	Discussions with staff		

chemical pesticides and fertilisers				
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10.8 Appropriate to the scale and diversity of the operation, monitoring of plantations shall include regular assessment of potential on-site and off-site ecological and social impacts, (e.g. natural regeneration, effects on water resources and soil fertility, and impacts on local welfare and social well-being), in addition to those elements addressed in principles 8, 6 and 4. No species should be planted on a large scale until local trials and/or experience have shown that they are ecologically well-adapted to the site, are not invasive, and do not have significant negative ecological impacts on other ecosystems. Special attention will be paid to social issues of land acquisition for plantations, especially the protection of local rights of ownership, use or access.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
10.8.1 Monitoring shall include evaluation of potential on-site and off-site ecological and social impact of plantation activities	1. Monitoring schedules 2. Monitoring results 3. Evidence of use of monitoring results in plantation management		EPA 's Sector-Specific Environmental Impact Assessment Guidelines for Forest and Wood Industries	
10.8.2 <b>Application to SLIMF (2) only</b> (note indicator 10.8.1 does not apply except when required by law or FC administrative directive)  Plantation management shall document negative environmental and social impact and design and implement measures to address the impacts	1. Documented evidence of negative impacts 2. Field visits	Discussions with other stakeholders		
10.8.3 Land acquisition for plantation establishment shall not impact negatively on the communities and / or resource use by the local people	1. Land acquisition records 2. Field visits	Discussion with local communities and other stakeholders		

10.9 Plantations established in areas converted from natural forests after November 1994 normally shall not qualify for certification. Certification may be allowed in circumstances where sufficient evidence is submitted to the certification body that the manager/owner is not responsible directly or indirectly of such conversion.

Indicator	FMU level verifier	Other sources of information	Guidance	Scoring and Notes
10.9.1 Plantation shall not be established on land converted from natural forest since November 1994, unless clear evidence exist that the current manager/owner was not responsible.	1. Evidence of previous land use 2. Date of plantation establishment 3. Field visits	Discussions with other stakeholders.		
10.9.2 Where conversions after November 1994 have occurred, steps shall be taken that convincingly compensate for such conversions based on interviews or other evidence gathered from other stakeholders and interested parties	1. Evidence of compensating activities 2. Field visit	Discussions with other stakeholders and interested parties		

## Annex 1

### List of relevant laws, administrative requirements and relevant documents

- Forest and Wildlife Policy 1994
  - Timber Resource Management Act 1997
  - Timber Resource Management Amendment Act, 2002 Act 617
  - Timber Resources Management Regulation of 1998, LI 1649 and (Amendment) LI 1721 of 2003
  - Wildlife Conservation Regulations 1971 LI 685 and its amendments of 1983 L.I 1284; 1988 L. I 1357; 1989 L. I 1452
  - Forestry Commission Act 1999
  - Trees and Timber Amendment Act 493 1997
  - Companies Code 1963 and/or Incorporated Private partnerships Act 1962
  - Provincial ordinances
  - Investment Act
  - Environmental Health Act
  - National Health and Safety Regulations
  - Labour Act 651 of 2003
  - Foreign Exchange Act 2006 (Act 723)
  - Free Zones Act, 1995 (Act 504)
  - Free Zones Amendment, Act 2002 (Act 618)
  - Competitive Bidding for Timber Utilisation Contract Procedures Manual
  - Manual of Procedures Sections A, B C, D, E, G
  - Plantation Manual of Procedures A, B and
  - Status Report on Collaborative Management Practices in the High Forest Zone' and Developments and Setbacks in Forest Conservation', by Kofi Smith
  - Environmental Management Plan - EPA 490/94
  - Environmental Protection Agency (EPA) Sector-Specific Environmental Impact Assessment Guidelines for Forest and Wood Industries.
    - Forest Protection in Ghana by Hawthorne and Abu-Juam
- (details Genetic heat index and the star system in Ghana)
- National Forest Inventory of 1984-9 (provides baseline data about the FMU as well as the national status of the forest resource)
  - FSC list of prohibited pesticides (<http://www.fsc.org>)
  - An Interpretation of Global HCVF Toolkit for use in Ghana. Tim Rayden et al, 2006
  - Ecological Profile of Ghanaian Forest Tree. Hawthorne. OFI TFP 29
  - FAO model of forest harvesting practice, FAO, 1996
  - **National Wildfire Management Policy 2006.**
  - The Ghana National Fire Service Act, 1997
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## Annex 2

### List of relevant International Agreements and Conventions

1. Convention on International Trade in Endangered Species (CITES)
2. Convention on Biological Diversity (CBD)
3. International Tropical Timber Agreement (ITTA)
4. Ramsar Convention
5. International Conventions on Climate Change and Desertification
6. ILO Conventions:  
<http://www.ilo.org/public/english/regi/eurpro/london/country/>
7. 29 Forced Labour Convention, 1930.
8. 87 Freedom of Association and Protection of the Right to Organise Conventions, 1948.
9. 97 Migration for Employment (Revised) Convention, 1949.
10. 98 Right to Organise and Collective Bargaining Convention, 1949.
11. 100 Equal Remuneration Convention, 1951.
12. 105 Abolition of Forced Labour Convention, 1957.
13. 111 Discrimination (Occupation and Employment) Convention, 1958.
14. 131 Minimum Wage Fixing Convention, 1970.
15. 138 Minimum Age Convention, 1973.
16. 182 Worst Forms of Child Labour Convention, 1999.
17. ILO Code of Practice on Safety and Health in Forestry Work (ILO 1998)
18. Recommendation 135 Minimum Wage Fixing Recommendation, 1970.

19. Note: Conventions number 29, 87, 98, 100, 105, 111, 138 and 182 are Core Standards covered by the 1998 ILO Declaration on Fundamental Principles and Rights at Work and its follow up



**Annex 3**

**List of, endangered timber species in Ghana (refer to as restricted timber species)**

Local Name	Trade Name	Botanical Name
Edinam	Gedu-Nohor	Entandophragma angolense
Penkwa	Sapele	E. Cylindricum
Efobrodewo	Utile	E. Utile
Penkwa-akoa	Candollei	E. Candollei
Krumben	Mahogany	Kaya anthotheca/grandifolia
Dubine	Mahogany	K. Ivorensis
Odum	Iroko	Millicia excels/regia
Kusia	Opepe	Nauclea diderichii
Kokrodua	Afromosia	Pericopsis elata
Baku	Makore	Tieghemella heckeli
Hyedua	Black Hyedua	Guibotea ehii

Annex 4

Red list Fauna Species – Ghana



Ghana river frog (*Phrynobatrachus ghanensis*)



Bare-headed rockfowl (*Picathartes gymnocephalus*)



Geoffroy's black-and-white colobus (*Colobus vellerosus*)



Greater spotted eagle (*Aquila clanga*)



Ferruginous duck (*Aythya nyroca*)



Bobiri reed frog (*Hyperolius bobirensis*)



Ukami reed frog (*Hyperolius torrentis*)



Schiotz's reed frog (*Hyperolius laurenti*)



Togo slippery frog (*Conraua derooi*)



Stream reed frog (*Hyperolius viridigulosus*)



Red colobus (*Piliocolobus badius*)



African teak (*Pericopsis elata*)



Dwarf crocodile (*Osteolaemus tetrapis*)



Sitatunga (*Tragelaphus speki*)



Shortfin mako (*Isurus oxyrinchus*)

Source: [www.arkive.org](http://www.arkive.org)

## **ANNEX 5**

### **Definitions**

SLIMF (1) These are natural forests of not more than 1000ha. Management is generally without the use of heavy equipments (less than the horse power of a CAT D6 machine) for harvesting. Production is largely processed in-situ and the rate of harvest shall not be more than 20% of the Mean Annual Increment and maximum annual total volume of less than 5,000m<sup>3</sup>

SLIMF (2) These are non Timber Utilisation Contracts (TUCs) of plantations of not more than 100ha

### **Explanatory notes**

Reasonable efforts (4.5.1). This shall include the existence of mechanism for avoiding loss or damage and managers documented operational procedures

## ANNEX 6

### PLANTATION DEFINITION IN GHANA

#### 1.0 What is a forest plantation in Ghana?

A forest plantation in Ghana refers to any forest stand which has been established by planting or sowing either indigenous or exotic timber species in the process of afforestation or reforestation. This requires that forest plantations in both instances are established artificially with single or mixed species. Such forest stands are intensively managed, and are characterized by uniform planting densities, even age classes occupying a minimum area of 0.5ha. Forest plantations in Ghana fall under one of the following ownership: state, private, communal and individual and may be registered or unregistered with the Forestry Commission. Forest plantations are found in and outside the forest reserves.

#### 2.0 Land for Plantations in Ghana

Lands on which forest plantations are established are acquired from stool/skin lands which are governed by customary and traditional land tenure rights. The 1999 National Land Policy recognises all traditional sources of land tenure rights as legitimate land titles protected by the law and other constitutional provisions such as freehold, leasehold under tenancy agreements. The 1999 National Land Policy provides a framework for access to land by all Ghanaian as well as foreign investors for forest plantations development. Leaseholds may be granted for a maximum duration of 49 years and are renewable

#### 3.0 Policy statement on Plantations

The 1994 Forest and Wildlife policy states the overall aim of forest resource management to be “conservation and sustainable development of the nation forest and wildlife resources for maintenance of environmental quality and the perpetual flow of optimum benefits to all segments of society”. With respect to plantations, section 5.3.8 of the policy prescribes the “promotion of resource development programmes aimed at reforesting suitable harvested sites, rehabilitating degraded mining areas, afforesting denuded lands, regenerating desired wildlife species and habitats and sustainably developing wildlife potential “

For the implementation of policy, the 1994 Forest and Wildlife policy emphasised on collaborative forestry management through increased involvement of farming communities and other stakeholders living around the forest reserves as partners both in managing and deriving benefits from the forest. In addition, the policy called for institutional reforms and deregulation with the view of creating an enabling environment for private sector investment in the forestry sector.

#### 4.0 Classification of forest plantations

The National Forest Plantation Development Programme (NFPDP) classifies plantation development in forest reserves as following: small scale < 250 ha, medium scale 250 ≥ and < 1000ha, large scale ≥ 1000 ha (NFPDP Annual Report 2008) This classification applies also to industrial / commercial plantations outside the forest reserves.

#### 4.1 Large and medium scale plantation developers

The large and medium scale industrial plantations are owned mostly by the Government and private companies. As investment companies they are established as registered companies under the laws of Ghana. For field operations, the medium and large scale plantation developers employ permanent or casual labour under existing contractual arrangements prescribed under the Ghana Labour laws (Act 651). In addition, these companies are required to undertake corporate social responsibilities in the fringing communities.

#### 4.2 Small scale plantation developers

The small scale plantation developers comprise peasant farmers, tree grower associations, local communities, schools and NGOs who operate farm forestry plantation or woodlot holdings outside the forest reserves throughout the country.

## **5.0 Types of plantations**

### **5.1 Taungya plantations**

The early forest plantations by Forestry Commission and some private companies were established with the taungya system which allowed food crops and timber to be grown on the same piece of land. Under the system, farmers are assigned a parcel of land ranging from 0.5 ha -1 ha to produce food crops for themselves while tending intercropped timber trees till canopy closure in 3 years. The Forest Commission is responsible for demarcation, pegging, planting, bush fire control and harvesting. Farmers have no share in the revenues from the mature trees and are not required to maintain the stand after tree canopy closure. The timber species used in the system are: *Tectona grandis*, *Cedrella odorata*, *Gmelina arborea* and *Terminalia spp.*, *Entadrophragma spp.*

### **5.2 The small holder scheme**

Under the scheme, the company prepares the land and farmers are given 1 – 2 ha plot of land to plant with approved planting materials. Field officers supervise the planting and ensure that the farmers carry out prescribed cultural operations according to schedules. Work on the plots is regulated to ensure that the farmers spend fixed hours on the plots daily.

### **5.3 The Out - grower scheme**

Various out-grower schemes aimed at amelioration of the environment through tree planting on marginal lands are practised by some private companies undertaking large scale plantations. Under the scheme, the company establishes an agreement with farmers and landowners respectively for growing timber trees on marginal lands. Farmers are supplied with planting materials by the company and extension officers conduct follow-up visits to assist farmers in best plantation practices. The condition attached to the scheme is that the mature trees are sold to the company at prevailing market price.

Both indigenous and exotic species are used and include the following: *Triplochiton scleroxylon*, *Terminalia superba*, *Khaya ivorensis*, *Lovoa trichiloides*, *Nauclea diderrichii*, *Lophira alata*, *Mansonia altissima*, *Tectona grandis*, *Gmelina arborea* and *Teighmella heckellii*.

## **6.0 The National Forest Plantation Development Programme (NFPDP)**

The NFPDP was launched in 2001 by the Government. NFPDP employed 3 strategies for the implementation of the programme. These are:

### **6.1 Modified Taungya System (MTS)**

Under the MTS the FC enters into partnership with farmers under a benefit sharing scheme. FC allocates land, undertakes survey, demarcation, supply of seedlings and provision of extension services. The farmer provides the following services, site clearing, pegging, planting and undertakes the responsibility of stand maintenance and fire protection at his own cost throughout the rotation of the stand. The prescribed benefit sharing at the end of rotation is as following: Forestry Commission (40%), farmer (40%), landowner (15%) and community (5%). The timber species used in the system include *Terminalia spp.*, *Triplochiton scleroxylon*, *Entandrophragma spp.*, *Tectona grandis* and *Cedrella odorata*.

### **6.2 Industrial plantation (HIPIC Plantation)**

These plantations have been established with HIPC funds under the NFPDP. The plantations are owned by the government and the respective landowners who are entitled to royalty payment.

Under the HIPIC plantation, hired labour and salaried supervisors are employed to establish and maintain the plantation. The plantation Division of FC monitors field operations and exercises oversight functions to ensure compliance with quality standards for plantation establishment. The timber species used in the system include *Terminalia spp.*, *Triplochiton scleroxylon*, *Entandrophragma spp.*, *Tectona grandis* and *Cedrella odorata*.

### **6.3 Private plantation**

This involves the allocation of degraded forest reserve to private companies for reforestation. Interested companies should be registered and present a business plan for the reforestation programme. The private investor earns 90% of the proceeds while the Forestry Commission, Landowner and community earn 2%, 6% and 2% respectively.