

**KEY STANDARDS  
FOR  
LOGGING IN THE HIGH FOREST ZONE  
OF GHANA**

**ISSUED BY  
THE FOREST SERVICE OF GHANA**

# **KEY STANDARDS FOR LOGGING IN THE HIGH FOREST ZONE OF GHANA**

## **PLANNING PROCESS**

### **On-Reserve**

Forest will have been zoned into production and protection areas. Logging is only permitted in the Timber Production Areas.

#### *Protection Zones:*

Hill Sanctuaries - all land above 30% slope

Swamp Sanctuaries - permanent wet areas

Special Biological Protection Areas - high scientific interest

Provenance Protection Areas - rich in commercial species

Fauna Protection Areas - good habitat for animal life

Cultural Sites

Fire Buffer Zones - protected areas to stop spread of fire

Shelterbelts - narrow areas not suitable for logging

Convalescence Areas - stocking too low for productive logging

These areas will be marked on base maps and areas of timber production area made clear.

The Timber Production Area is divided into compartments of approx., size 1,600 x 800 metre

#### Applying for TUC

Application Form CV1 - initial registration as acceptable company

Application Form CV2 - application for specific TUC area

Form to be accompanied by TUC Area Plan

#### Plans

TUC Area Plan - outline of operations for entire contract period, updated every 5 years

TUC Operational Plan - details of operations for 5 year period

Compartment Plan - prepared for every compartment

**SUMMARY OF MAIN COMPONENTS OF  
A COMPARTMENT PLAN**

- 1. ROAD AND TRACK CONSTRUCTION CLEARLY DEFINED ON THE CONTOURED MAP AT SCALE OF 1:10,000 OR BETTER.**
- 2. BRIDGES AND MAIN CULVERTS**
- 3. LOCATION OF AREAS WHERE SOIL EROSION CONTROL NEEDED**
- 4. LOCATION OF PROPOSED LOG DUMPS**
- 5. STREAMS AND AREAS OF COARSE GRAINED PROTECTION**

Stock Surveys

On-reserve, each compartment will require a 100% stock survey carried out by the Forest Service or under their direction. Surveys will provide:-

- location of all commercial species over 50 cm diameter
- special or protected tree species
- environmentally sensitive areas that have to be excluded from the harvest.

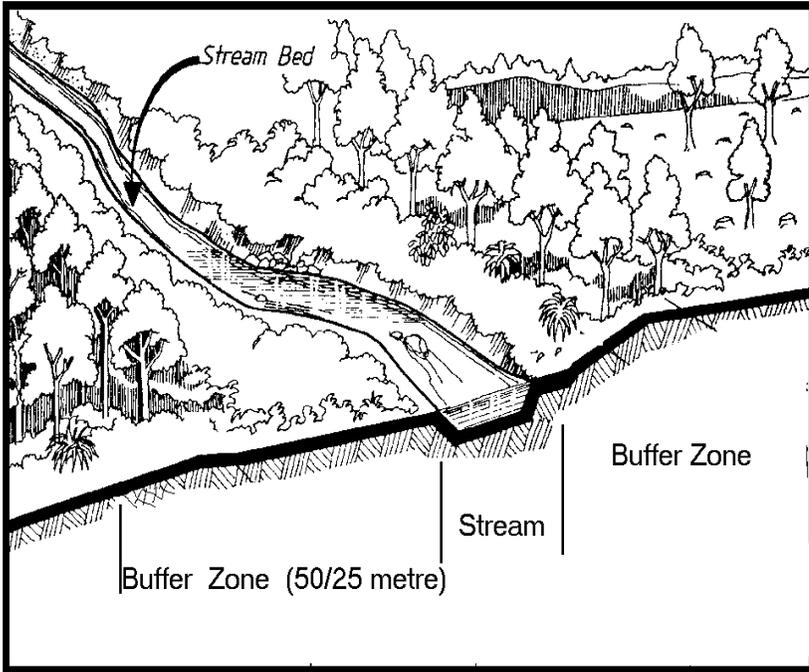
All stock trees assessed are mapped at 1:2,500 scale and all trees approved for cutting are shown on separate yield map also at 1:2,500 scale.

***Logging is not allowed:-***

1. Within the 50 metre buffer zone of major streams (mapped on 1:50,000 sheets)
2. Within the 25 metre buffer zone along smaller water courses
3. Felling normally not allowed on slopes above 20% (special approval needed for felling on slopes of 20-30%). No felling on slopes above 30%.
4. No harvesting within degraded forest (condition class 5 and 6)
5. No harvesting in rocky or swampy sites
6. No felling within 100 metre of certain Black Star species

7. No more than 3 trees per ha can be felled at any one time, reduced to 2 trees per ha in the drier areas where growth is reduced.
8. No felling within a 50 metre buffer zone adjacent to a protection zone marked on the forest reserve map.
9. No trees below the minimum diameter for the species

These areas are identified on the stock maps. The buffer zones should also be marked on the compartment map.



## Buffer Zones

### Off-reserve

Application for TUC off- reserve to be made using Form CV2 plus TUC (Five Year) Operational Plan

### Plans and Forms

- TUC Operational Plan for five year period
- Pre-felling Inspection of trees using Form CO2
- Preparation of Annual Logging Plan
- Followed by endorsement of the plan and issue of felling permit (Form CO3)

**Pre-felling Inspection** There is not a 100% stock survey off-reserve, but all trees that the logger intends to fell must be inspected by Forest Service plus representatives of the land owners. Inspection recorded on Form CO2. Approval (felling permit) Form CO3 issued against the Annual Plan.

Logging restrictions as for on-reserve (including the same diameter limits of species groups).

### **The Annual Logging Plan**

The Plan should detail:

- the number of trees to be removed (on the basis of the pre-felling inspection)
- road construction details
- approval of the landowners to the construction and felling activities.

The attachment of a map should be prepared at a minimum scale of 1:25,000 to show:-

- boundary of current annual programme
- all water courses
- any cultural sites or areas to be avoided
- proposed road plan
- existing roads
- proposed bridges and culverts
- skid track location
- log yard location
- protected areas

The Annual Logging Operations Plan will also include a total tally of those trees requested for felling within the annual coupe. and will be subject to pre-felling inspection before the Annual Plan can be approved.

## Roads

The following roading specifications apply:-

	Unit	Roading specifications		
		Main	Feeder	Spur
Cleared width	m	20	15	10
Carriage width	m	6	4.5	3.5
Min. surface depth	cm	10	10	as required
Max. gradient	%	10	12	14
Max. adverse gradient	%	6	8	8
Min. distance from small streams	m	25	25	25
Min. distance from rivers	m	50	50	50
Mini. interval for drains (road gradient 20%)	m	50	50	50
(road gradient 10% or less)	m	100	100	100

## Forest Roads

- All new roads to be shown on map with the compartment or annual operations plan. Maps should be enlargements of Survey of Ghana contoured maps and therefore capable of demonstrating that alignment will not exceed permitted slope.
- Roads should be pegged out prior to operations
- All water courses and drains to be kept cleared

## Skid Tracks

- Major skid tracks should be routed along ridges and marked out before operations.
- Any tree above 15 cm in the skid track alignment should be sawn - not pushed over, to avoid soil disturbance
- Minimise soil disturbance during extraction by lifting front end of log and using winch on slopes more than 20%.
- Skidding to stop in very wet conditions if site being damaged

## Log Yards

- Must be located at least 50 m from streams
- They should be less than 2,500 m<sup>2</sup> in area
- Aim to minimise skidding distance
- Keep total number to maximum of 4 per compartment (130 ha)
- All logs to be removed before compartment closure
- Rubbish removed and area ripped

## Felling Techniques

- Check workers have basic safety equipment - no one without full training must be allowed to use a chainsaw
- Clear undergrowth and climbers away from the tree base before operation



- Think about the felling direction:-

Avoid damage to remaining trees

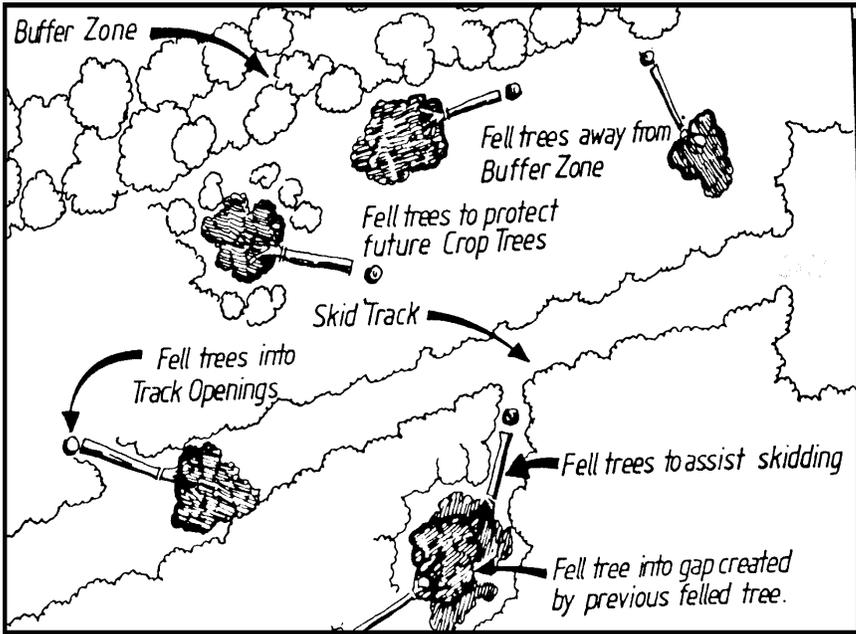
Fell away from buffer zones

Fell into gaps

Fell to assist skidding with butt or top towards skid track

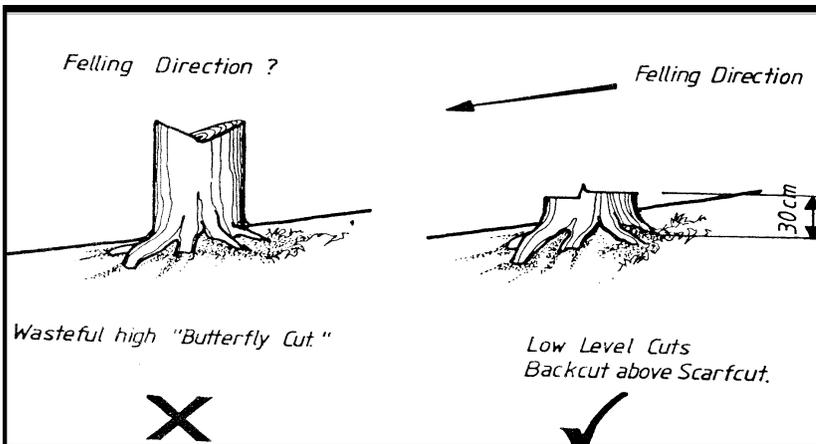
wedges to help in directional felling

Use



Check that the tree is marked for felling - felling unmarked trees is an illegal act and will result in heavy penalties

- Avoid waste:-
- Cut low, stump height should be 30 cm in sound trees
  - Use level cuts with backcut above the forward scarf cut



**After Felling** Tree volume to be measured under the direction of the technical officer from the Forest Service. Use to be made of Tree Information Form

Ensure that tree identification number is painted on the stump

After cross-cutting, all logs to be painted with the tree identification code and the log number

Timber concessionaire responsible for measuring the volume of the logs after cross-cutting making use of the Log Information Forms

**Log Marking** Logs are to be marked as soon as they are cut from the felled tree and before they are extracted. The tree stump is to be marked at the same time in a similar manner. All logs must be marked clearly on both ends with white waterproof paint. Letters and numbers must be at least 6 centimetres high and 1½ centimetres wide.

Every log must be marked with:

- the species code
- the locality mark
- the Contractor's tree number which is a sequential number beginning with 1, which is the number of trees felled since registration of the Contractor's Property Mark;
- the log number which is the number of the log cut from the tree; log number 1 is the butt log;
- the Contractor's Property Mark.
- Logs from within forest reserves must also be marked with:
  - the reserve code
  - the number of the compartment from which the tree was felled;
  - the stock survey number allocated to the tree by the Forest Service..

Logs from off-reserve areas must also be marked with:

- the code "OFR";

**Organisation of Logging** Logging should be carried out systematically through the compartment. Contractors will not be allowed to keep returning to

compartments once they have logged the area. After the compartment has been logged the contractor may move into the next compartment but he will not be able to move into the third compartment until the first has been closed.

### ***ONLY TWO COMPARTMENTS CAN BE OPEN AT ANY TIME***

Any variation to this rule will have been specified in the timber operational plan and might be extended for companies logging a single compartment in a month or less. Contractors must complete logging in any one compartment in less than 2 years.

## **Compartment Closure**

### Checks Required For Issue Of Completion Certificate

1. All streams and water courses clear of debris
2. All access and skidding tracks follow the agreed alignment and adequate drainage provided.
3. Log yards have been ripped to break up compacted soil.
4. All trees included in the approved yield have been extracted and all fees, royalties and compensation paid.
5. All rubbish removed from the site
6. The conditions of the Timber Operation Specifications have been met - including all aspects of the Social Responsibility Agreement.

## **OTHER RESPONSIBILITIES**

### **1. Protection**

Every contractor is responsible for minimising the danger of fire. During high risk periods the following restrictions must be strictly adhered to:-

- **no smoking**
- **fuelling of vehicles to be carried out in an area where the ground has been cleared of all inflammable material for at least 3 metres**
- **fires for cooking must be only lit where all inflammable material has been removed for at least 3 metre. Such fires must never be left unattended and must be fully extinguished after cooking has been completed.**

It is the duty of all forest contractors to assist the Forest Service in the event of there being a forest fire. On finding an unsupervised fire, logging teams should do their best to extinguish it whilst seeking assistance if necessary. All such fires must be reported, even if brought under control.

## **Protected Areas**

It is the duty of all contractors to respect those areas identified as protection areas on the management maps. Such areas will be clearly marked on the maps accompanying the five year operational plans and the compartment/annual plans. Where such areas are adjacent to timber production areas, the boundaries must be identified and marked on the ground. **No logging is allowed within 50 metre of such areas**

## **2. Social Responsibility Agreements**

The TUC agreement will specify the Timber Operational Specifications (extra rules and restrictions that apply to this particular contract) including the Social Responsibility Agreements (agreements between the land owners and the contractor). These form an integral part of the contract and must be respected:-

### **On-reserve**

- respect for cultural rules such as taboo days
- respect for communities to have right of access to forest to collect products for domestic use
- respect the right to consultation concerning location of logging roads etc.
- respect for local infrastructure (roads, bridges etc.)
- prompt payment of all fees

### **Off-reserve**

- respect for farming operations
- respect for cultural rules
- respect for local rights to non timber forest products
- respect right to consultation during planning of operations
- respect right to receive a share of the revenue from harvesting
- respect for local infrastructure
- need for prompt payment of all fees

