
*the **M**pingo **C**onservation **P**roject*



**MCP Tanzania Community-Managed
Forests FSC Group**

SD07 Procedures for Timber Harvesting

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Contents

INTRODUCTION 3

ROLE OF THE LOGGING SUPERVISOR 4

FELLING PROCEDURES..... 5

TOOLS & EQUIPMENT 6

 Personal Protective Equipment..... 6

 Use of Cutting Tools..... 6

TRAINING 7

SITE MANAGEMENT..... 8

 Waste Minimization 8

LOG EXTRACTION..... 9

Introduction

Logging is amongst the hazardous operations. The major causes of logging hazards are inadequate training, poor working techniques and safety measures.

Due to the inherent danger in felling, bucking, and loading of logs it is crucial we give great considerations and take precautionary steps on health, safety and environment issues during logging operation.

Why have Felling Standards?

- Reduce costs and efficiency losses related to injuries and illnesses.
- Reduce injuries and illnesses in forest operations.
- Promote a cooperative relationship between log cutters and loggers.
- Developing a safety accord that will guide changes in attitude, procedures, and operation, resulting in a new safety culture.
- Compliance to FSC standards for certification which will provide financial incentives for loggers that adopt and operate according to a safe model.
- To minimize wastes hence increasing yield per log.

Overall proper training, planning, felling techniques, safety and common sense will not only ensure safe operation, but will increase the quality of the cut log.

Role of the Logging Supervisor

1. The supervisor **MUST** boss the situation and play his/her role properly by ensuring the cutting operation is carried out according to standards.
2. Should implement the Group's safety and efficiency standards for timber harvesting, through the use of safe and appropriate equipment for harvesting operations. At all times the Logging Supervisor should adopt a safety first approach.
3. The supervisor should ensure that cutters receive information on safety and efficiency standards, procedures and requirements and satisfy himself that the information is well understood prior to felling.
4. Should ensure maintenance and proper use of working tools, including setting saws correctly before use.
5. Ensure that work is planned, organized and carried out in such a way as to minimize the risk of accidents and the exposure of cutters to conditions that may lead to personal injury or damage to their health.
6. Assess the need for additional instruction, training or further education of workers by monitoring compliance with safety and efficiency standards for timber harvesting
7. Must take appropriate actions immediately such as instructing cutters what to do, giving strong warnings, directing them to wear appropriate safety gears, give an order to keep a required minimum distance from felling zone etc should he/she observe no-compliance with these standards by a cutter under his supervision.
8. The supervisor should verify:
 - (a) Compliance with safety and efficiency standards for timber harvesting as set out in this document.
 - (b) Maintenance of safe working methods and techniques.
 - (c) The use of personal protective equipment.
 - (d) Care of tools and equipments.
 - (e) A first aid kit is present during logging operations.
 - (f) Complete Form *SF08 Safe Timber Harvesting Checklist*.

Becoming a Logging Supervisor

In order to become an Approved Logging Supervisor, someone must have been trained in:

- Safe Directional Felling procedures as set out in this document
- Use of cutting tools and saw-doctoring
- First Aid
- Self-assertion in a logging context

The culmination of this training shall be a role-play based test in which the ability of the candidate to spot safety infractions during tree felling and take remedial action will be checked.

Felling Procedures

Efficient felling will be achieved by following proper felling techniques. In order to minimize wastes, reducing injury incidences, avoid splits and checks which may appear during felling exercise, several factors should be considered before felling a tree. The following harvesting procedures should be followed;

1. All logging operations **MUST** be supervised by a trained and approved Logging Supervisor.
2. The logging supervisor should complete *Form SF08 Safe Harvesting Checklist* and cross check if all requirements under the checklist have been met. (In case one requirement not fulfilled harvesting will not be allowed)
3. All cutting tools should be checked if they are in good order by the logging supervisor prior to harvesting.
4. Directional Felling, as described below, should be used at all times when logging in Group Certified forests and must be pre-planned, taking into account the direction and speed of the wind.
5. When the wind is too strong to allow safe directional felling, felling operations should not be undertaken.
6. Each tree will be checked for lean, limbs, shape, crook, butt defects and dead, lodged limbs
7. People not involved in the cutting operation should stay away from the felling zone at a distance equal to at least twice the tree length being felled.
8. Observations and allowance will be made for hazards in surrounding trees which may be triggered by the tree being felled
9. An escape path at a rough 45-degree angle in the opposite direction to the planned direction of tree fall will be planned and cleared.
10. Fellers should assure that they are able to maintain a balanced position.
11. The place to keep tools should will be recognised before felling, tools should be on right or left hand and clearly visible so people do not accidentally run over them.
12. The area around the tree will be cleared and be free from bush and other obstacles such as stones before starting felling.
13. A proper main felling cut or back cut on all trees regardless of size will be made on the direction of fall and an undercut on the opposite direction of tree fall.
14. Felling notch should be used in some cases when needed and be maintained as low as possible depending on the nature of the stem, if the stem for the tree to be felled is cylindrical the notch should be maintained as low as possible and if the stem is buttressed the notch should be maintained at the end of the buttress.
15. A standing tree will not be cut completely through in one continuous cut. A sufficient hinge of wood will be left between the undercut and the felling cut. This helps to reduce tree kickback and to maintain control of the direction of tree fall.
16. Wedges will be used when necessary to aid the direction of the fall. They should be placed right at the foot of the tree for instant access should the cross-sawyers need them.
17. The logging supervisor should **SHOUT** loudly as the tree is about to fall to alert people nearby.
18. During de-branching cutters should work on the other side of the log.

Tools & Equipment

Personal Protective Equipment

Proper personal protective equipment shall be provided for use by the entire cutting crew. At a minimum this will comprise gumboots, helmets, dust mask and hand gloves.

- The logging supervisor should ensure personal protective equipments are properly worn.
- Persons not wearing the prescribed personal protective equipment shall be forbidden from entering the felling zone around a tree.

Use of Cutting Tools

Cutting tools to be used during logging operations are two man cross cut saws for felling & crosscutting, hammers, pangas and axes for de-branching . Other hand held tools to be used during harvesting operations are files, wedges, pangas, hammers and loppers.

1. Chain saws will not be used within Group Certificate forests.
2. Tools shall be used only for the purposes for which they were designed.
3. Each tool shall be inspected by logging supervisor and any deficiency corrected prior to use.
4. The cutting edges of tool shall be kept sharp and properly shaped.
5. Heads of hammers, wedges and sharp tools shall be dressed or ground to a suitable radius when they become mushroomed or cracked.
6. Hand-held files shall be equipped with a handle.
7. All tools shall be shielded or otherwise protected during storage, transport and when otherwise not in use to prevent injuries, e.g. the blade of a cross-cut saw should be shielded using a split bamboo stick.
8. All metal burring should be removed, that is any tiny pieces of metal which comes out as a result of worn out should be cleaned of the tools.
9. The axe should be kept well-honed and the axe head securely fastened to the handle.
10. The tool handles shall be clean and free of cracks or splits.
11. Cross-cut saws should be set properly by the Logging Supervisor or another qualified saw setter before use.
12. During use, cross-cut saws should be kept straight, and only pulled, not pushed.

Training

In an operation as inherently hazardous as logging training of workers is vital.

1. Basic training will be provided regularly to the felling crew in all forest operations, including proper use of hand held tools.
2. Training of all cutters will be done before starting of the logging season and on regular intervals.
3. Training materials have to be documented and kept for reference whenever required. Certificate of attendance will be given to all trainees to show them they have completed the training.
4. Training will be carried out through formal programmes in classrooms with field trips, practical testing and on the job instruction.
5. Training will be conducted by a competent experienced staff from MCP or elsewhere.
6. The logging supervisors will be well trained on how to use the equipment and how to carry out simple maintenance such as sharpening. Training on saw doctoring will be given by an experienced saw miller.

See the section above on the Role of Logging Supervisors for details of the training required to become an approved logging supervisor.

Site Management

1. Access of unauthorized persons to felling zones is strictly forbidden. The access zone is determined by a minimum distance of two tree lengths.
2. A special place for resting will be available where the first aid kit will be kept together with other things like food items and drinking water.
3. All containers used at the harvesting sites have to be labelled to indicate the contents in them. (e.g. drinking water, washing water etc).
4. Any fire be it for cooking or boiling water must be in a clean and controlled area and put off thoroughly after use.
5. Waste should not be disposed inside the forest, all leftovers should be taken out of the forest and properly disposed off.
6. Washing directly in the river or streams should not take place.
7. No wastes should be dumped in streams or rivers.
8. Any highly flammable substances, especially fuel should be stored outside the forest.
9. Refuelling of vehicles is strictly forbidden inside the VLFRs.

Waste Minimization

As noted above the felling notch should be as low to the ground as possible so that the height of the stump is minimized and the maximum amount of timber realised from the tree.

After trees have been felled, branches will not be left in the forest. Taking branches out of the forest reduces amount of wastes, reduces fire incidences as the dry matter left from branches act as fuel during fire outbreak. While the use of branches minimizes wastes, at the same time maximises profit to loggers as they are sold using the same licence. Mpingo branches not wanted by the sawmill can be sold to carvers and should be removed from the forest at the same time as the logs.

Log Extraction

Trucks and tractors will be used to extract logs from the forest. However, new road construction in Group Certified forests is subject to Environmental Impact Assessment. Thus the use of trucks and tractors will be constrained by existing vegetation and the lie of the land. Some minor clearance of bushes and saplings shall be acceptable so long as large trees are not felled and the area of bushes cleared is reasonably small. Any significant felling of woody vegetation above 10cm DBH shall be considered road construction.

It shall be forbidden to drive a truck or tractor across or up a watercourse or Hazard Land except where there is a pre-existing track; such tracks may only be used when dry. All vehicles must deviate around areas of special cultural significance if their route takes them that way. Log extraction is also prohibited when soils are water logged.

Thus the truck or tractor should be driven as close to the felling site as is possible within these constraints. From the felling site to the truck or tractor, logs will need to be skidded manually. Skidding should not take the shortest possible route, but instead follow a path of least resistance which will cause the minimal damage to surrounding vegetation, and avoiding any damage to the banks of water courses.

Justification

The above guidance is based on expert opinion that damage incurred from clearing a new track will normally outweigh the small amount of damage of using an existing track along which water flows. There is also the challenge that where a track goes up or down a slope, it may become an ephemeral water course after being cleared; that is to say it may not be possible to establish tracks which do not in time go on to become water courses.