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## **PLANTATION SAFETY MANUAL**

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**Prepared By**

**Plantation Department, TNPL, Karur**



## TAMIL NADU NEWSPRINT AND PAPERS LIMITED

### **SAFETY REGULATIONS FOR PLANTATION OPERATIONS**

**This Safety Manual is Prepared based on ILO Code of Practice on Safety and Health in Forestry Work. The applicable elements of this ILO code is considered and this Plantation safety manual prepared accordingly to meet their compliances.**

TNPL is complying all the applicable laws of Tamil Nadu and India related to industries, plantations, environment, workers health & safety, labourers, Insurance, societal development, etc., In line with this TNPL also developed its own health & safety policy for its operations.

**The work instructions for TNPL officials, contractors and workers are as follows:**

#### **Responsibilities and Duties of Field Officials:**

- Field officials should monitor compliance with and enforce all relevant laws and regulations at the workplace.
- Field Officials should aim to support the employers' and workers' own measures to improve levels of occupational safety and health.
- Field Officials should be familiar with the special problems associated with harvesting while moving from one place to other and able to provide support and advice accordingly.
- Field Officials should periodically carry out worksite inspections, ideally in the presence of the employers' and workers' representatives.
- Field Officials should advise employers and their workers on the safe performance of activities, particularly on the choice and use of safe working methods and appropriate personal protective equipment.
- If any irregularities notified should be intimated to the personnel concerned so that any remedial action might be promptly introduced.
- Field Officials should initiate and maintain a safety culture in the enterprise, including a system of moral and material rewards and incentives for all personnel involved.
- When using contractors, the field officials should ensure that:
  - (a) The same safety and training requirements apply to the contractors and their workers as to the workers in the enterprise;
  - (b) Where required, only such contractors are used that have been duly registered

- (c) Contracts specifying the safety and health requirements as well as sanctions and penalties in case of non-compliance. Contracts includes the right for supervisors mandated by the commissioning party to stop work whenever a risk of serious injury is apparent and to suspend operations until the necessary remedies have been put in place;
- (d) Contractors who repeatedly violate their contractual obligations will be excluded from future bidding.
- The sufficiently educated and trained labourers to be assigned in the tasks
  - They must know the hazards connected if any related to plantation as well as harvesting operations
  - Field officials should establish and maintain records on occupational accidents and diseases

### **Responsibilities and Duties of Management**

- Implement the TNPL's safety and health policy, including through the selection of safe equipment, work methods and work organization and the maintenance of high levels of skill. Should endeavor to reduce risks and hazards to safety and health in the activities for which they are responsible to as low a level as possible.
- Should ensure that workers and contractors receive adequate information on safety and health regulations, policies, procedures and requirements in accordance with Chapter 4 of ILO code and satisfy themselves that this information is understood.
- In consultation with workers, they should assess the need for additional instruction, training or further education of workers by monitoring compliance with safety requirements.
- They should verify:
  - (a) compliance with safety regulations;
  - (b) maintenance of safe working techniques;
  - (c) use and care taken of personal protective equipment;
  - (d) care taken of tools, machines and equipment, particularly any devices which are provided in the interest of safety.
- Managers should identify the risks if any in their operating areas

### **Responsibilities and Duties of Contractors**

- Contractors employing workers should be regarded as employers for the purposes of this code.
- Contractors and their workers should be required to hold appropriate skills in their areas.
- Contractors should comply with all laws and regulations concerning terms of employment, workers' compensation, labour inspection and occupational safety and health.

- Contractors should be aware of and operate according to the commissioning TNPL's policies and strategies for the promotion of safety and health and should comply and cooperate with related measures and requirements.

**Rights and Responsibilities of Workers:**

- All workers should cooperate closely with employers to promote safety and health.
- Workers or their representatives have the right and duty to participate in all safety- and health-related matters, particularly by participating in safety and health training
- Workers have the right to obtain proper and comprehensive information from their employer regarding safety and health risks and measures relating to their functions
- Workers should take reasonable care of their own safety and health and that of other persons who may be affected by their acts or omissions at work.
- Workers should comply with all prescribed safety and health measures.
- Workers should make proper use and take good care of all personal protective equipment and clothing.
- Workers can report any accident or injury to health which arises in the course of or in connection with work to the supervisor or Field officials.
- If workers believe that measures for safety and health protection provided by their contractor are insufficient or inappropriate, such workers and their representatives have the right to bring this to the attention of TNPL

**TNPL's Health and Safety Policy:**

As a basis for safety and health management, TNPL in consultation with the workers concerned, prepared, published and maintaining a policy related to health and safety.

	
<p><b>OCCUPATIONAL HEALTH AND SAFETY (OHS) POLICY</b></p>	<p><b>பணி சார்ந்த சுகாதாரம் மற்றும் பாதுகாப்பு கொள்கை</b></p>
<p>We, at Tamilnadu Newsprint and Papers Limited, are committed to provide Safe and healthy working environment to all our employees as an integral part of business performance, through :</p> <ul style="list-style-type: none"> <li>❖ Communication of OHS issues to all employees and other stakeholders, through safety committee meetings, shop floor discussions and periodic site inspection.</li> <li>❖ Bringing safety performance in the Performance assessment system for all the employees.</li> <li>❖ Ensuring the safety compliance by the contractors, subcontractors, transporters and other agencies entering the premises.</li> <li>❖ Providing a resume of Health and Safety Performance in the annual report.</li> <li>❖ Conducting safety audit and risk assessment periodically to assess the status of OHS issues and taking remedial measures for improvements.</li> <li>❖ Integrating the Health and Safety in all the disciplines, which include operation, maintenance, services, purchase and personnel.</li> <li>❖ Appropriate structured training, retraining of employees including contract workers on OHS issues.</li> </ul>	<p>தமிழ்நாடு செய்தித்தாள் மற்றும் வாரித நிறுவனம் கீழ்க்கண்டவற்றின் மூலம் நனது தொழிலாளர்கள் அனைவருக்கும் பாதுகாப்பு மற்றும் சுகாதாரத்துடன் வழியை வழங்கும் அளவுகளை அளிக்கிறது. உறுதி பூண்டுகள்.</p> <ul style="list-style-type: none"> <li>❖ பாதுகாப்பு குழு கூப்பிட்டு, பணிமிட உட்காட்டல் மற்றும் தினசரி பணிமிட ஆய்வு மூலம் மேற்கண்ட கொள்கையை அனைத்து ஊழியர்கள், மற்ற பங்குதாரர்கள் அனைவருக்கும் தெரிப்படுத்தல்.</li> <li>❖ அனைத்து ஊழியர்களுக்கும் செயல்திறன் மதிப்பீடு முறையில் பாதுகாப்பு செயல்திட்டத்தை கொண்டு வருதல்.</li> <li>❖ ஆலைக்கள் நலமும் அனைத்து ஒப்பந்த மற்றும் துணை ஒப்பந்தக்காரர்கள், ஊழியர்களின் பொருட்களை எடுத்து செல்வோர் மற்றும் கொண்டு வருவோர் மேலும் பிற சேவைக்கு வருபவர்களை பாதுகாப்பு விதிகளை கடைப்பிடிக்க வைத்தல்.</li> <li>❖ ஆண்டு அறிக்கையில் உட்காட்டல் மற்றும் பாதுகாப்பு செயல்திட்டங்களையும் அதன் பலன்களையும் சேர்த்தல்.</li> <li>❖ வெளி நிபுணர்கள் மூலம் ஆலையின் பாதுகாப்பு செயல்திட்டங்களை பாதுகாப்புத் தணிக்கை மற்றும் ஆய்வுமதிப்பீடு வாயிலாக அறிந்து, மாற்று நடவடிக்கைகள் மூலம் மேம்படுத்தல்.</li> <li>❖ உற்பத்தி, பராமரிப்பு, பிறசேவைகள், பொருட்களை வாங்குதல் மற்றும் மனிதவளம் ஆகியவற்றில் பாதுகாப்புக் கொள்கையை ஒட்டுக்கொள்கை.</li> <li>❖ பணிசார்ந்த காதாரம் மற்றும் பாதுகாப்பு செயல்முறைகளை தொழிலாளர்கள் மற்றும் ஒப்பந்த தொழிலாளர்களுக்கு முறையான பயிற்சி மேலும் மறுபயிற்சியை அளித்தல்.</li> </ul>
<p>Issue No : 02 21.12.2018</p> <p style="text-align: center;"> <b>S.SIVASHANMUGARAJA, IAS</b> Managing Director</p>	<p>வெளியீடு எண் : 2 21.12.2018</p> <p style="text-align: center;"> <b>ச. சிவசன் முகர்ஜா IAS, ஆ.அ.</b> மேலாளர்/மேல் இயக்குநர்</p>

## **TNPL Plantation Health and Safety Guidelines & Its Policy:**

### **Responsibilities of Various Levels:**

Start from workers, contractors to TNPL officials all are having responsibilities and duties to maintain the safety and health in their operating areas. As depicted above, the group wise responsibilities given. The DGM (Safety) and CGM (Plantation, R&D) and SO are the top management for coordinating, implementing and maintaining safety and health strategies and to confirm the compliances of all the safety measures mentioned in the safety manual in line with ILO Code of Practice on Safety and Health in Forestry Work.

### **Employment Conditions:**

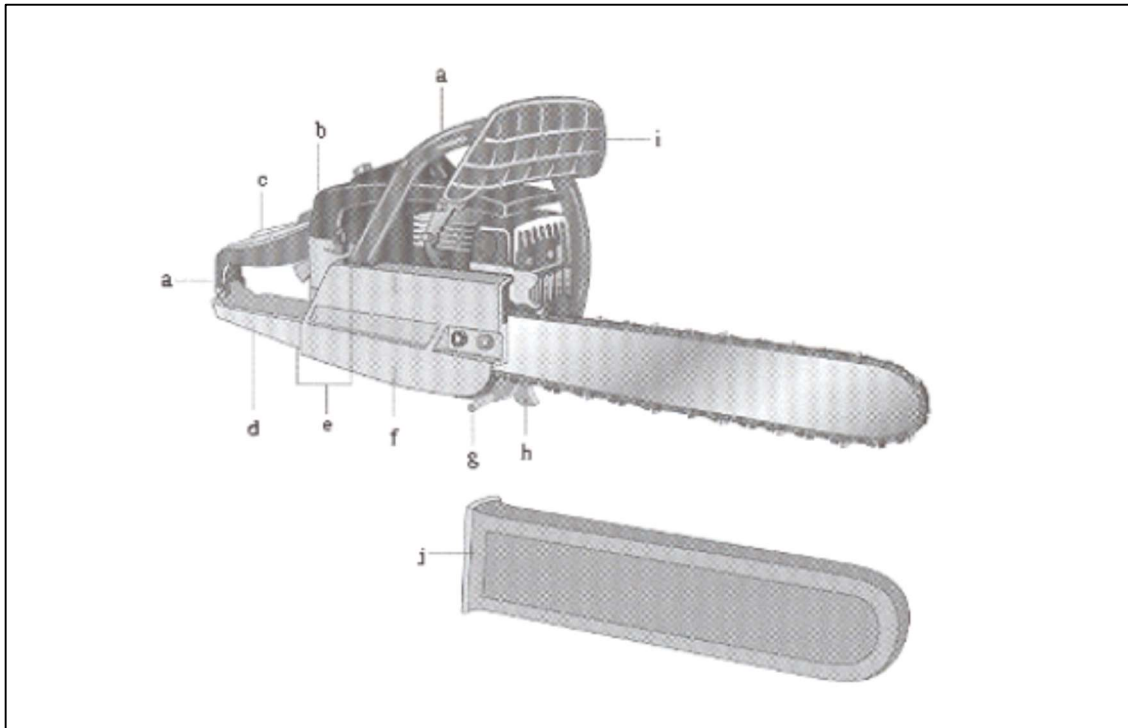
- Working hours of all the workers/employees are not exceed the number prescribed by national laws.
- Working hours are arranged so as to provide adequate periods of rest which include:
  - short breaks during working hours;
  - sufficient breaks for meals;
  - daily or nightly rest;
  - weekly rest.
- No person after drinking drugs will not be allowed for work in their areas
- No person will not perform plantation work if they do not have the required level of skill and knowledge.
- If any new person effective training will be given to them to acquire the require knowledge and skills.

### **Safety requirements for tools and machineries:**

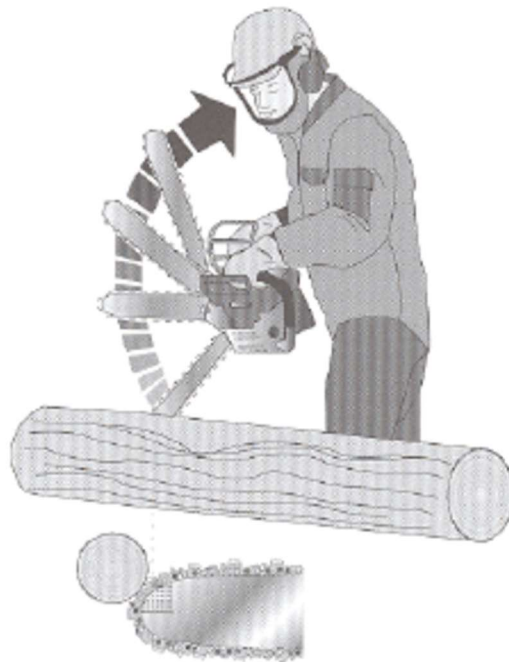
- All tools and machineries used in Plantation operations should be:
  - (a) comply with safety and health requirements as prescribed in standards and recommendations, wherever these are available;
  - (b) be used only for work for which they have been designed or developed, unless a proposed additional use has been assessed by a competent person who has concluded that such use is safe;
  - (c) be used or operated only by workers who have been assessed as competent with appropriate skill

**Chain Saws:**

- Chain-saws should be designed and equipped in accordance with the following provisions; i.e., as illustrated in figure, they may have the followings:
  - (a) separate handles for both hands when wearing gloves;
  - (b) an on/off switch which is reachable with the right hand on the throttle and wearing gloves;
  - (c) a throttle control lock-out which prevents the chain-saw from being started unexpectedly, because two levers have to be pressed simultaneously;
  - (d) a rear handle guard for protection of the right hand;
  - (e) an anti-vibration system, consisting of rubber shock absorbers between the engine block and handles;
  - (f) a chain brake, which is activated manually by the front handle guard and by means of a non-manual mechanism in the case of kick-back;
  - (g) a chain catcher;
  - (h) a spiked bumper, which allows the weight of the saw to rest on the log securely during crosscutting;
  - (i) a front handle guard for protection of the left hand from the chain;
  - (j) a chain guard for avoiding injuries during transport.
- Workers should be provided with a personal protective equipments
- Personal protective equipment should comply with standards.



### Chain-Saw Kick-back



Note: Kick-back is caused by the upper tip of the guide bar being intercepted or accelerated by a stem, branch or other object.



### **Operating a chain-saw**

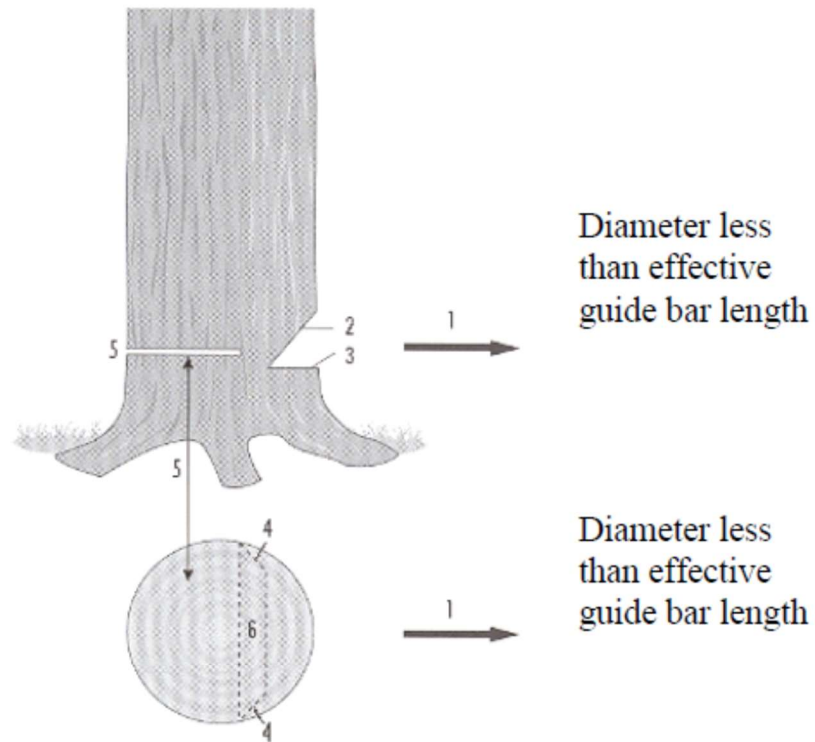
- Workers who are assigned to chain-saw operations should demonstrate their knowledge about and skills in:
  - (a) mandatory safety features on chain-saws;
  - (b) mandatory personal protective equipment;
  - (c) maintenance of motor, chain and guiding bar of the chain-saw;
  - (d) felling and cutting techniques according to the technical guidelines described in the following illustrates of this manual;
  - (e) basic first aid in the event of an accident of a fellow worker.
- To reduce the health hazards arising from chain-saw operations, such as exhaust dusts, noise and vibration, the duration of chain-saw work should be minimized
- Chain-saw operators should be provided with and use the personal protective equipments
- The lightest saw and the shortest guide bar possible should be used.
- Chain-saws should always be kept in a clean condition and effective working order
- The functioning of the chain brake should be tested regularly
- When starting the chain-saw, a safe distance from other persons must be maintained. It should be ensured that the saw chain is clear of obstructions; the saw should be placed on the ground and secured with a foot on the base of the rear handle, or the rear handle should be gripped firmly between the thighs.
- When working with the saw, a firm stance and a close hold of the saw to the body should be kept. Cutting with the tip of the saw should be avoided, as this can cause kick-back as shown in figure. Kick-back is very difficult to control and very hazardous.
- Chain-saws should not be operated above shoulder height because of the risk of kick-back and the resultant backward rotation of the guide bar.
- Chain-saws should always be switched off or the chain brake engaged when moving about.
- When fuelling a chain-saw, a safe distance from all sources of ignition should be maintained. Smoking when fuelling should be strictly prohibited.
- The skilled persons only to be allowed to operate chain-saw.

### **Harvesting:**

Harvesting operations should only be carried out in daylight hours or with adequate lighting and in weather conditions which allow good visibility. When the wind is too strong to allow safe directional felling, felling operations should not be undertaken.

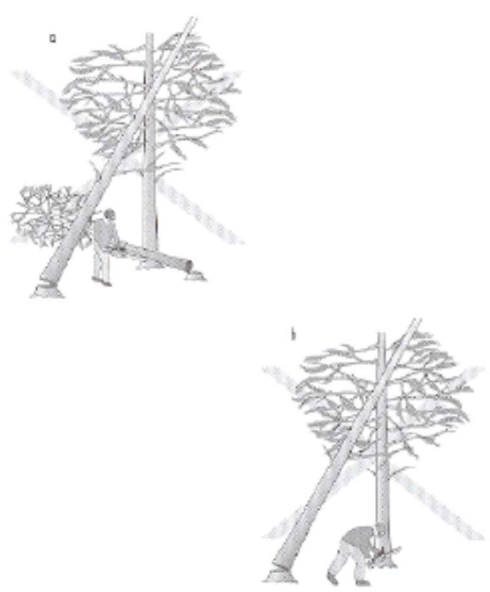


Standard technique for tree felling

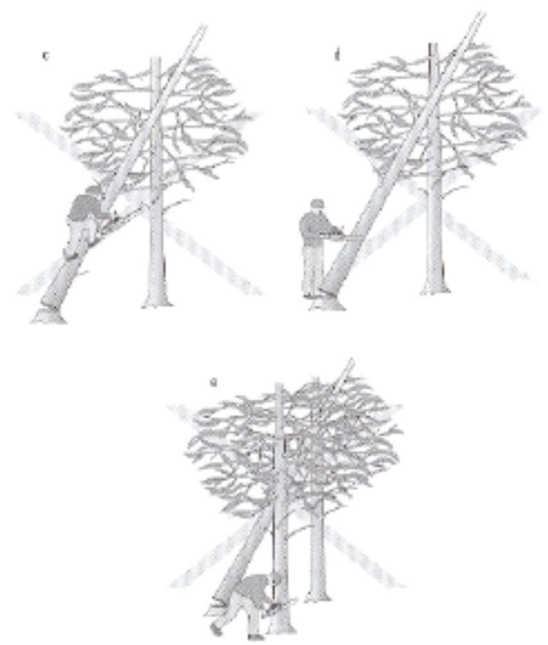


- ① Felling direction
- ② Top scarf cut
- ③ Bottom scarf cut (width approx. 45°; depth 1/5-1/4 of stem diameter)
- ④ Small, lateral cuts (to prevent tearing out of fibre in softwoods)
- ⑤ Main felling cut or back cut (slightly higher than bottom of scarf)
- ⑥ Leave enough wood as a hinge

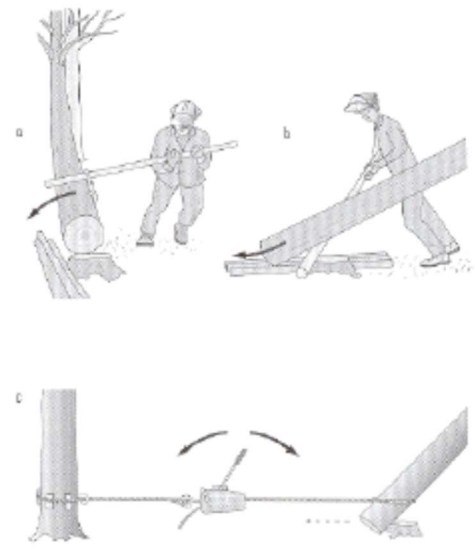
Prohibited practices for taking down hung-up trees



Prohibited practices for taking down hung-up trees

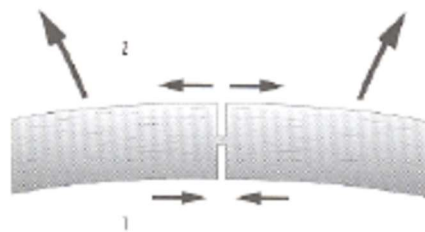


Recommended practices for taking down hung-up trees

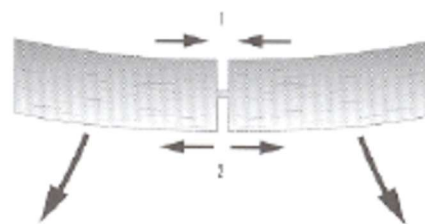


**Crosscutting wood under tension**

As a general rule for wood under tension, as illustrated below, the first cut is into ① the compression zone, and the second is into ② the tension zone.



Tension on the upper side: the stem springs upwards



Tension on the lower side: the stem springs downwards

**General Safety Instructions:**

1. Trained / Experienced persons should only be engaged for plantation works.
2. Maintain good house keeping around working area.
3. Hand gloves, Nose mask and Face shield must be used for handling of insecticide or toxic chemicals.
4. All Electrical appliances should be earthed properly and earth pit values must be checked periodically.



5. All FSC banned chemicals are avoided
6. Rubber gumboot and gloves should be used during bush clearing operation
7. In case of insect bite / injury, inform immediately and get immediate medical assistance from near by hospital or shift the affected person immediately to the nearest hospital if possible.
8. When lifting a load to a high level use a bench or support and make the lift in two stages.
9. Before lifting ascertain the intended path of movement is free from obstructions.
10. Before using any cutting machine, the condition of chain jaws, checking rated speed of the machine.
11. All waste materials should be regularly removed and disposed off.
12. All heavy vehicles should be checked for its healthiness and drivers should have valid license.
13. Horse play strictly prohibited in the working areas.
14. First aid box should always be available at the working area.

### **Electrical Safety:**

Electric shock or electrocution will occur when:

Electricity jumps (arcs) from a power line to an object that is nearby. This means you can be electrocuted even when you do not actually touch the power line.

When you must work closer than the minimum distances, contact the electrical dept to have the lines de-energized or shielded.

- Contact the TNEB to discuss de-energizing and grounding or shielding of power lines.
- All tree trimming or removal work within ten feet of a power line must be done by trained and experienced line-clearance tree trimmers. A second tree trimmer is required within normal voice communication range.
- Line-clearance tree trimmers must be aware of and maintain the proper minimum approach distances when working around energized power lines.



- Use extreme caution when moving ladders and equipment around downed trees and power lines.

**Safety in Tree Cutting:**

- Maintain a greater distance when trimming or felling on a slope where logs could roll or slide.
- Always be aware of your surroundings. Talk with coworkers to ensure you know what kind of work they are doing and where.

**→ Safety in using a Chainsaw:**

- Read the chainsaw's operator's manual before attempting to operate equipment.
  - Always be alert. Chainsaw work is strenuous and fatiguing.
  - When carrying a chainsaw, always turn the engine off.
  - Do not refuel the chainsaw with the engine running. Shut it off and wait at least 5 minutes for it to cool down. Wipe up any spills immediately.
  - Never smoke while refueling.
  - Never work alone. Make sure someone is close by for help in case of an emergency.
  - Keep hands and feet away from the wood that is being cut.
  - Ensure your chain is sharp. Dull chains are hard to use.
  - Make sure the chain tension is correct. Refer to the operator's manual for instruction. If the chain is too loose, it could come off during operation and if it is too tight, it could damage the saw.
  - Never operate the saw above your chest. Reaching above your chest makes the saw hard to control.
  - When cutting, always stand at an angle, with a firm balance on the ground or branch, so that if the saw kicks back, it will avoid your neck and head.
- When a tree must be removed, there are several things to consider before cutting.

1. Ensure coworkers and all others maintain a two-tree length distance. If the tree is going to fall downhill, increase the distance depending on the slope.
2. Look for any fences, buildings or power lines and avoid felling toward them.
3. Work only in good weather. Never work in strong winds, lightning, rain or any time when visibility is low.

### → Inspect the Tree

- Is the tree leaning in one direction? This will play a major role in the direction the tree will fall.
- Check the trunk (where the cuts are going to be made) for knot holes, cracks or signs of rot that could hinder the felling operation.
- Ensure the tree has no interlocking branches or vines from another tree. If it does, they must be separated prior to felling. Also, survey the crown of the tree for any material that may break loose as the tree falls.
- Trim any low branches that are in your way.

### **AVOID HEAT STRESS:**

It is important to keep yourself hydrated and cool while working outside.

- Drink water often throughout the day; don't wait until you're thirsty to get a drink. At least a quart of water per hour is recommended. Soft drinks can also be consumed to replace electrolytes lost through dehydration.
- Stay away from soda, coffee, tea and alcoholic drinks that dehydrate the body.
- Avoid large meals before working in the heat.
- Some prescriptions can make you more susceptible to heat illnesses. Check with your doctor or pharmacist to see if any medicine you are taking could affect you while working in the heat.
- Wear light-weight fabric, such as cotton, to help keep your body cool.




- Wear a hat or sun visor on sunny days to help control body temperature.
- Plan to do the heaviest work at the coolest part of the day.
- Take frequent, short breaks in shaded areas to cool down.
- Do not take salt tablets, unless recommended by your doctor. Most people receive enough salt in their diet to account for the salt that is lost through sweating.

**Lightning Precautions:**

Follow these precautions to help keep you safe when the weather turns bad.

- As soon as you hear thunder, shut off and put away equipment and move indoors out of the storm. When you are able to hear thunder, you are able to be struck by lightning. Lightning can strike even when it's not raining.
- The cab of an enclosed vehicle provides some protection from lightning but a sturdy building provides the best protection.
- Listen to the radio for weather updates and storm warnings.

**PERSONAL PROTECTIVE EQUIPMENTS USAGE:**

SINo	TYPE OF PERSONAL PROTECTIVE EQUIPMENTS	USAGE AREAS	PICTURE OF PPE
01	SAFETY HELMET	All working areas.	
02	FACE SHIELD	Fungicide / Pesticide / Herbicide handling areas.	
03	SAFETY GOGGLES	Fungicide / Pesticide / Herbicide handling areas.	



04	<b>EAR PLUG</b>	<b>Noise areas</b> <b>&gt; 90dB</b>	
05	<b>EAR MUFF</b>	<b>High noise areas.</b> <b>&gt; 100 dB</b>	
06	<b>NITRILE HAND GLOVES</b>	<b>Fungicide / Pesticide / Herbicide handling areas.</b>	
07	<b>SAFETY SHOE WITH TOE CAP</b>	<b>All working areas.</b>	
08	<b>GUM BOOTS</b>	<b>Fungicide / Pesticide / Herbicide handling areas.</b>	
09	<b>SAFETY BELT</b>	<b>Any works above 2 mtrs height.</b>	
10	<b>CUP TYPE NOSE FILTER</b>	<b>Fungicide / Pesticide / Herbicide handling areas.</b>	
11	<b>SAFETY BARRIER CREAM</b>	<b>Fungicide / Pesticide / Herbicide handling areas.</b>	

- TNPL kept records on health and safety practices including accident rates and lost time to accidents
- The health and safety practices are reviewed and revised regularly if needed and immediately after occurrence of major incidents or accidents

## TAMILNADU NEWSPRINT & PAPERS LIMITED தமிழ்நாடு செய்தித்தாள் காக்கித நிறுவனம்

### PLANTATION LABOUR - SAFETY AWARENESS வனத்தோட்ட தொழிலாளர்களின் பாதுகாப்பு பற்றிய விழிப்புணர்வு

1. வனத்தோட்டம் உருவாக்கப்படும் வேலைகளில் குழந்தை தொழிலாளர்களை (*Child Labours*) கண்டிப்பாக வேலையில் அமர்த்தக்கூடாது.
2. கண்டிப்பாக (*Compulsory*) ஒவ்வொரு நடவு மற்றும் அறுவடை செய்யும் பகுதிகளும் முதலுதவி பெட்டகங்கள் (*FIRST AID BOX*) இருக்க வேண்டும்.
3. தேள் (*Scorpio*), பாம்பு (*Snake*) போன்றவை கடிக்க நேரிட்டால் பாதிக்கப்பட்டவர்களுக்கு சிறு முதலுதவி செய்து அருகில் உள்ள மருத்துவமனைக்கு (*Hospital*) உடனடியாக கொண்டு செல்ல வேண்டும். பாதிக்கப்பட்டவர்கள் நடந்தே மருத்துவமனைக்கு செல்ல அனுமதிக்கக்கூடாது.
4. பாம்பு கடி ஏற்பட்டால் கடிபட்ட இடத்துக்கு மேல் துணி (அ) கயிறு கொண்டு நன்றாக இறுக்கி கட்டி, முதலுதவி (*First Aid*) செய்து அருகில் உள்ள மருத்துவமனைக்கு உடனடியாக கொண்டு செல்ல வேண்டும். இதன்மூலம் விஷம் இரத்த ஓட்டத்தின்மூலம் அனைத்து பகுதிகளுக்கும் செல்லதாவாறு தடுக்கப்படுகிறது.
5. நாற்று நடவு செய்யும் பொழுது உபகரணங்களால் காயம் ஏற்படாதவாறு பார்த்துக்கொள்ள வேண்டும்.
6. வனத்தோட்டங்கள் அமைக்கும் பொழுது உயர்மின்னழுத்த கம்பிகள் (High Voltage Electricity line) செல்லுமாயின் வனத்தோட்ட தொழிலாளர்கள் மின்வாரியத்துறை அதிகாரிகள் மூலம் மின்னோட்டமானது நிறுத்தப்பட்ட பிறகே தேவையற்ற செடி, கொடி மற்றும் மரங்களை அகற்றுதல் வேண்டும்.
7. வனத்தோட்டங்கள் அமைக்கும்பொழுது உயர் மின் அழுத்த கம்பிகள் (High Voltage Electricity line) செல்லுமாயின் பாதைக்கு இருபுறமும் குறைந்தது 3 மீட்டர் இடைவெளிவிட்டு நாற்றுகளை நடவு செய்யவேண்டும்.
8. வனத்தோட்டங்களில் புகைபிடிப்பது தடை செய்யப்பட்டுள்ளது.
9. மரம் வெட்டும் தொழிலாளர்கள் தலைக்கவசம் அணிந்து அனைவரும் பாதுகாப்புடனும் விழிப்புணர்வோடும் இருக்க வேண்டும்.
10. மிகுந்த காற்று வீசும் காலங்களில் (அ) மழை காலங்களில் கவனமாகவும் முன்னெச்சரிக்கை மற்றும் பாதுகாப்புடன் மரம் வெட்டுதல் வேண்டும்.
11. மரம் வெட்டுவதற்கு மோட்டர் பொருத்தப்பட்ட இரம்பங்களை (*Power Chainsaw*) பயன்படுத்தும்பொழுது தலைக்கவசம், பாதுகாப்பு கண்ணாடி, பாதுகாப்பு காலணி ஆகியவற்றை கண்டிப்பாக அணிந்து இருக்கவேண்டும்.

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