Greenheart Forest Management System

1. Surveying of the harvesting area

2. Planning of the harvest activities
   - Planning of roads and water crossings
   - Planning of harvesting blocks

3. Pre-harvest activities
   - Block demarcation and inventory
   - Tree selection
   - Flagging of skid trails

4. Harvest activities
   - Directional felling
   - Extraction

- Accurate planning and precise execution is required for sustainable harvesting in natural hardwood concessions
- Greenheart follows a key 4–stage process when undertaking harvesting operations
Stage 1: Surveying the harvest area using satellite photos

- Stage 1: Surveying the harvest area
- Forest vegetation classification is determined from satellite photos
- Allows planners to find areas of productive forest
Stage 1: Topographical images (DEM, Landsat)

- Topographical images allow planners to find access
Stage 2: Planning of harvest activities

- The first step is to design and map the main roads through the concessions.
- Key is to minimize damage to the forest while achieving the highest efficiency.
Stage 2: Allowing the forest to regenerate itself

- Concessions are divided into kapvaks (100 hectares)
- Operations move from kapvak to kapvak
- This allows the forest to regenerate itself after harvesting has completed
Stage 3: Pre-harvest activities

- Inventory teams are sent in advance into kapvaks and record all trees with diameters greater than 35 cm.
- All data is recorded using Geographic Information System (GIS).
- Inventory includes tree location, dimensions and topographical features.
Stage 3: Pre-harvest activities – Skid Planning

- Planning of skid trails to minimize damage to forest
Stage 4: Reduced Impact Harvesting

- Trees are harvested using directional felling techniques
- Directional felling minimizes damage to the surrounding trees and forest vegetation
Stage 4: Reduced Impact Harvesting

- Felled trees are dragged out using winches which means surrounding trees are not damaged and there is no need to construct roads right up to trees.
Stage 4: Reduction of skidding damage

- Planning skid trails and winching means there is no need to drive up to the trees.