



# SUSTAINABLE FOREST MANAGEMENT



**Greenheart Group**  
always growing



# Greenheart Forest Management System

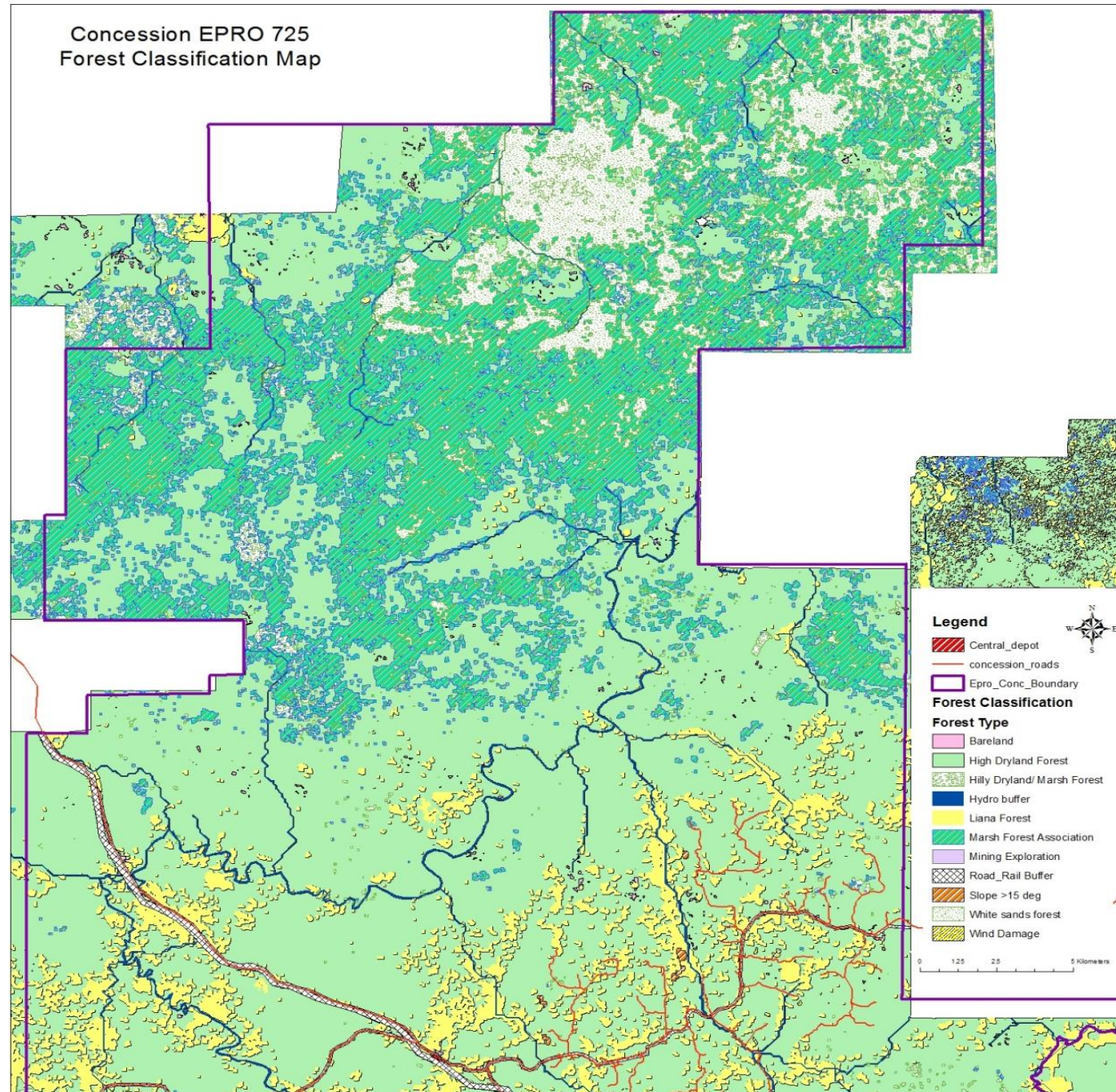
1. Surveying of the harvesting area
2. Planning of the harvest activities
  - ✓ Planning of roads and water crossings
  - ✓ Planning of harvesting blocks
3. Pre-harvest activities
  - ✓ Block demarcation and inventory
  - ✓ Tree selection
  - ✓ Flagging of skid trails
4. Harvest activities
  - ✓ Directional 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**



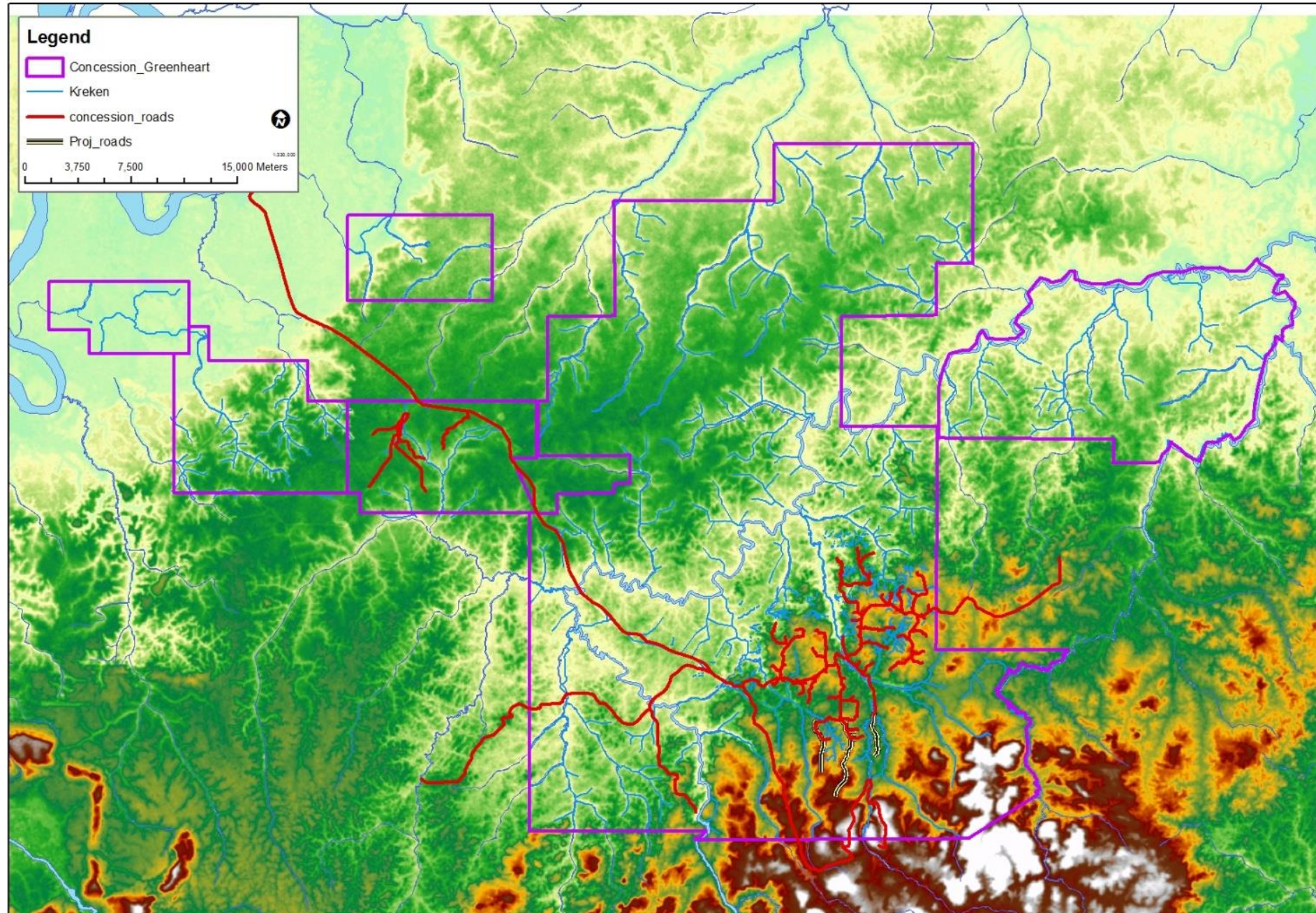
## Stage 1: Surveying the harvest area using satellite photos



- Stage 1: Surveying the harvest area
- Forest vegetation classification is determined from satellite photos
- Allows planners to find areas of productive forest



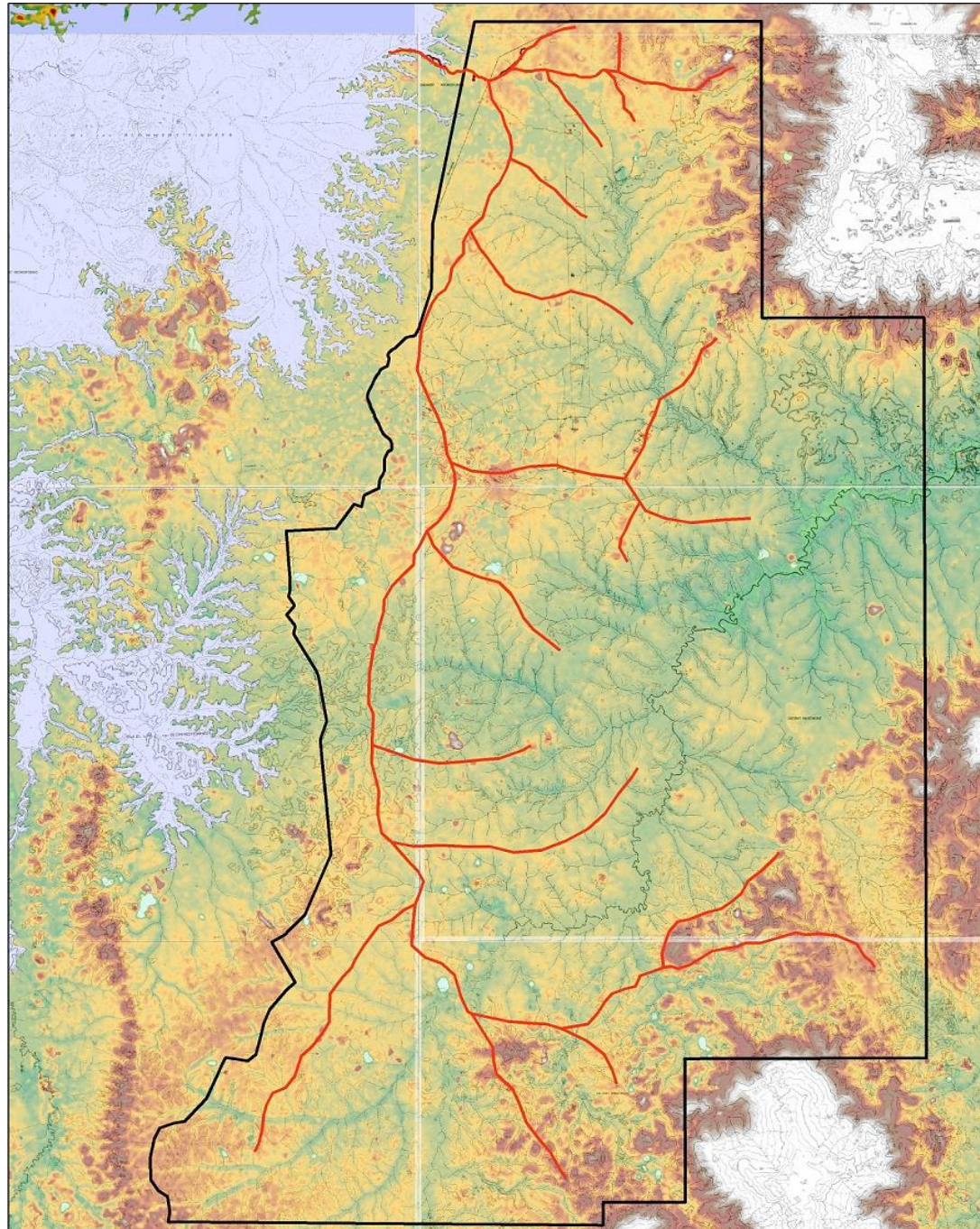
## Stage 1: Topographical images (DEM, Landsat)



- Topographical images allow planners to find access



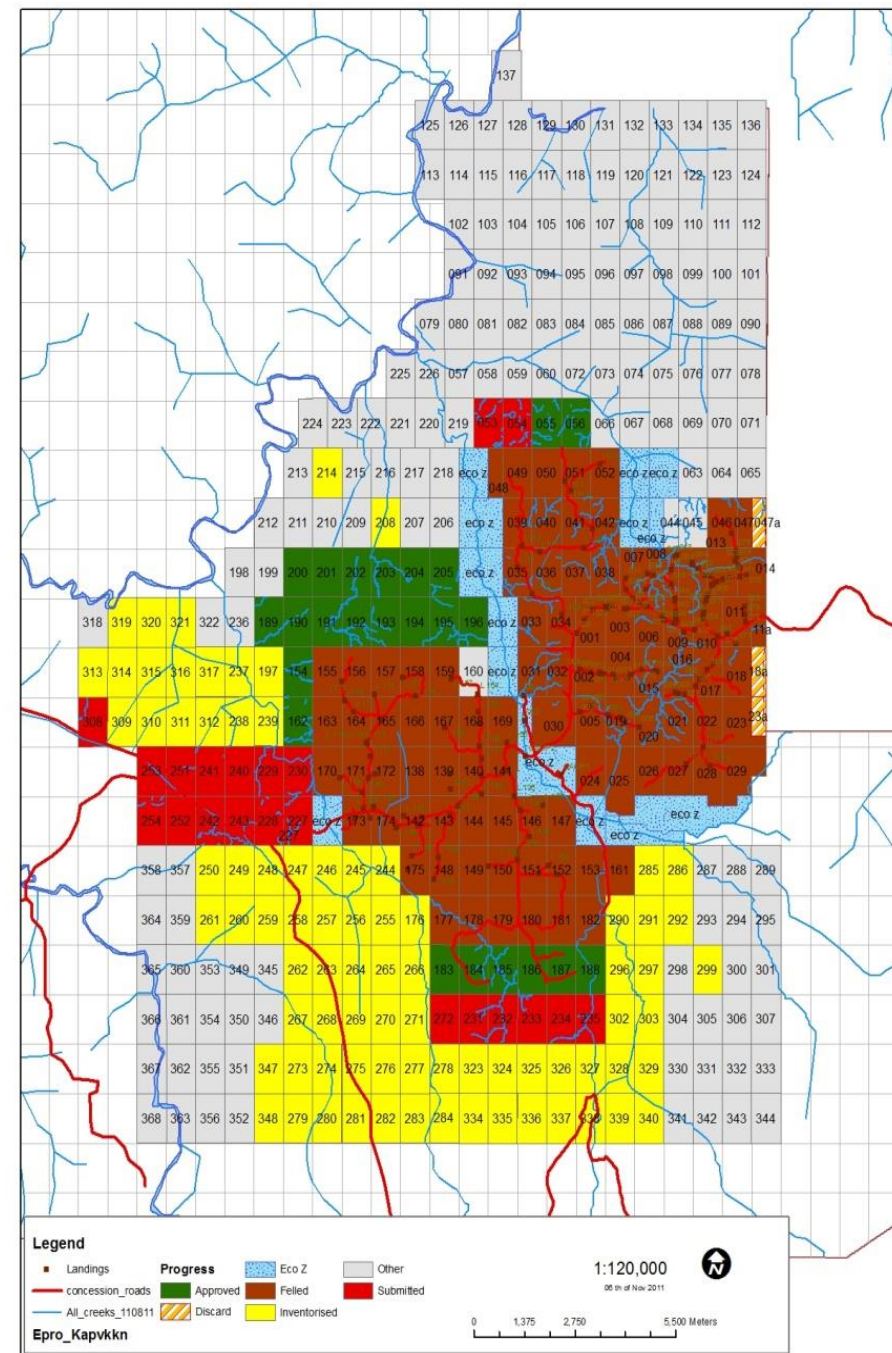
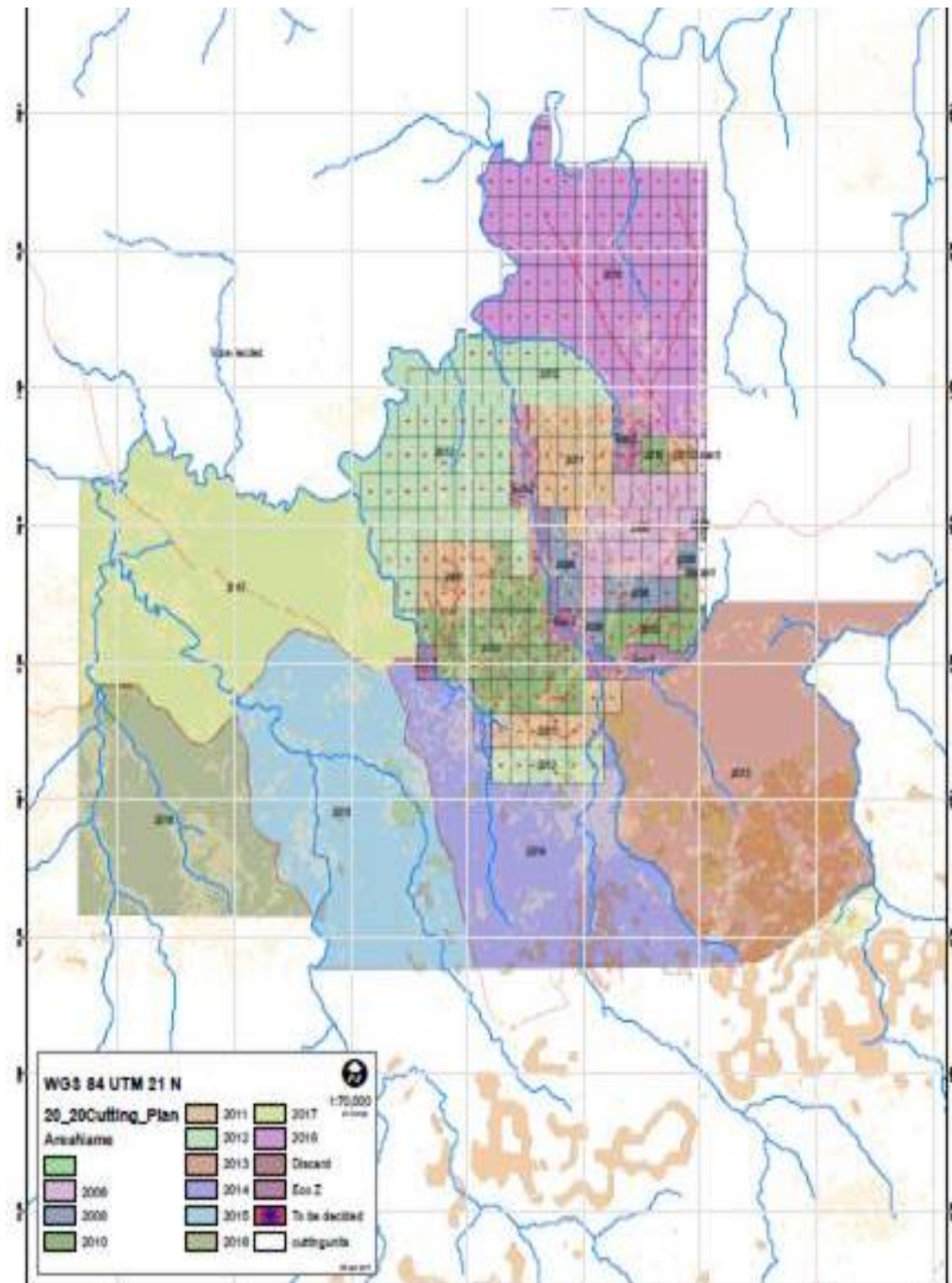
## Stage 2: Planning of harvest activities



- 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



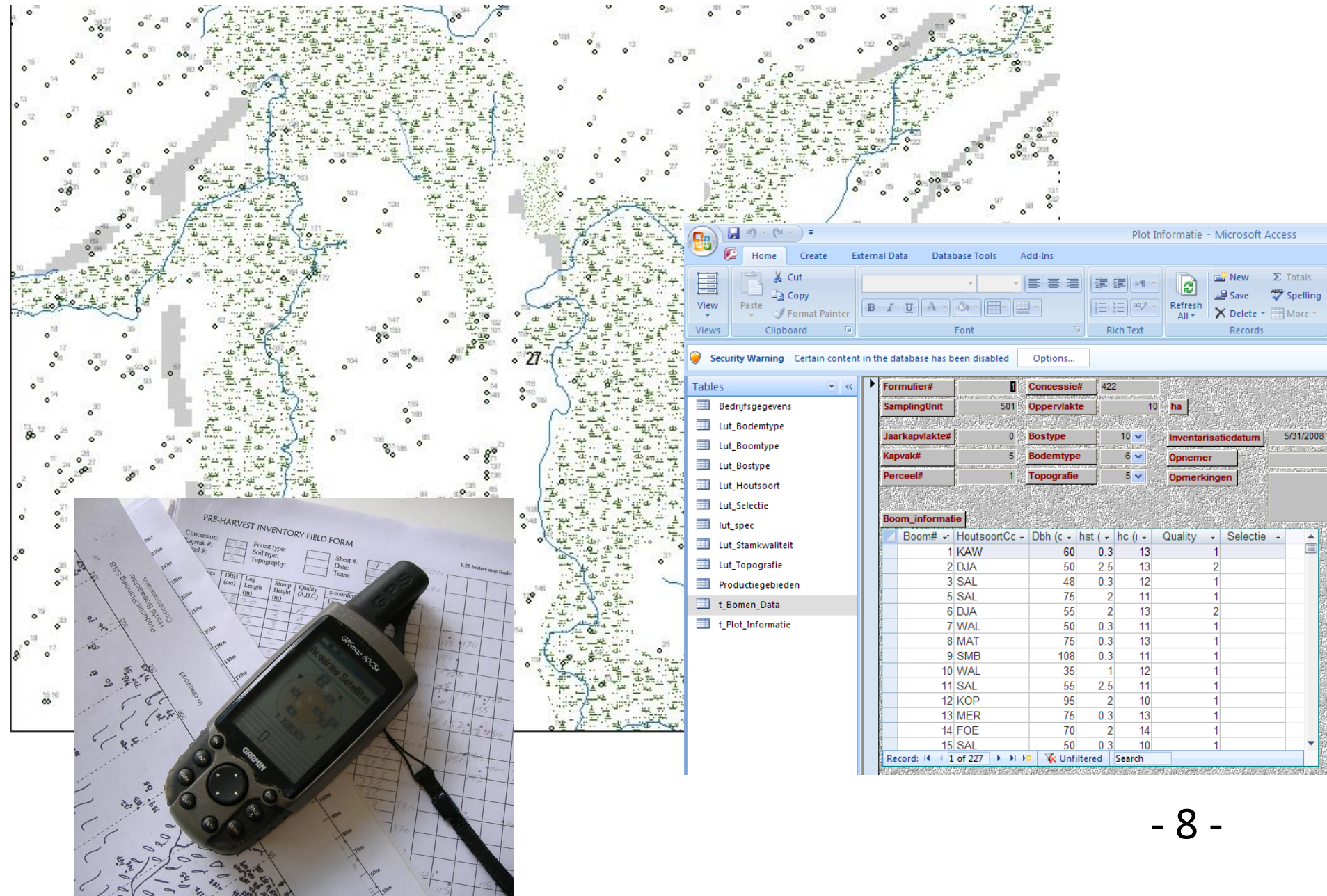
## Stage 2: Allowing the forest to regenerate itself



- 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 35cm
- 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



**Without planning of skid trails**



**With planning of skid trails**

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





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