



NATIONAL FOREST INVENTORIES

Prepared by
Dr. Andreas Nikodemus, PhD.
Directorate of Forestry

Windhoek
September, 2023

Outline

1. Introduction
2. Methods and Tools
3. Procedures
4. Challenges and Limitations
5. Proposed Improvements and Opportunities



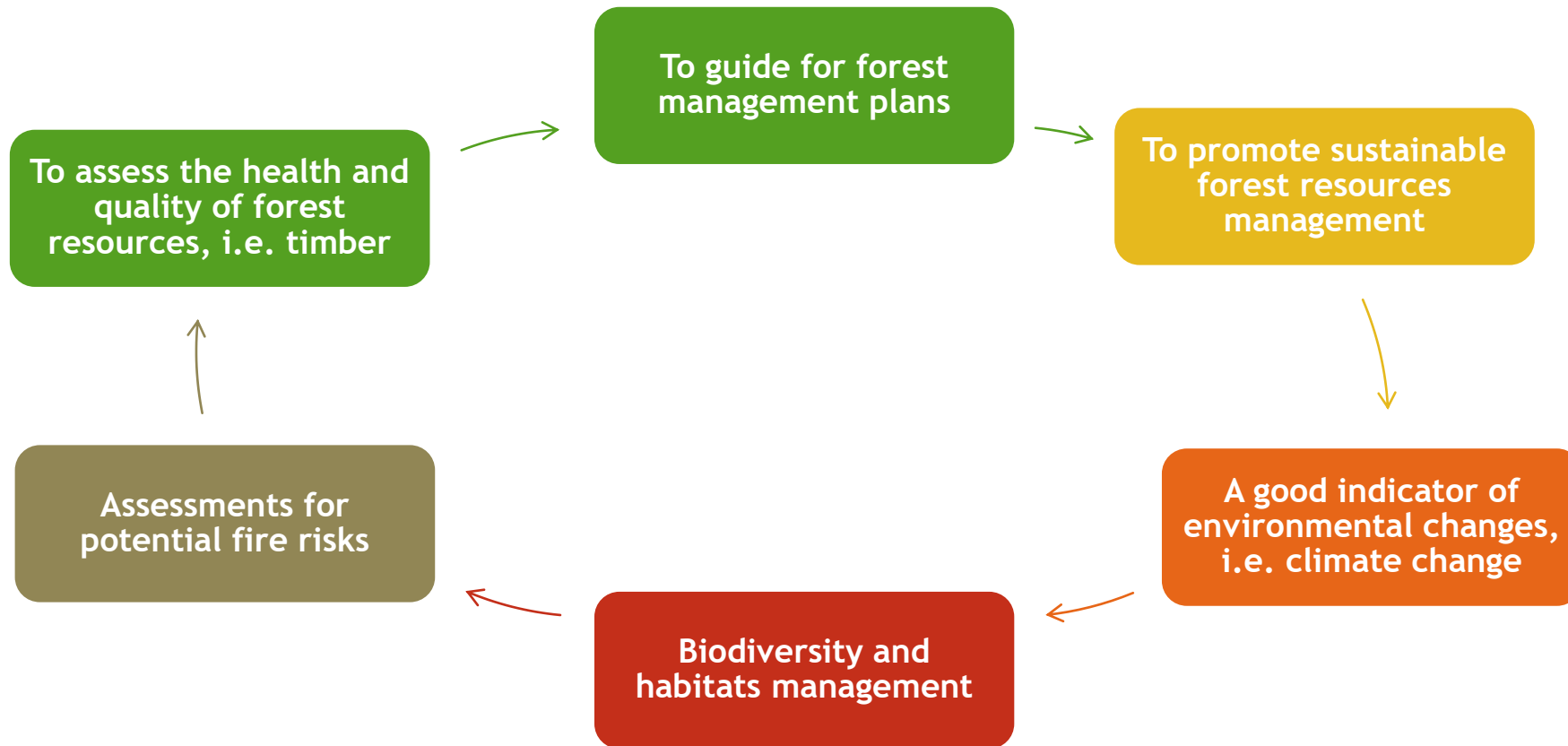


1. Introduction

1.1 Background

- **Forest inventory:** data collection process to provide the required information/database for forest resources within an area of interest (Asrat & Tesfaye, 2013).
- Introduced in Namibia in 1995 by the Directorate of Forestry in collaboration with the Department for International Development Cooperation of Finland (FINNIDA)
 - To produce forestry data and information on woodlands in northern Namibia - HISTORICALLY
 - The HEART of all forestry management activities!!
- Forest Act 12 of 2001, Part II, Sections 10-12

1.2 Why Forest Inventories?



1.3 Forest Inventory Areas



- Forest reserves/state forests



- Community forests



- Forest plantations



- Other public, private or communal land used for forestry practices



Conducted every 5 years



Participatory Resources Assessment (PRA) approach



Between 3 and 6 inventories per year



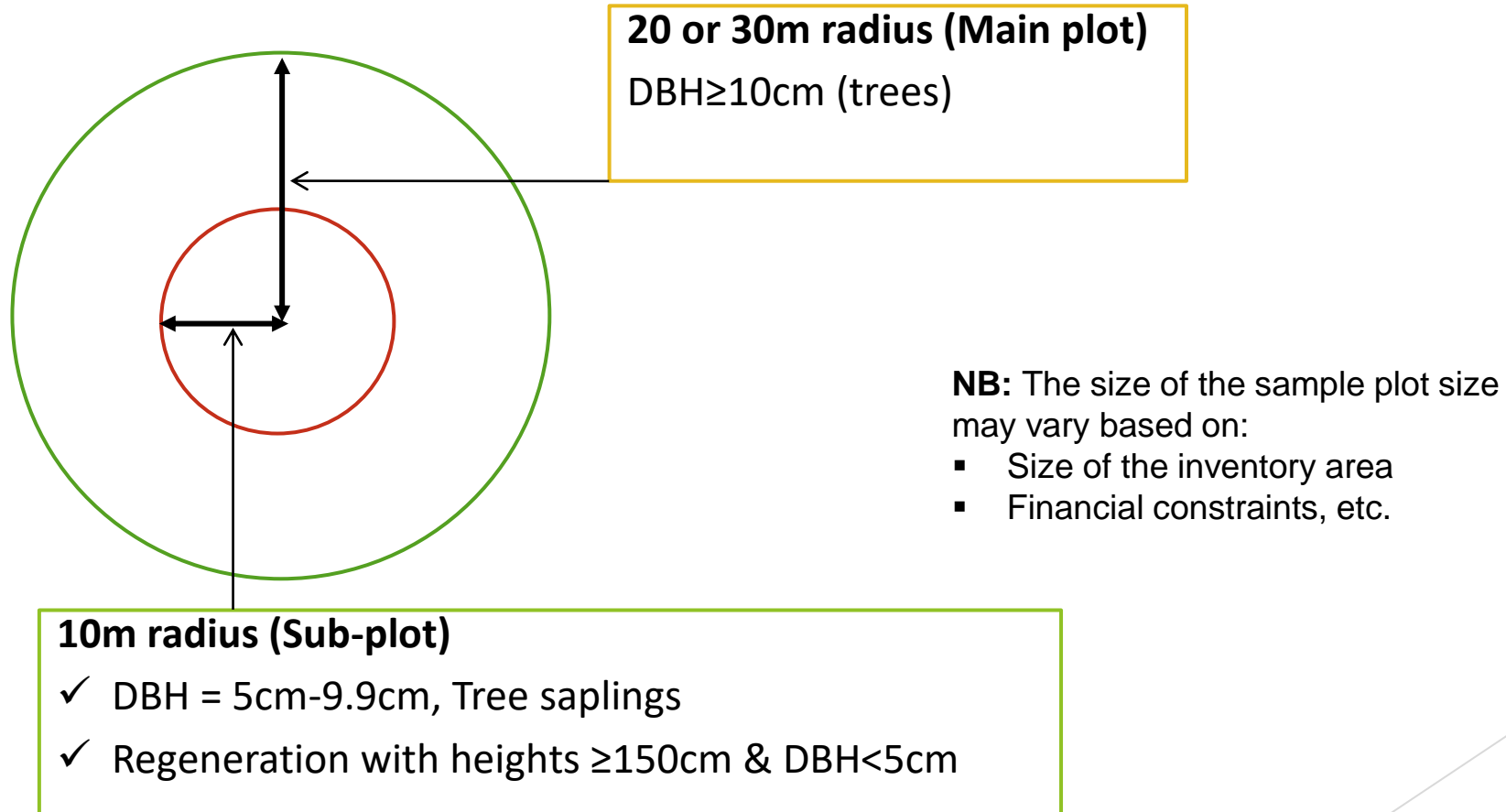


2. Methods

2.1 Sampling & Parameters

- Sampling intensity of 10% (minimum) of the area
- Systematic sampling
- Ideally permanent plots
- Parameters
 - Classification (trees, regeneration, saplings, shrubs, etc.)
 - Species identification
 - Diameter at Breast Height (DBH) or circumference (cm)
 - Trees height or log length (m)
 - Growing stock (diameter classes), mortality, and uses
 - Total allowable cut, etc.

2.2 Sample Plot



2.3 Tools

Tool	Use
Global positioning system (GPS)	Location/navigation
Measuring tape	Plot demarcation
Diameter tape, tree calipers	Diameter (DBH) or circumference
Clinometer or long pole/stick ruler	Height/log length
Field forms/sheets, pencil, and eraser	Data recording

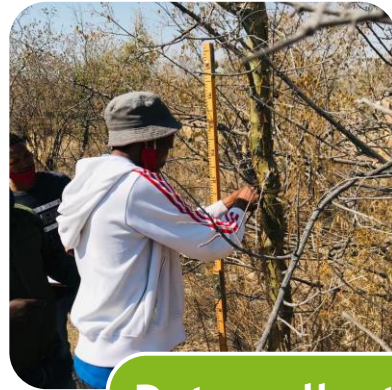


3. Procedures



Training

- By NFI team
- ✓ Local communities
- ✓ DoF staff



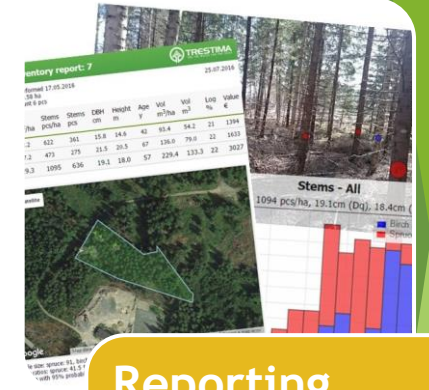
Data collection

- Local communities
- DoF (supervision)
- Verification (NFI)



Data processing

- NFI team
- Data entry
- Data cleaning
- Translation of names
- Analysis



Reporting

NFI team

4. Challenges & Limitations

- Limited of funds
- Limited staff
- Limited vehicles
- Limited inventory tools
- Lack of a sustainable database system
- Inconsistency in data collection methods



5. Proposed Improvements & Opportunities

- Artificial intelligence (relevant simulation systems), ground truth data, e.g. drones
- Collaboration with local academic institutions
- International donors, e.g. projects
- Support from local authorities, i.e. traditional authorities, etc.





Thank You