Planning and implementation of NAFORMA

Nurdin Chamuya (NPC)

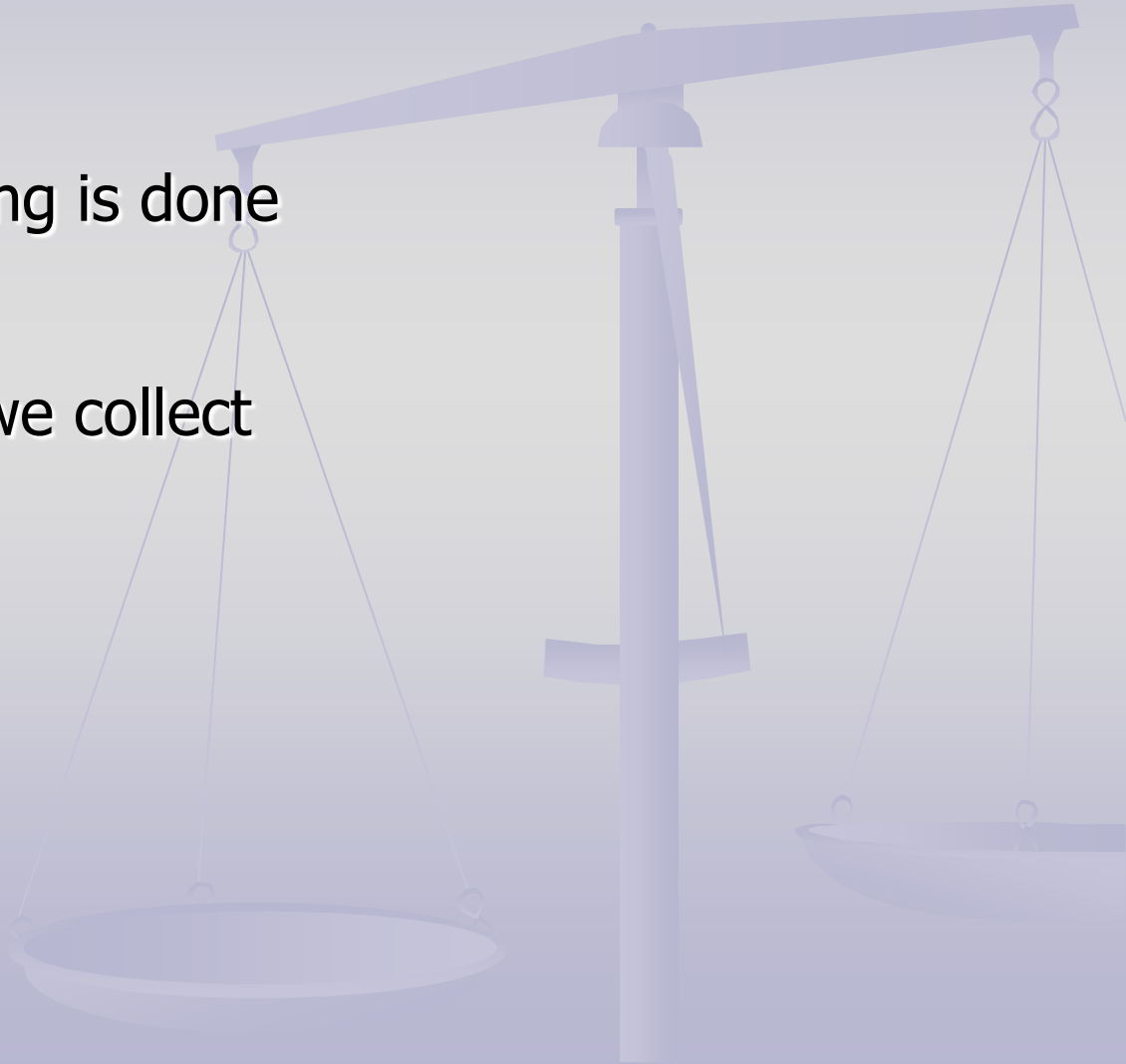
Regional Course on REDD+ MRV, NFI and Monitoring

Sokoine University of Agriculture, Morogoro, Tanzania

Thursday 14 July 2011

Content

1. Planning
    - introduction
    - How the planning is done
2. Implementation
    - where and what we collect
    - for whom
3. Takeaway



1. PLANNING

Introduction

Proper planning for any forest inventory is a very important aspect.

It is the most challenging part before embarking to the actual fieldwork.

Is the time when brains of foresters have to show how creative and imaginative they are; to come out with a SMART plan.

Intro cont.

It is during planning when strong decisions and protocols are made based on experience, expertise and logical reasoning.

Although the reasons for carrying out inventories may vary there is a unity in their planning and execution.

All inventories strive to provide knowledge about the forest resource useful for SFM

Only a well planned and executed Forest Inventory provides such information

Intro cont.

- However, to gather this information efficiently and present it at an understandable and useful form is by no means a simple task.
- In most cases a country has to engage forest inventory specialists to prepare a program whose implementation will come out with the required information at the needed accuracy within the available resources. (Personnel, funds and time)
- Tanzania engaged two FI experts (local and International)

National Forest Ass
(NFA)
Goals
tribute to the sustainab
agement and utilisat
cient and cost effect
productivity of th
ecific Objecti
capability of FBD
age the information
tional database
with NAFOBED
ation systems.

How the planning was done

1. Study and compile information from the existing sources concerning the forest area

- past inventories, reports, maps and photos.
- Information on the transportation system
  railways and road networks and trails

2. Field reconnaissance trip

To experience the forest types and landscape variability, and timber characteristics,

The field trip justified the need to review the traditional FAO approach as stated in the NAFORMA Specific Objective number one

How the planning is done cont.

3. Brain storming on information that NAFORMA should provide and the hows

- Consulted stakeholders to gather their expectations and
- Convened a workshop where stakeholders' information needs were identified, presented and discussed

Demands from the stakeholders' Survey and Workshop

The stakeholders demanded NAFORMA to provide information about

The extent and stocking levels of forest resources in Tanzania by categories of:

- vegetation type (species in plantations & natural forests)
- ownership of reserved forests and forests in general land
- stocking levels including carbon estimates
- use status (productive or protective)
- Biodiversity status

- Location of seed sources of important tree species.
- Deforestation and degradation levels,
- Trees Outside the Forest (TOF) area
- Non Wood Forest Products
- Harvestable volume

The information should be useful to International, nation and Sub-nation (district) level.

How the planning is done cont.

4. Consider the time and funds available for the inventory.

For any inventory there is a fixed amount of money set aside to execute the exercise.

A planner has to consider the cost of the inventory operations and see if the money needed is available or will be approved.

It is necessary to fit the entire inventory operations to those limitations.

However, in some cases the available funds may be flexible.

Those limitations have influence to the inventory operations such as

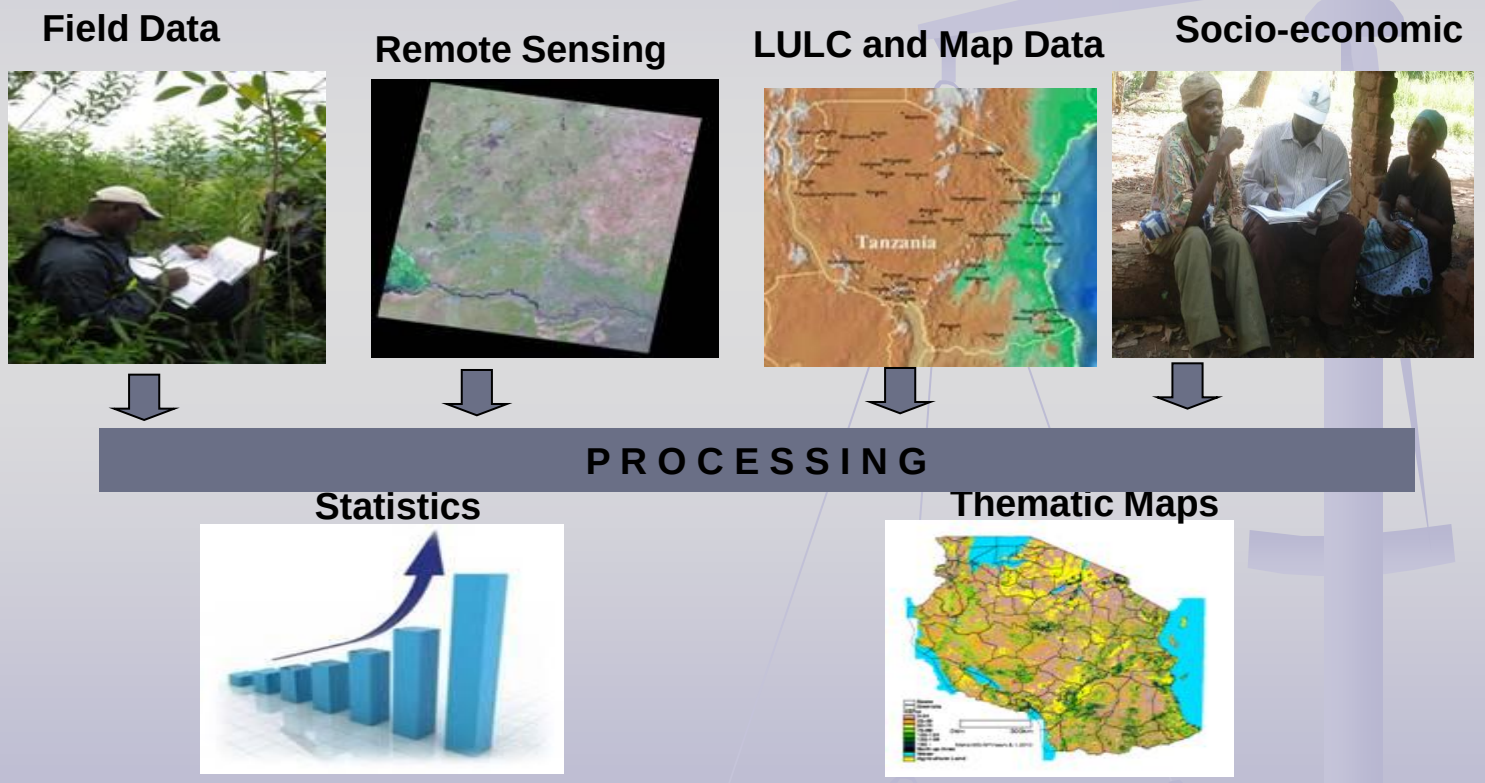
- the size and competence of the staff,
- the kind of equipment and instruments,
- the use of existing or new aerial photography,
- the number and distribution of samples (SI)

to mention a few.

The finding shows that there was a need to have additional funds of 2M Euros to the original budget 3.8 M USD and six more months.

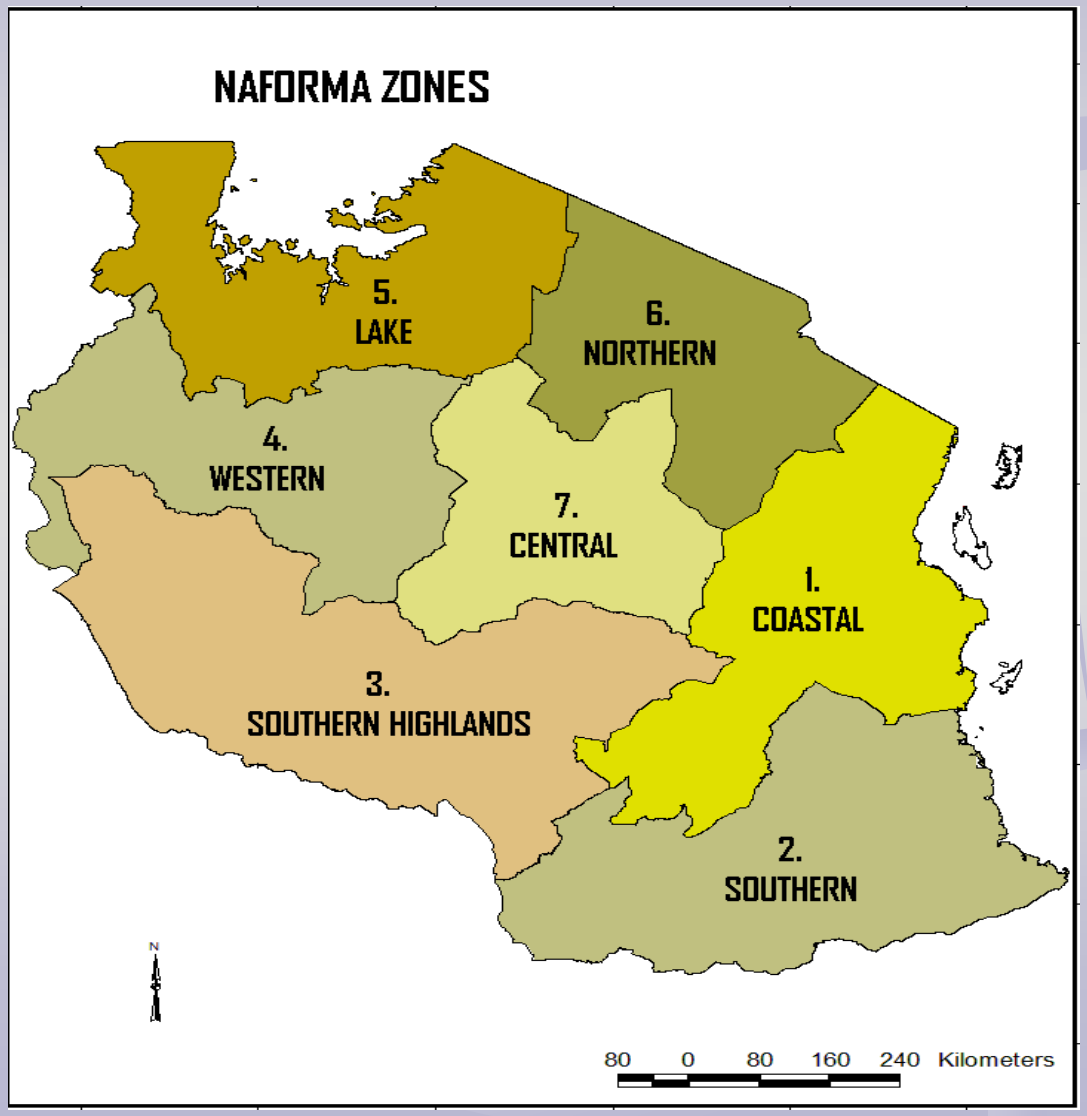
5. Reviewed and decided the inventory design to applied.

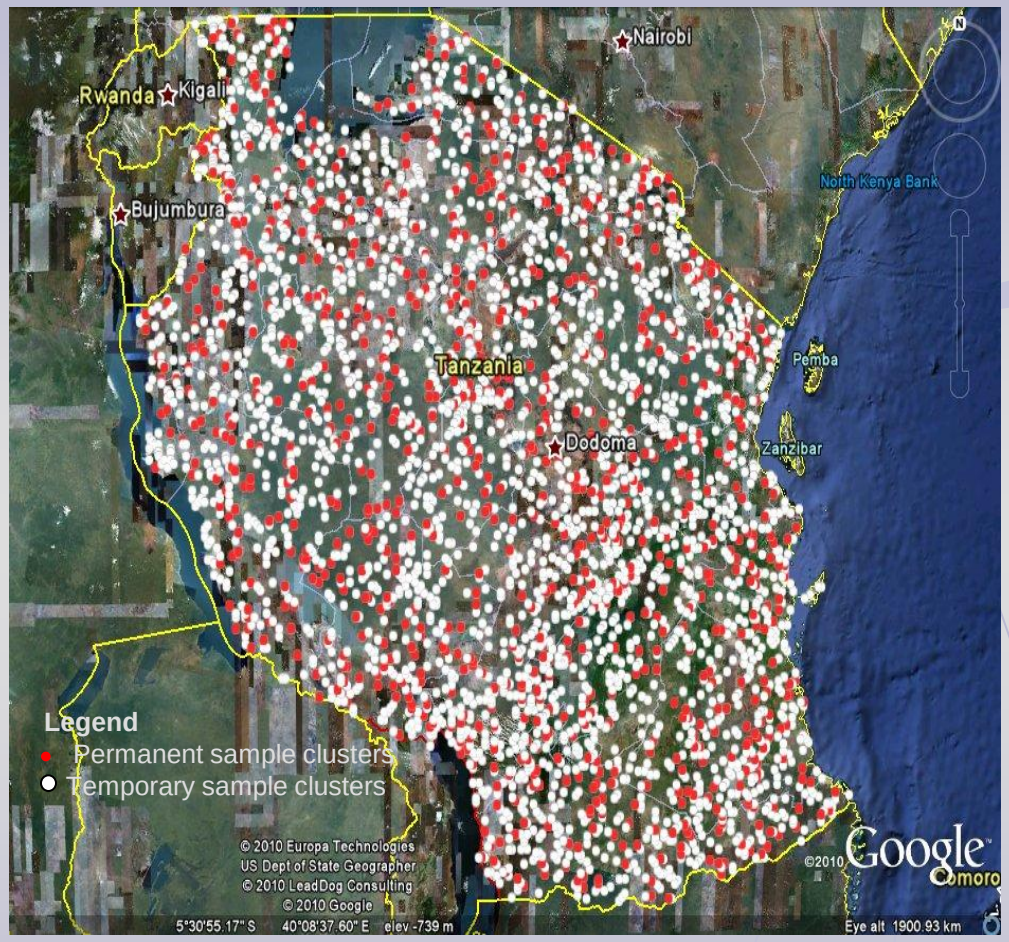
They considered different sampling techniques basing on the accuracy needed, time, fund and aerial photographs available, and the existing transport and communication systems. What they come out with is **A Multisource Inventory** employing ***Double Sampling for Stratification Design***



- Planning took one year and two weeks (May 12, 2009 – May 26,2010)

The entire country area was divided into 7 strata (zones) basing on administrative districts boundaries and vegetation types

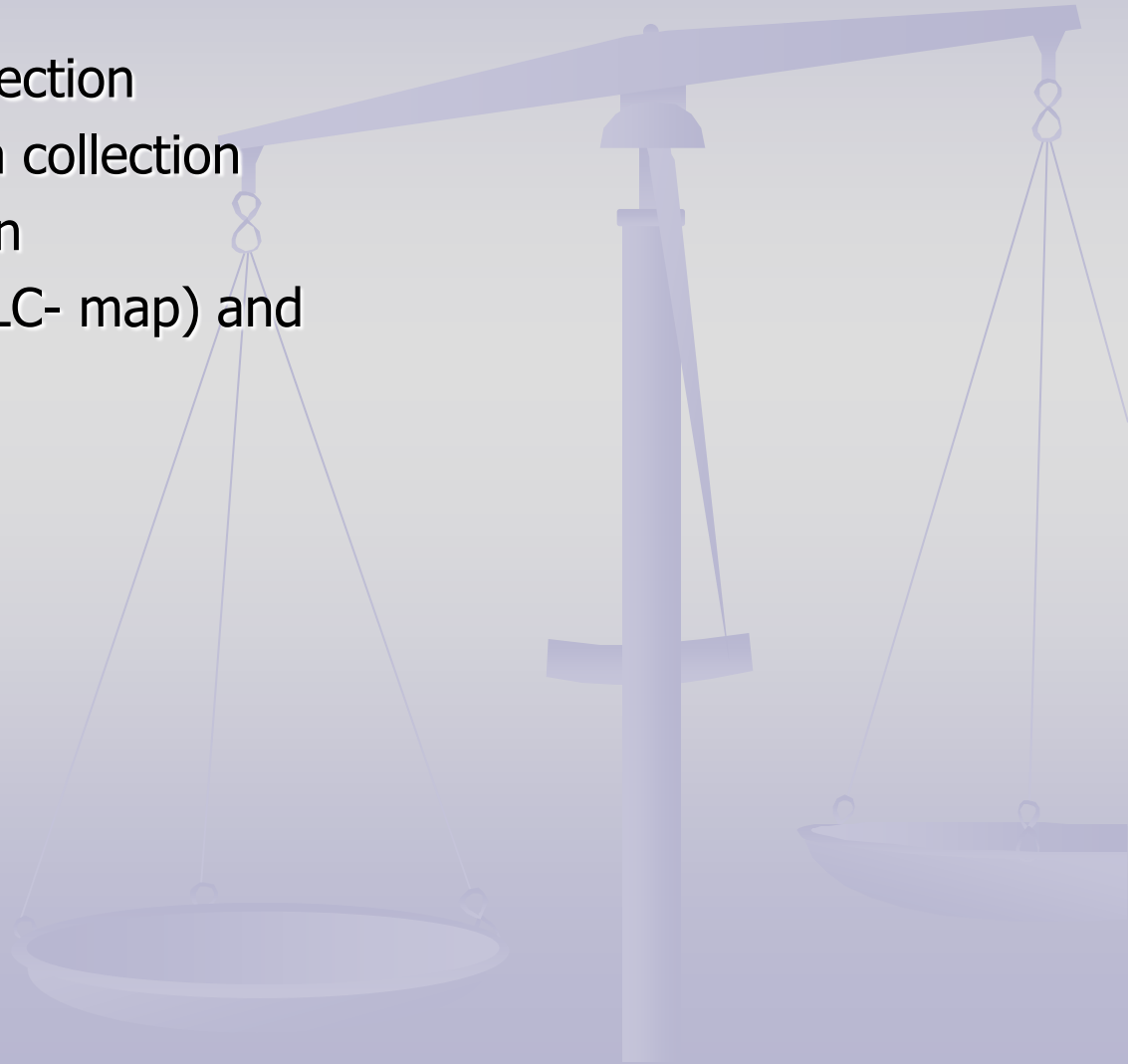




- 3,419 clusters in total with 32,660 plots
- 8,165 PSP and
- 24,495 TSP

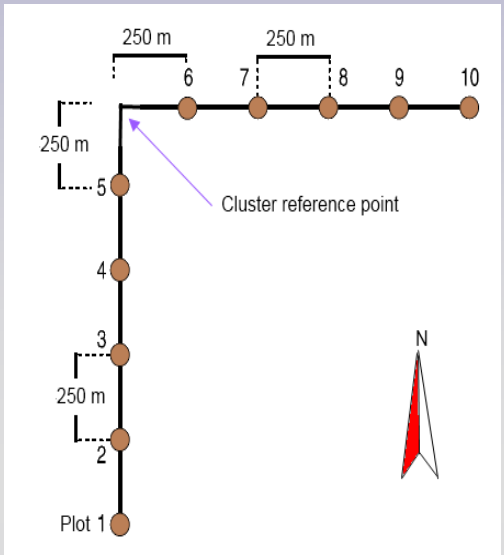
2. Implementation

- Training of personnel on how to execute the plan.
- Training on
  - Biophysical data collection
  - Socio-economic data collection
  - Soil sample collection
  - Map production (LULC- map) and
  - Data entry

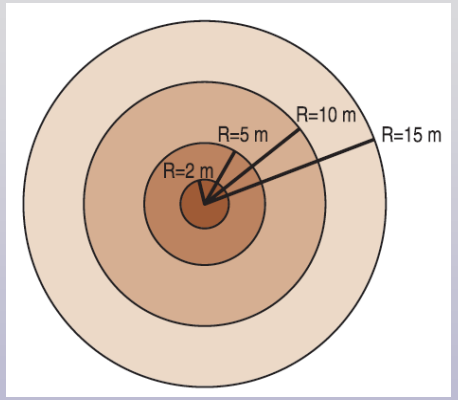


Implementation cont

Measurement unit



- NAFORMA clusters are **L** shaped
  - Each cluster has concentric circular plots ranging from 6-10 depending on terrain and forest cover of a stratum.
  - The distance between clusters vary according on the forest cover and terrain a cluster falls.
  - Hilly areas with heavy forest have more clusters of few plots
  - The distance between plots in a cluster is 250 m



Radius: 15 m
Trees: DBH ≥ 20 cm

Radius: 10 m
Trees: DBH ≥ 10 cm

Radius: 5 m
Trees: DBH ≥ 5 cm

Radius: 2 m
Trees: DBH ≥ 1 cm

Implementation cont

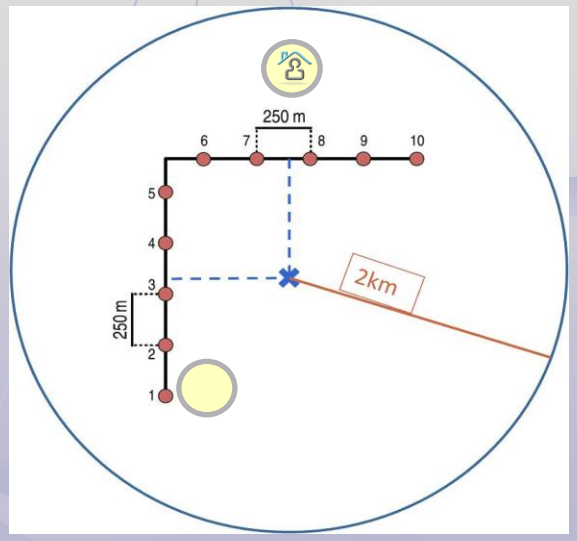
- NAFORMA started with 5 field crews and 1 QA. We, scaled up to 16 crews and 2 QA
- Each crew composes:
- 3 Foresters (biophysical data)
- 1 socio-economic
- 1 soil sample collection
- 1 Botanist
- 1 game scout
- 1 QA crew of 4 Foresters
- Each crew is provided with 4WD Land Cruiser Vehicle

Implement. cont

Socio-economic data collection

The socio-economic data collection is well linked with the Biophysical data

- Emphasizes people living in or near forests
- Interviews is conducted to all PSC (25%) and to selected TSC (63%).
- 4 closest HH from the centre of the cluster are interviewed
  Appr. 5,000 HH interviews



Who are the interviewees

Key informants:
Individuals who know about forest use in the area (i.e. land owners, village elders, spiritual leaders etc)

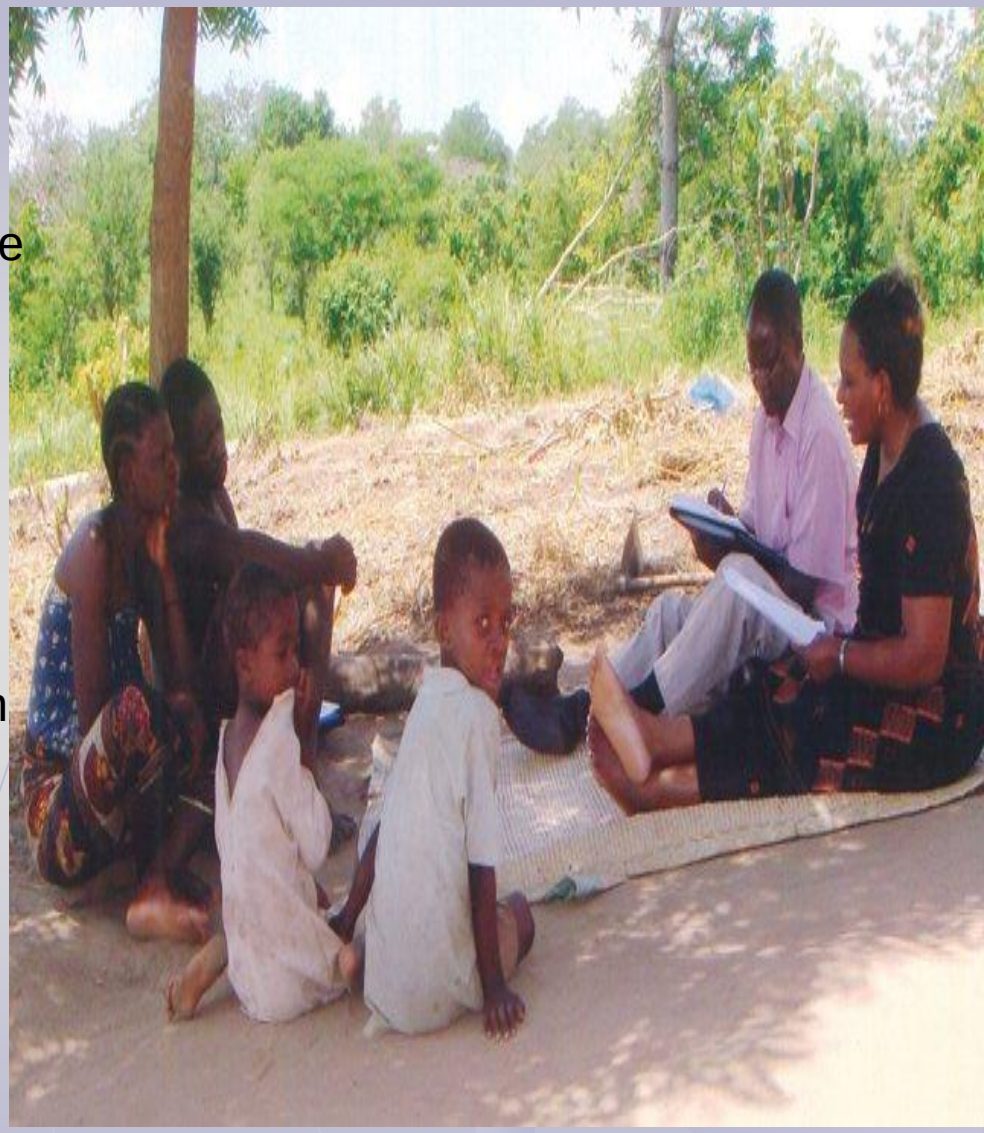
- information on user rights and conflicts

Households Survey:

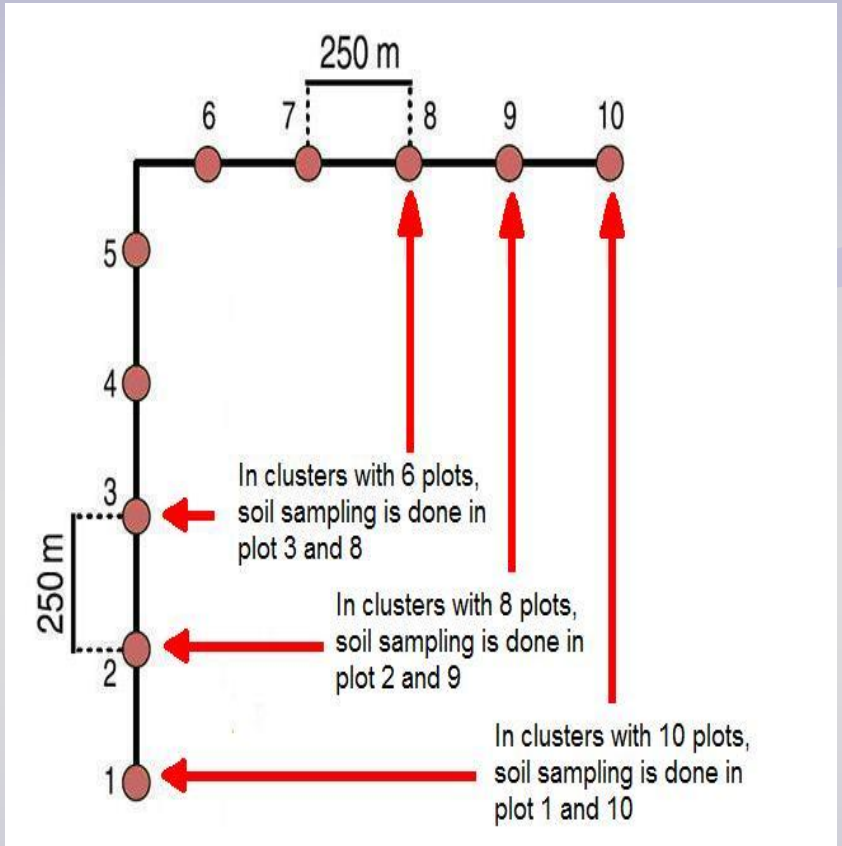
• Data on forest role or specific data gap:
  - Food security
  - Reach of government programs, such as PFM under JFM and CBFM
  - Anticipated REDD+ benefits
  - Energy needs
  - Products and services

• Profitability of land use alternatives

• Governance activities



Soil sampling is also linked with Biophysical data



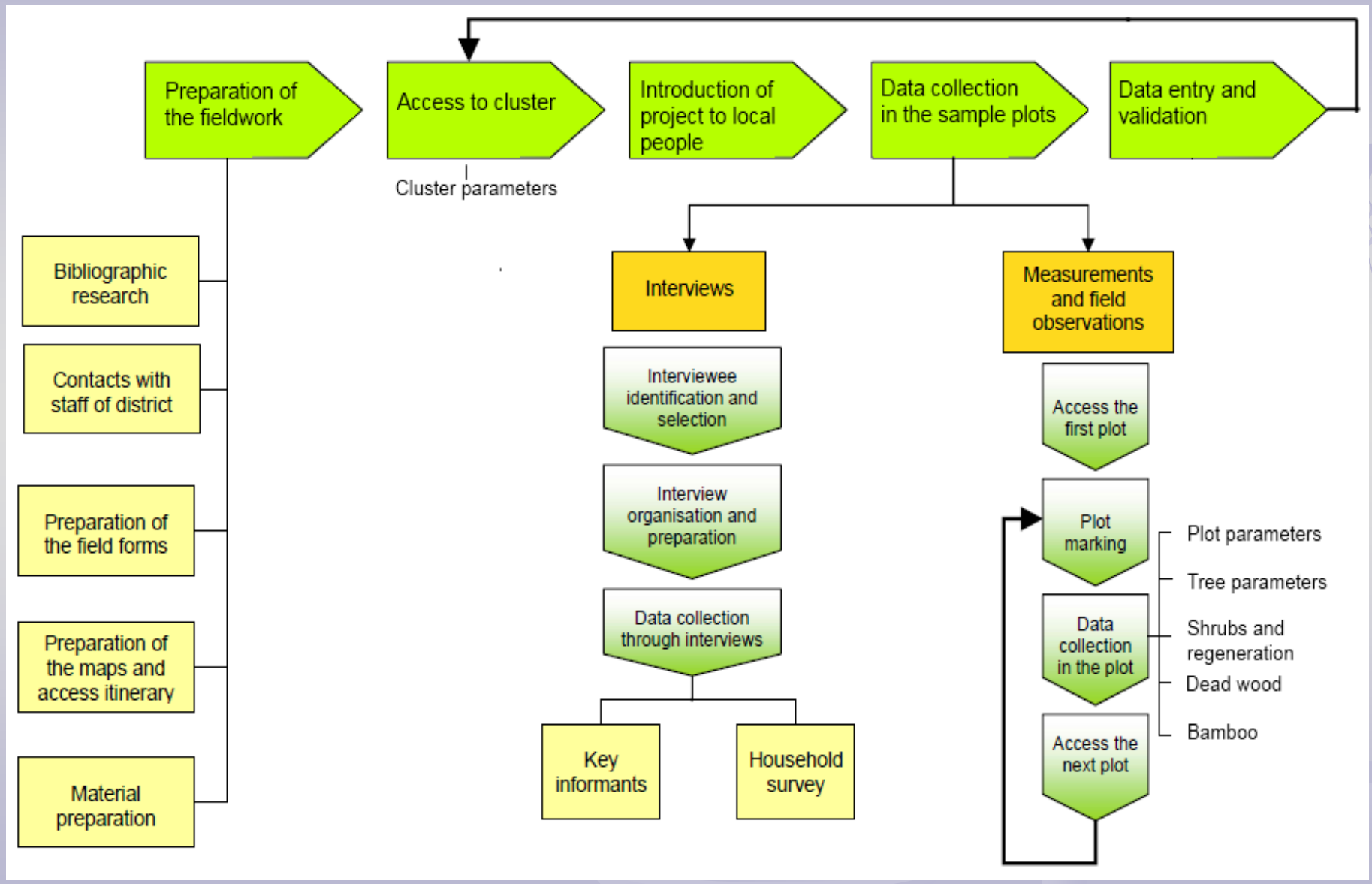
Four soil sampling pits located on the outer circle of the inventory plot at main compass directions (East, South, West, and North). Soils sampling is done in the first and last plot of each permanent cluster

Soil sampling spots

The locations of the volumetric samples are marked on the wall of the soil pit.

- extracted carefully from the wall of the pit, using a Field Knife and Panga.

NAFORMA data collection protocol



NFA
NFA

NAFORMA BENEFITS AND CHALLENGES

Benefits

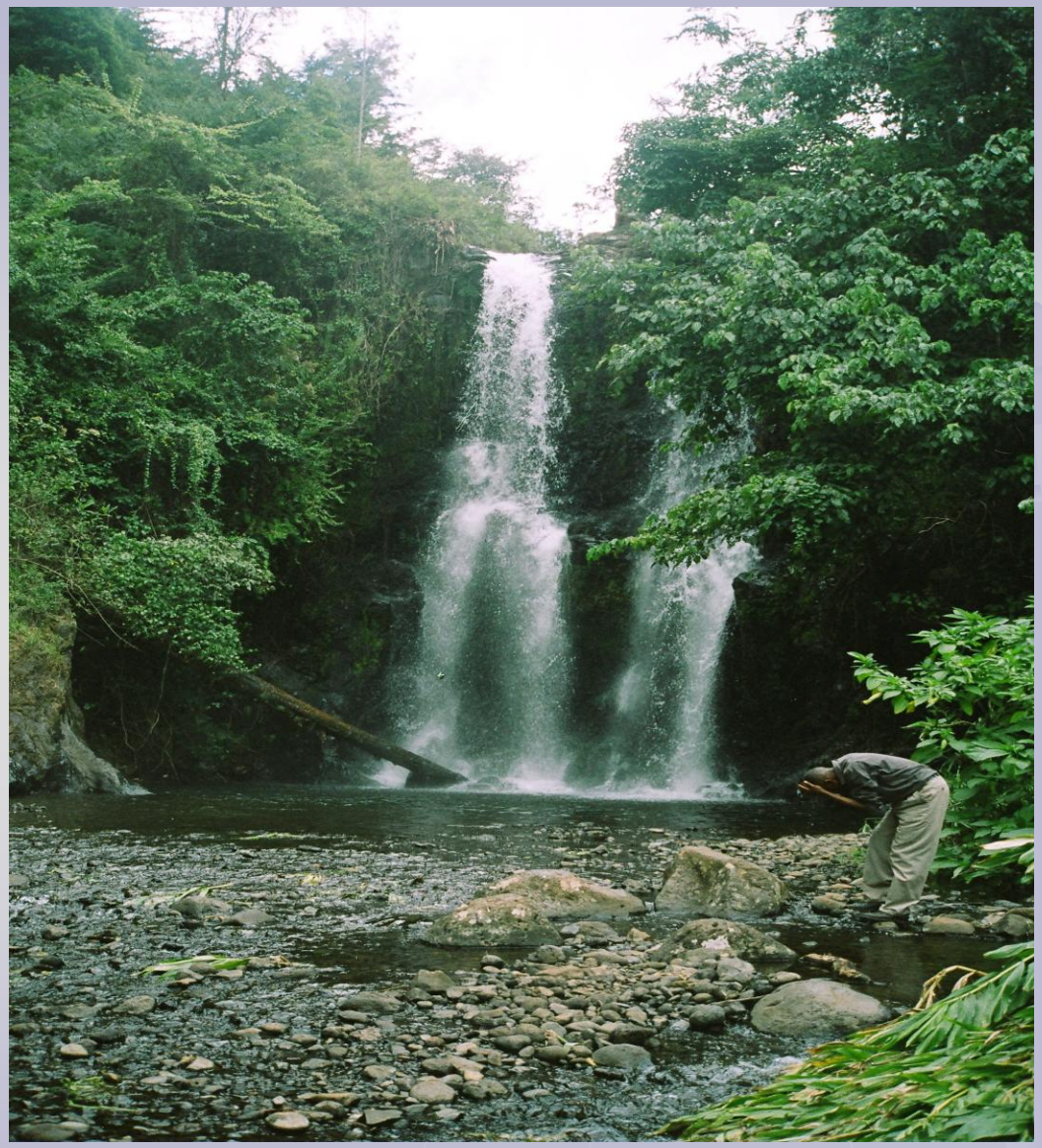
- The results are useful tool for policy analysis
- Responds to national needs
- Links well SE and biophysical data
- Explains drivers of forest degradation and deforestation
- Provides basic information on monitoring forest carbon and forest governance hence Tanzania's readiness to REDD+ implementation
- Provides strong baseline technique for future forest monitoring and assessment

Challenges

- Expensive undertaking
- For the process to be sustainable there is a need for NAFORMA to be institutionalized
- Need further development to respond to REDD+ needs e.g Carbon mapping, forest change assessment

Takeaway

- Even without the perspective of a possible REDD+ mechanism - assessment and monitoring of the forest resources in Tanzania makes sense. Quality data and information is needed to make good decisions in Policy Development and SFM.
- A possible REDD+ mechanism is an additional good reason to assess and monitor but it requires investments in getting more information
- More efforts on monitoring changes on land-use, deforestation and degradation
- A field-based monitoring system for forest governance is affordable and useful for policy review.
- There are no short-cuts to the field based approach when it comes to NFI and accurate data are needed.



Thank you for listening