Establishing Monitoring and
MRV System for Tanzania

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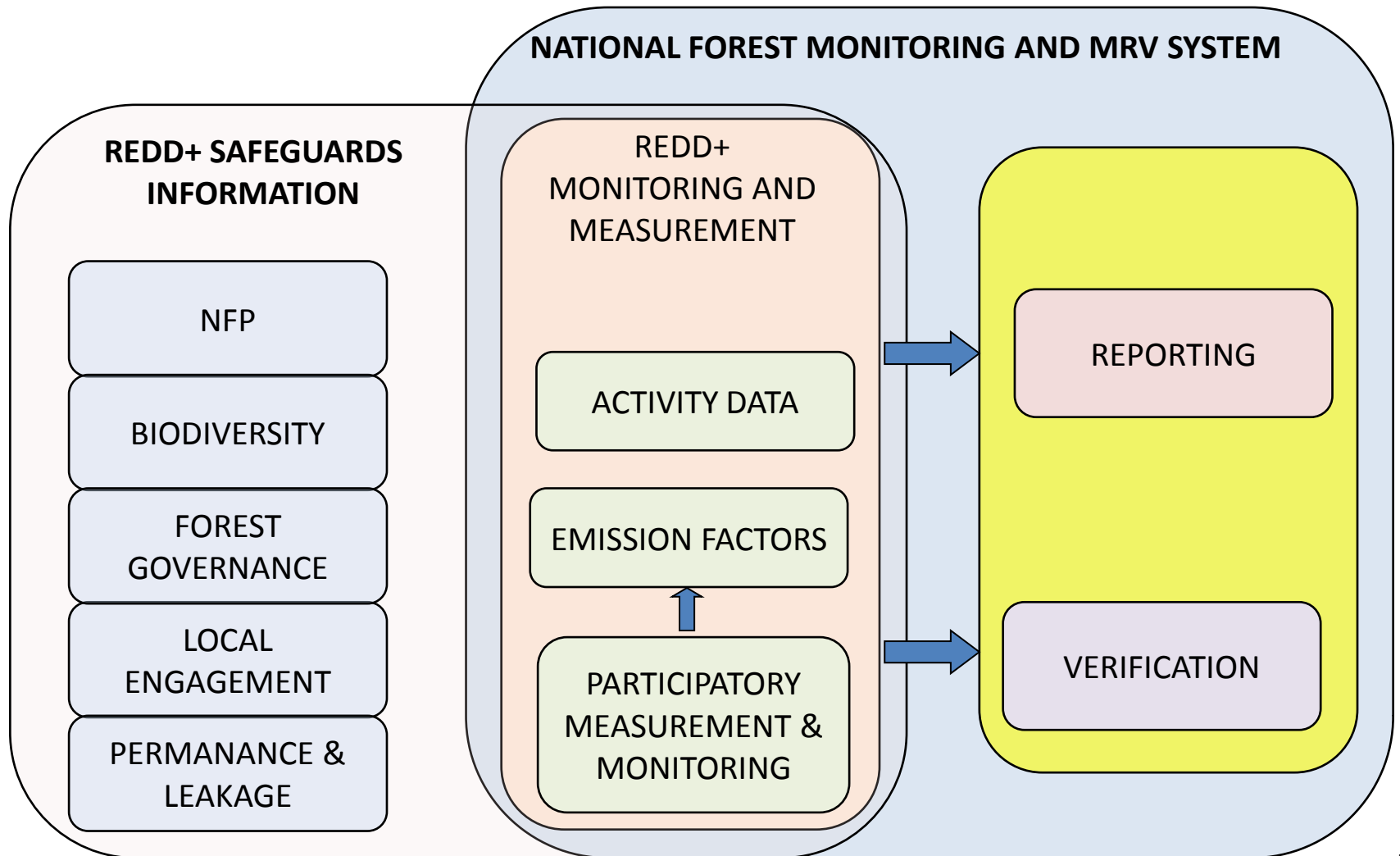**Mr. Nurdin Chamuya**

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on 1st December 2012

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Introduction

- **Basic requirement for REDD+ is establishment of baselines/REL/RL**

- **REL/RL benchmark against which additional carbon benefits as a result of carbon project can be determined.**

- **REL/RL is established based on guidance from Durban Decision -/CP.17**

- **Considerations are also taken to include Safeguard Information System as specified in the Cancun agreements Decision 1/CP.16**
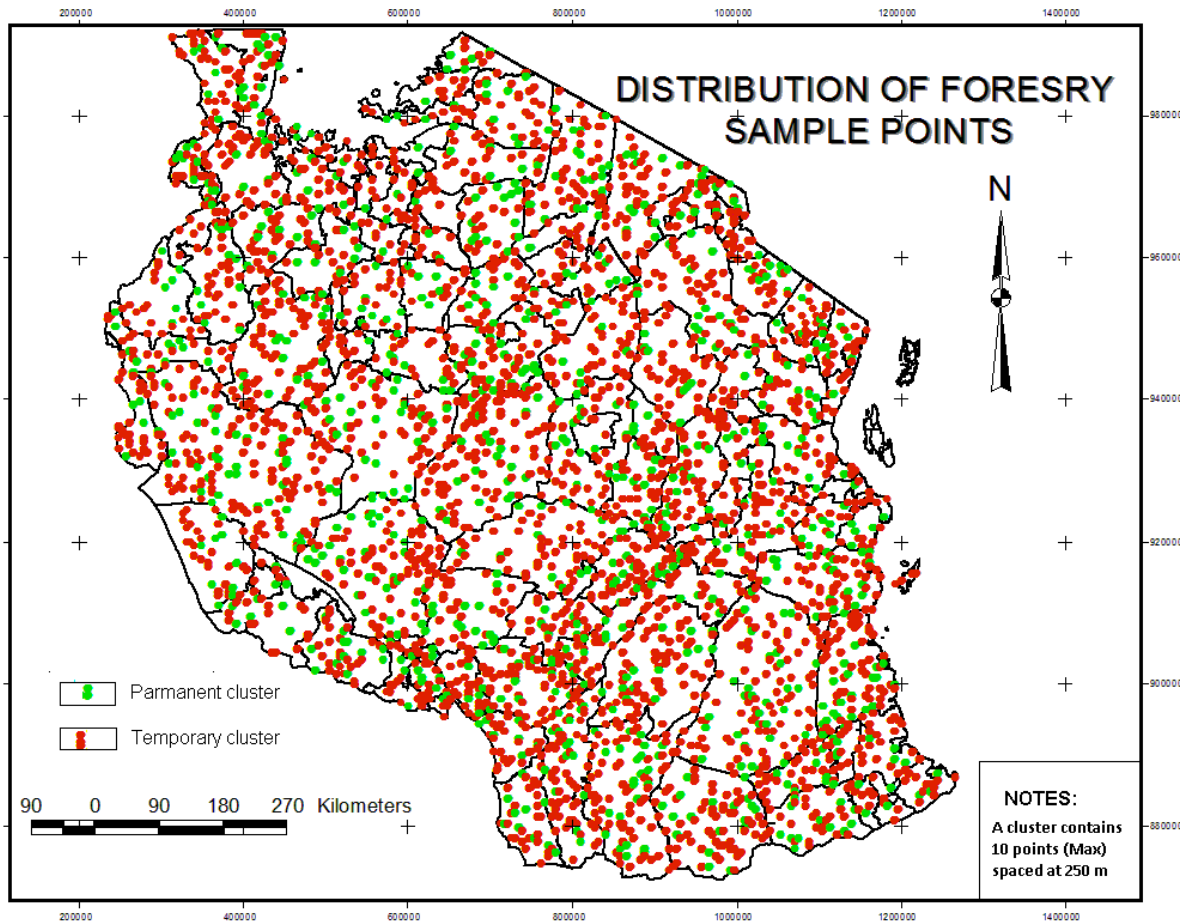
Introduction

NATIONAL FOREST MONITORING AND MRV SYSTEM

REDD+ SAFEGUARDS INFORMATION

- NFP
- BIODIVERSITY
- FOREST GOVERNANCE
- LOCAL ENGAGEMENT
- PERMANANCE & LEAKAGE

REDD+ MONITORING AND MEASUREMENT

- ACTIVITY DATA
- EMISSION FACTORS
- PARTICIPATORY MEASUREMENT & MONITORING

REPORTING

VERIFICATION

REDD+ Monitoring & Measurement

- Undertaking NAFORMA and ZWBS for the determination of REL/RL

- NAFORMA and ZWBS:

  ✓ build the capacity on national forest inventories and remote sensing,

  ✓ determine the current land use cover/forest extent,

  ✓ determine the current forest growing stock,

  ✓ identify drivers of deforestation and forest degradation, and

  ✓ design a forest monitoring system using permanent sample plots (PSPs).

- Also estimating historical deforestation and forest degradation and or growth rates

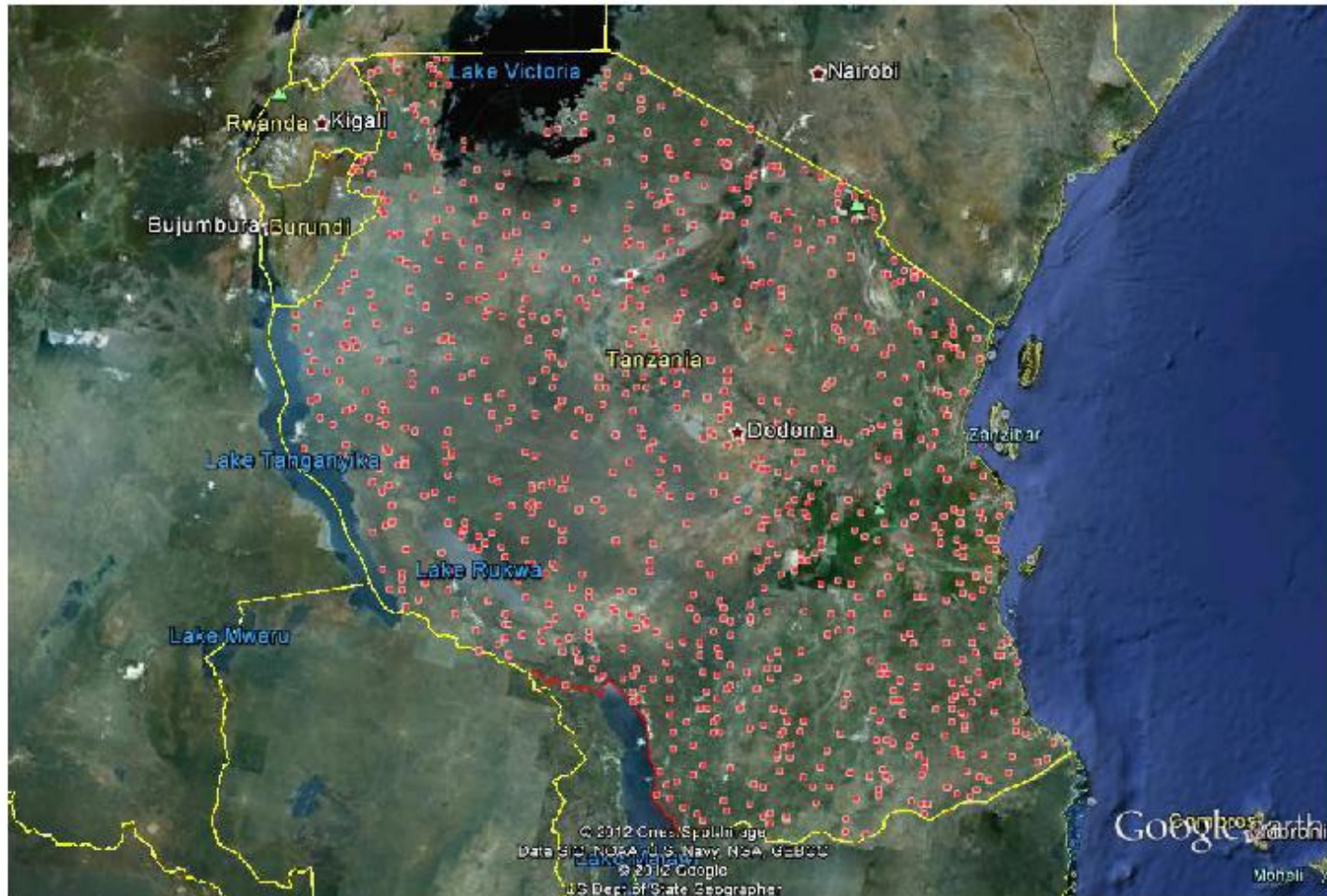# Tanzania: Field inventory design, location of plots

DISTRIBUTION OF FORESRY SAMPLE POINTS

N

Parmanent cluster

Temporary cluster

90 0 90 180 270 Kilometers

NOTES:
A cluster contains
10 points (Max)
spaced at 250 m

HH interviews linked to biophysical measurements

Emphasizes people living in or near forests

Appr. 3400 Sample Clusters of which app 850 are permanent sample clusters

Appr. 5000 HH interviews
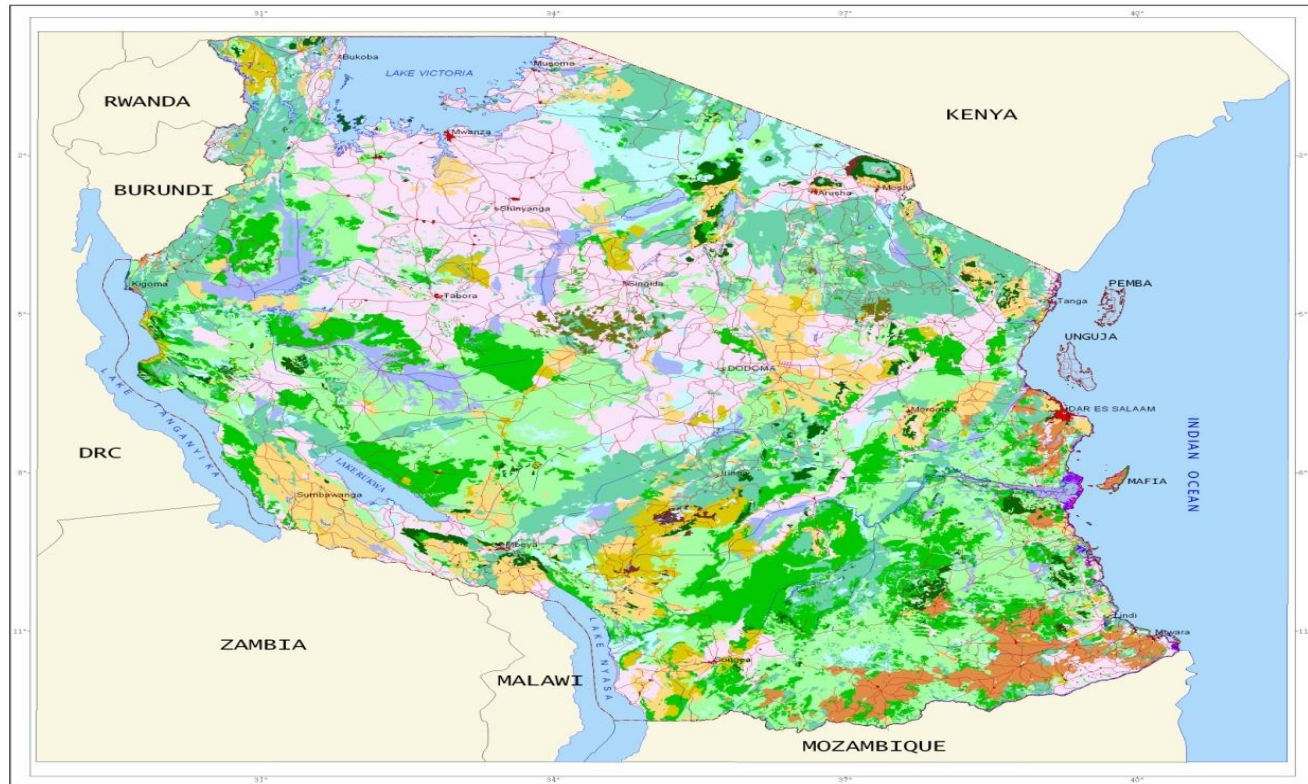
MAP OF TANZANIA: PERMANENT SAMPLE PLOTS

MEASUREMENTS OF TREES

LANDUSE - LANDCOVER MAP OF TANZANIA MAINLAND

Legend:
- Montane and lowland forests
- Mangrove forest
- Forest plantation
- Closed woodland
- Open woodland
- Thickets
- Bushland
- Grassland
- Wetland
- Water bodies
- Cultivated woodland
- Cultivated bushland
- Wooded crops
- Grains and other crops
- Built-up areas
- Open land
- Ice

- Main roads
- Main Rivers
- Major towns
- National boundary

Field survey & mapping:
GIS & mapping unit, Ministry of Natural Resources and Tourism
B.P. Mbilinyi from Sokoine University of Agriculture
Fieldwork completed in November 2011

Projection: Geographic coordinate system, Arc 1960
Units: Degree decimal

Source of thematic map:
Landsat TM5 images acquired between 2009 - 2011 and Google Earth images

Table: Mean volume (m^3/ha) by land use categories and vegetation type for Rufiji. NAFORMA 2011

Land use	Vegetation type 1	2	3	4	5	6	7	8	Total
1	58.37	51.38	47.99	0.35	-	-	4.93	2.43	46.5
2	66.30	48.77	54.74	13.44	-	-	14.13	-	49.2
3	66.53	53.01	21.93	1.06	-	0	0.00	-	49.1
4	34.76	28.20	17.57	3.59	4.79	-	-	-	20.0
5	-	-	8.54	16.86	25.47	-	-	3.25	23.7
6	-	28.03	12.88	-	-	-	-	-	24.7
7	-	-	-	-	-	-	-	47.07	47.2
8	7.15	-	-	-	-	-	-	-	0.4
9	-	45.69	-	4.50	-	-	0.00	9.46	12.0
Total	62.18	49.78	25.02	8.68	24.54	0	5.18	43.53	38.7

- = not possible to estimate, e.g., no observations in the category

Relative volume errors (CV), Mean volume 6.3% (of 38.71 m^3/ha)

Determination of REL/RL at Sub-national and project levels

- Nested baseline/REL/RL used to provide incentives to stakeholders within the country

- NAFORMA/ZWBS data will be fine enough to the district level

- Within a district, different forest regimes will account for their carbon levels in a similar way to the CDM approach

Determination of REL/RL at Sub-national and project levels

- Data at project level will be of high resolution

- Participatory methods will be applied in order to ensure engagement of local communities in the MRV process

Coordination of MRV

- National Carbon Monitoring Centre (NCMC) is established for coordinating MRV in the country

- Specifically NCMC will:

  - Develop, maintain and update of national carbon database,
  - Develop harmonised tools, guidelines and manual for forest assessment and monitoring
  - Train stakeholders on the approved carbon assessment methods
  - Analyse carbon data
  - Verify carbon data using appropriate guidelines
  - Submit results to the National REDD scheme and stakeholders

- The process of establishing the NCMC is underway

Challenges

- Foreseeing the compatibility issue during nesting of baselines at different levels

- Expensive process: human & financial resources

- Inadequate national technical capacity (high dependency on external assistance)

- Meeting expectations of different stakeholders

- Straggle to meet high standards with limited capacity

Thank you for listening!