FOREST MANAGEMENT AND CLIMATE CHANGE IN RWANDA

Dar es Salaam, December 2016

Felix Rurangwa &
Jean Nduwamungu

INTRODUCTION

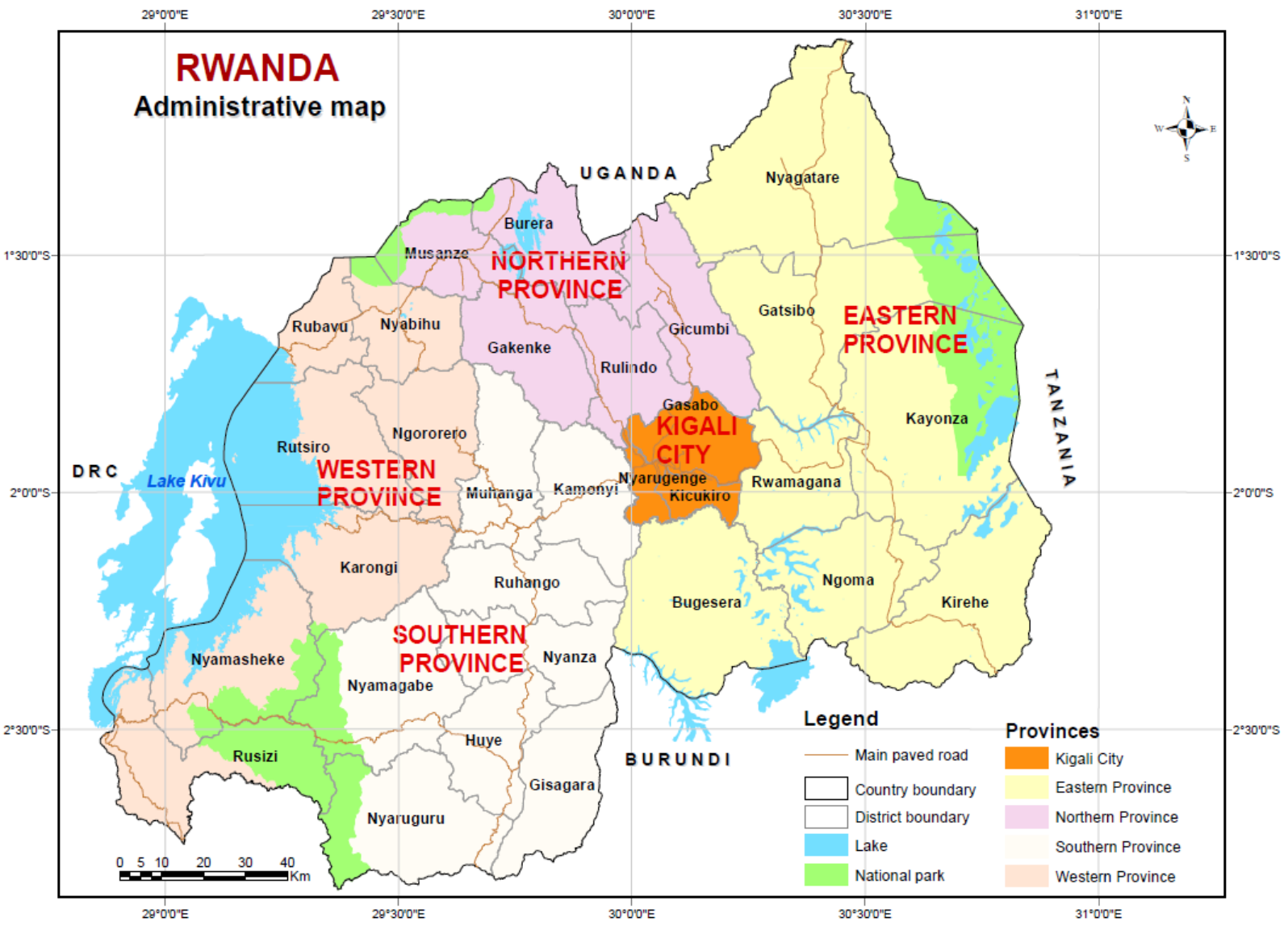
(I) RWANDA- General description

- **Total Area**: 26,338 km^2
- **Population** : 11,751,364 (January 2016)
- **Language:** Kinyarwanda, English & French
- **Density**: 446.1 habitants /km^2
- **Relief**: 900 m- 4500 m
- **Climate:**
  - Temperature and Equatorial climate
  - 2 rainy seasons (March-May, Sept-Dec)
  - 2 dry seasons (June-Aug, Jan-March)
  - Annual average temperature is 20°C.

Geographical Location

Source: UNCTAD, based on map of Africa by United Nations Cartographic Section, 2004.

MAP OF Rwanda



Kigali Convention Center –
Venue for the 28th Meeting of Parties which reviewed the Montreal Protocol in October 2016

Kigali City is green & Clean

Introduction (cont'd)

(ii) Institutional framework

Forests are managed under the Rwanda Natural Resources Authority (RNRA)

RNRA resulted from merger of former National Land Centre (NLC), former National Forestry Authority (NAFA), former Rwanda Office of Geology and Mining (OGMR), and former department of Integrated Water Resources Management that was hosted by the Ministry of Natural Resources (MINIRENA). This institution was established by the law No53/2010 of 25/01/2011 and has four departments:

i. The Department of Forestry and Nature Conservation.
ii. The Department of Lands and Mapping and Office of the Registrar of Land Titles
iii. The Department of Integrated Water Resources Management
iv. The Department of Geology and Mining

New re-structure will group in one unit:

i. The Department of Forestry and Nature Conservation.
ii. The Department of Integrated Water Resources Management

Introduction (cont'd)

Forestry and Nature Conservation Department

- Core objective:

Sustainable management of forest ecosystems and resources to optimize their economic and ecological functions by:

- increasing forest cover up to 30% of the country dry land by 2017/18;
- increasing productivity of forest woodlots;
- managing forest biodiversity and critical ecosystems;
- increasing the contribution of forestry and nature conservation to the national Gross Domestic Product (GDP) through:
  - » Promotion of technologies and adding value to wood products, and
  - » promotion of non-timber forest products and services

(III) PRESENT STATUS OF FOREST RESOURCES IN RWANDA

- Rwanda's total forest cover: 696,402 ha (**29.6% of the total dry land** of the country).

- Plantations: 413,274 ha **(59%)** - most dominant species being the Eucalyptus with **55%** (around 384,000 ha) and the second dominant species is Pinus with 2.6% (17,792 ha).

- Natural forests: 283,128 ha (**41%**) in which: Nyungwe National Park - 111,562 ha (**39%**), Akagera NP - 113,160 ha (**40%**), Volcano N P - 16,000 ha (**6%**), Gishwati-Mukura N P - 2,684 ha (**2%**).

Increasing forest cover up to 30% by 2017/18 (Trend)

Year	Plantations (Ha)	(%) as per national land area	Natural Forets (Ha)	(%) as per national land area	Total forest cover (Ha)	Current status % of land cover
2010/11	334,465	14.0	283,128	11.9	617,593	25.9
2011/12	353,961	14.9	283,128	11.9	637,089	26.7
2012/13	379,165	15.9	283,128	11.9	662,293	27.8
2013/14	390,507	16.4	283,128	11.9	673,635	28.3
2014/15	404,047	17.0	283,128	11.9	687,175	29.1
2015/16	413,274	17.4	283,128	11.9	696,402	29.63

IV) CURRENT ACTIVITIES IN ADAPTATION TO CLIMATE CHANGE

- **AGRICULTURE AND LAND USE**

- Creation of Radical/bench terraces especially on steep slopes
- Erosion control measures;
- Irrigation in valleys (rice and vegetables cultivation)
- Crop rotation to maintain soil quality, minimise erosion (reducing the risk of desertification)
- Crop diversification and crop mixing;
- Agroforestry practices on farms and pastures

CURRENT ACTIVITIES IN ADAPTATION TO CLIMATE CHANGE (cont'd)

Farming on bench terraces - Western Province of Rwanda

Newly constructed bench terraces - Northern Province of Rwanda

CURRENT ACTIVITIES IN ADAPTATION TO CLIMATE CHANGE (cont'd)

WATER RESOURCES

- Rainwater harvesting (roof catchment)
- Protecting lakes and river shores – prohibition of settlements (50m; 10m)
- Tree/shrubs/grasses planting along river / lake banks to protect them from erosion
- Methane gas extraction from Lake Kivu - a great potential source of energy (electricity & gas)

CURRENT ACTIVITIES IN ADAPTATION TO CLIMATE CHANGE (cont'd)

Mugogo river shores protection

CURRENT ACTIVITIES IN ADAPTATION TO CLIMATE CHANGE (cont'd)

FORESTRY

- Protection & management of existing forests ;
- Afforestation, reforestation and agroforestry ;
- Rehabilitation of natural forests (Gishwati)
- Rehabilitation of degraded forests

INFRASTRUCTURE AND HOUSING :

- Housing (imidugudu etc..) planning with consideration of CC impacts (floods, landslides, strong winds, etc..
- Protection of roads (heavy rains)

A current model Village that is intended to accommodate 200 families from high risk zone at Kabyaza village - in Western province of Rwanda

Cases of flooding damages before relocating people in high risk zones

Kitchen garden in each family

Bamboo plantation & processing

(V) STRATEGIES AND GUIDELINES FOR PRACTICAL IMPLEMENTATION OF ENVIRONMENTAL CONSERVATION ACTIVITIES

Current specific strategic activities:

(i) **Strengthening policy, legal and regulatory framework** for Sustainable Environment and Natural Resources management (laws & policies –e.g. Environment, Land, forest, water laws & policies)

(ii) **Sustainable management of renewable resources** (land, water and forestry) for improved socio-economic welfare based on Green Growth Principles (GGCRS-2011; NFI; NFMplan; FMIS, etc.)

(VI) OPPORTUNITIES AND CHALLENGES TO ADAPTATION TO CLIMATE CHANGE AND LIVELIHOOD

CHALLENGES

Main challenges to adaptation to climate change include:

i. Still weak
   - human technical capacity and monitoring and evaluation system
   - coordination of civil society and private sector as well as
   - mainstreaming climate and environment issues into national plans.

ii. High competition between forestry and other activities such as agriculture and settlement (e.g. farming even above 55% slope despite land use regulations)

CHALLENGES (Cont'd)

iii) **In mining**, despite signs of revitalization, the sub-sector works far below its capacity, relying largely on small scale mining that is export oriented and contributes to the environmental degradation;

iv) **Excessive use of fuelwood** – over harvesting of forests

(VI) OPPORTUNITIES AND CHALLENGES (cont'd)

OPPORTUNITIES

- Investors can find opportunities in **eco-friendly construction** and in helping cities prepare for changes in climate;

- **High political will** - political leaders are creating awareness on adaptation to climate change

- Increasingly strong **enabling environment** – Laws, Policies and strategies

(VII) AREAS OF PARTICULAR TRAINING AND RESEARCH NEEDS

- Training and research on how to introduce new tree species adaptable in drought areas which can replace Eucalyptus spp.
- Establishment of new seed sources to ensure availability of high quality germoplasm for afforestation;
- Production of improved tree seedlings for some trees species using tree biotechnology;
- How tobenefit from Carbon market & REDD projects

Programme	Funding/ Partners
1. Support program to afforestation and reforestation in North and Eastern Province (PAREF BE2) 2010-2016	Belgium
2. Support program to afforestation and reforestation Western and Northern Provence (PAREF NL2) 2013-2016	Netherland
3. Support to afforestation and rehabilitation degraded forests in Southern Province (PGREF) 2011-2017	AfDB
4. Support to Natural forest Management in Volcano National Park and Agroforestry in high plains VNP (PACEBCO) 2014-2016	AfDB
5. Support to watershed management in Kirehe (HRI/KWAMP) 2010-2016 6. Landscape restoration programme 2015 -2019 7. Sustainable Forestry, Agroforestry and Biomass Energy for Climate Resilience 2015-2017	IFAD IUCN FONERWA


THANK YOU
ASANTENI SANA