Murchison-Semliki REDD+ project

Miguel E. Leal

What is climate change/global warming?

- Increased greenhouse gasses in the atmosphere

- Increased hard surfaces due to Land use changes

What is causing climate change?

The natural greenhouse effect

Some energy is reflected back into space

Solar energy from the sun passes through the atmosphere

Greenhouse Gases (GHGs) trap some of the heat, warming the earth

GHGs

Earth's surface is heated by the sun and radiates out heat back towards space
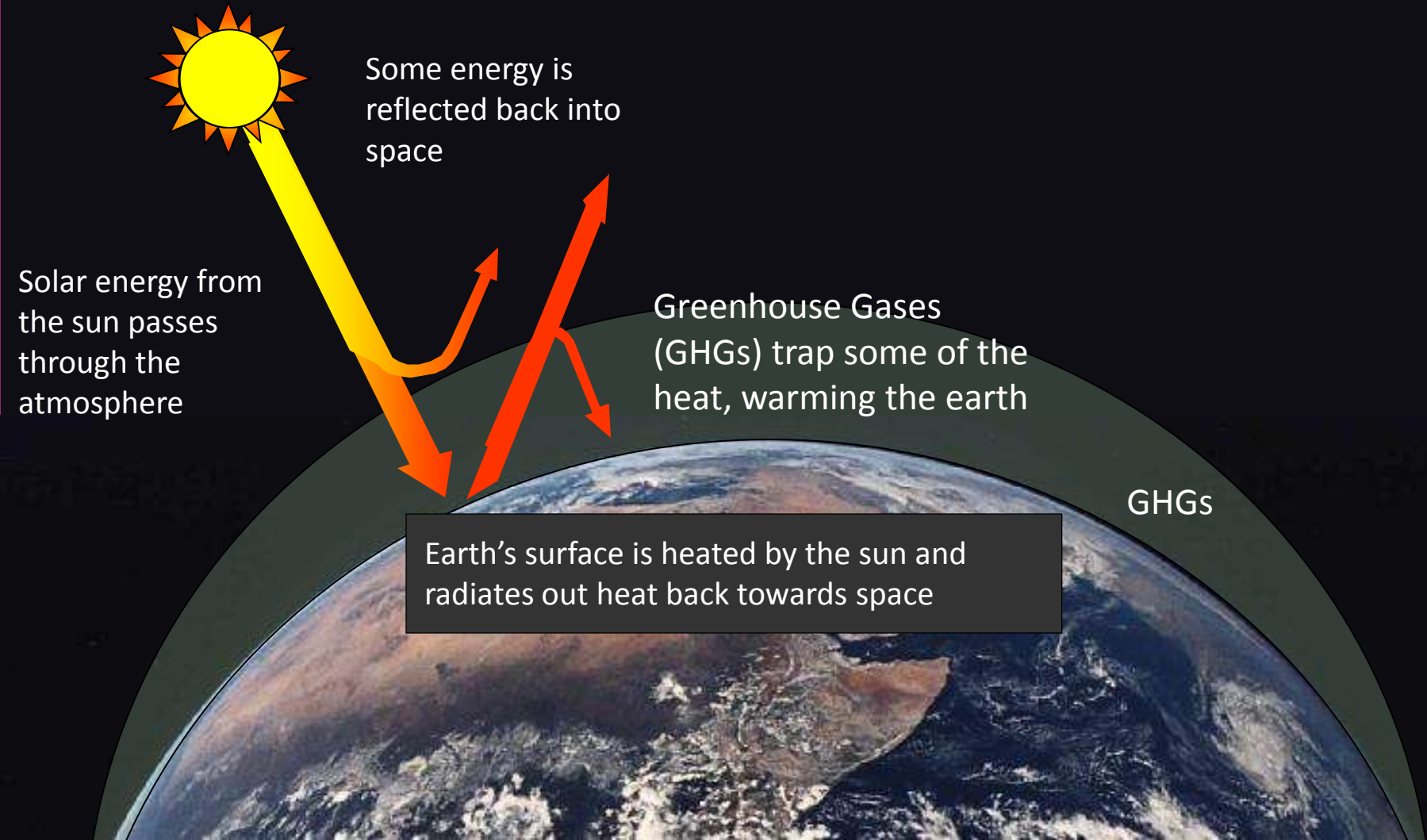
The enhanced greenhouse effect

Less infrared radiation (heat) escapes to space

Higher levels of GHGs trap more heat in atmosphere, leading to temperature increases

GHGs

GHG
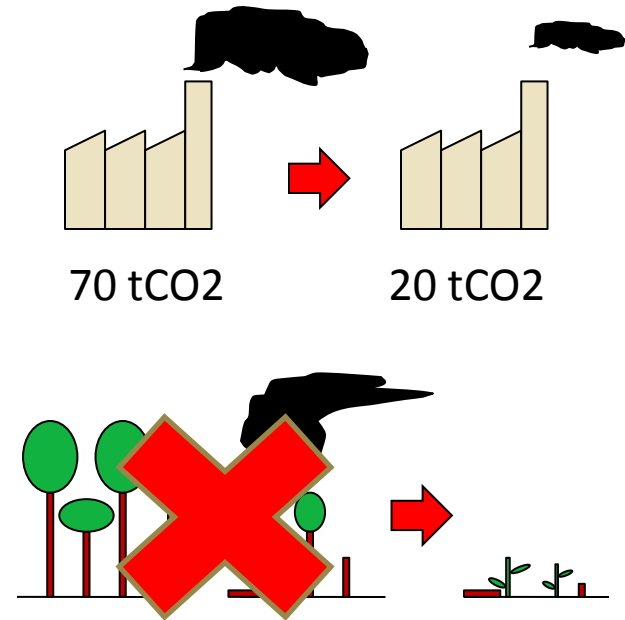
GHG

GHG
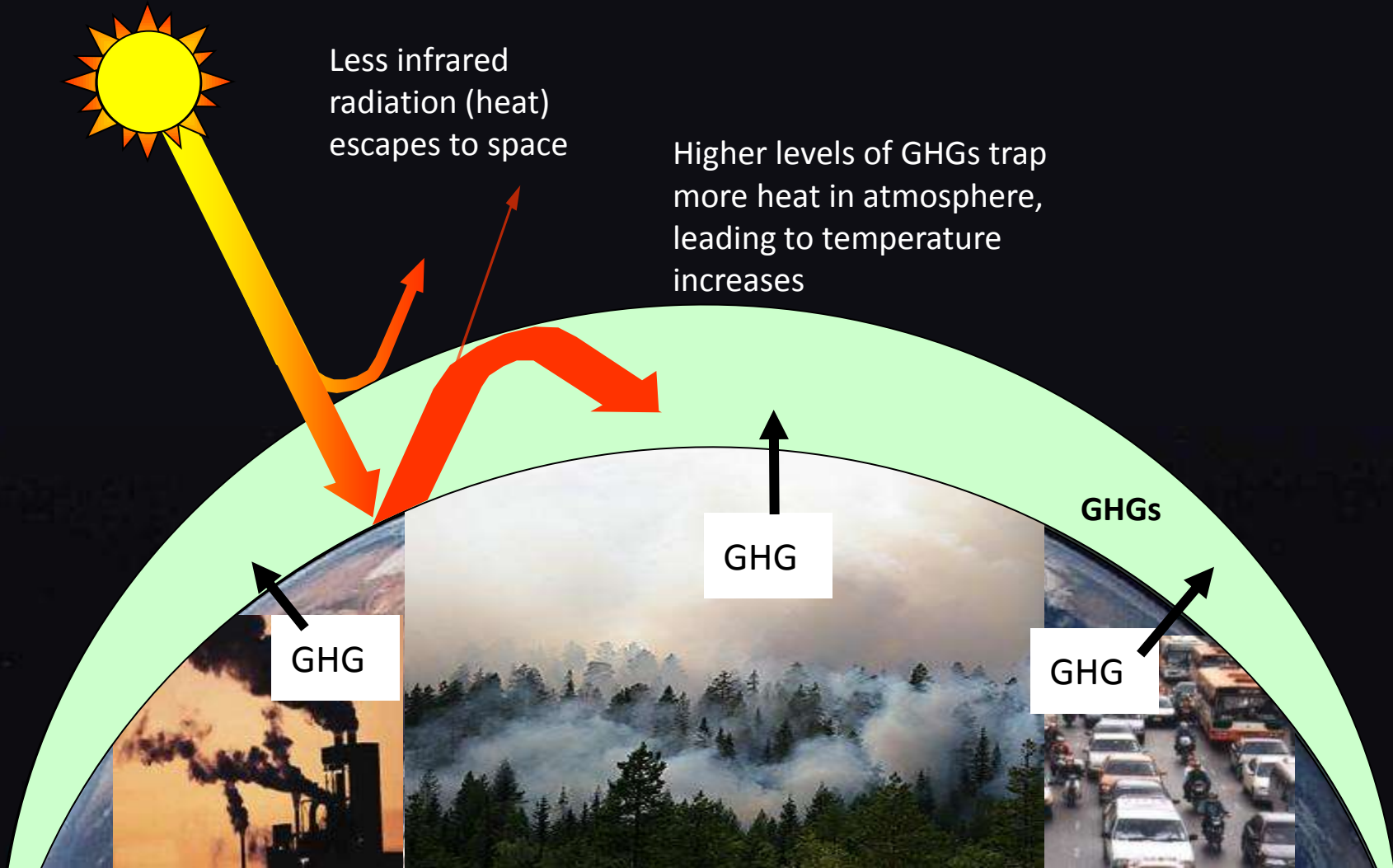
Climate change mitigation measures?

Two major **sources of CO2e**:

- Fossil fuel based **industry/transportation** (*developed countries*)

- **Burning forest** for agriculture (21% of global emissions; *developing countries*)

70 tCO2   20 tCO2

 REDD: Reduced Emission from Deforestation and forest Degradation (REDD)

Forest in the
Murchison-Semliki
Landscape

Legend

Forest cover in 2010

Tropical High Forest, fully stocked
Tropical High Forest, depleted
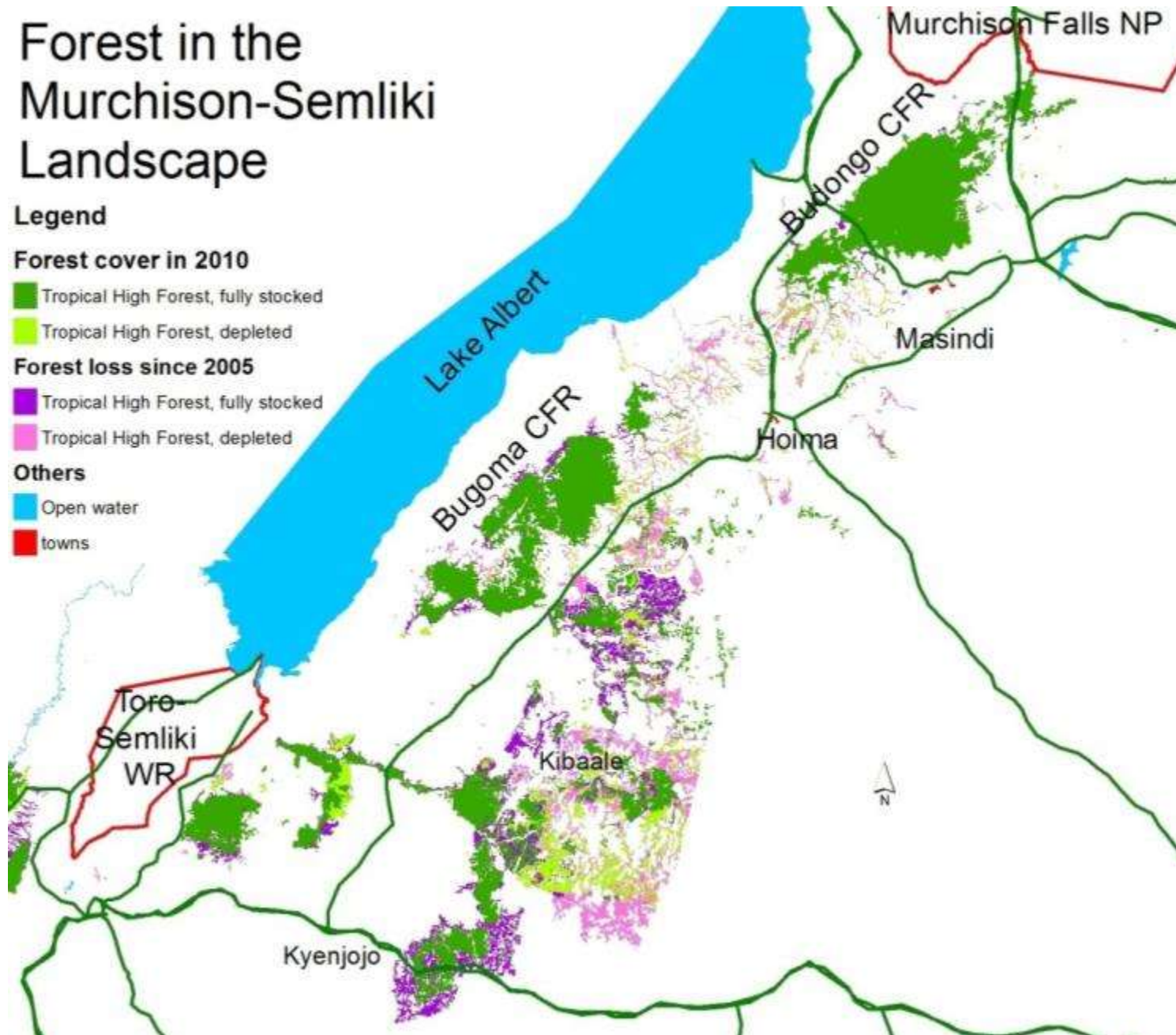
Forest loss since 2005

Tropical High Forest, fully stocked
Tropical High Forest, depleted

Others

Open water
towns

Murchison Falls NP

Budongo CFR

Lake Albert

Bugoma CFR

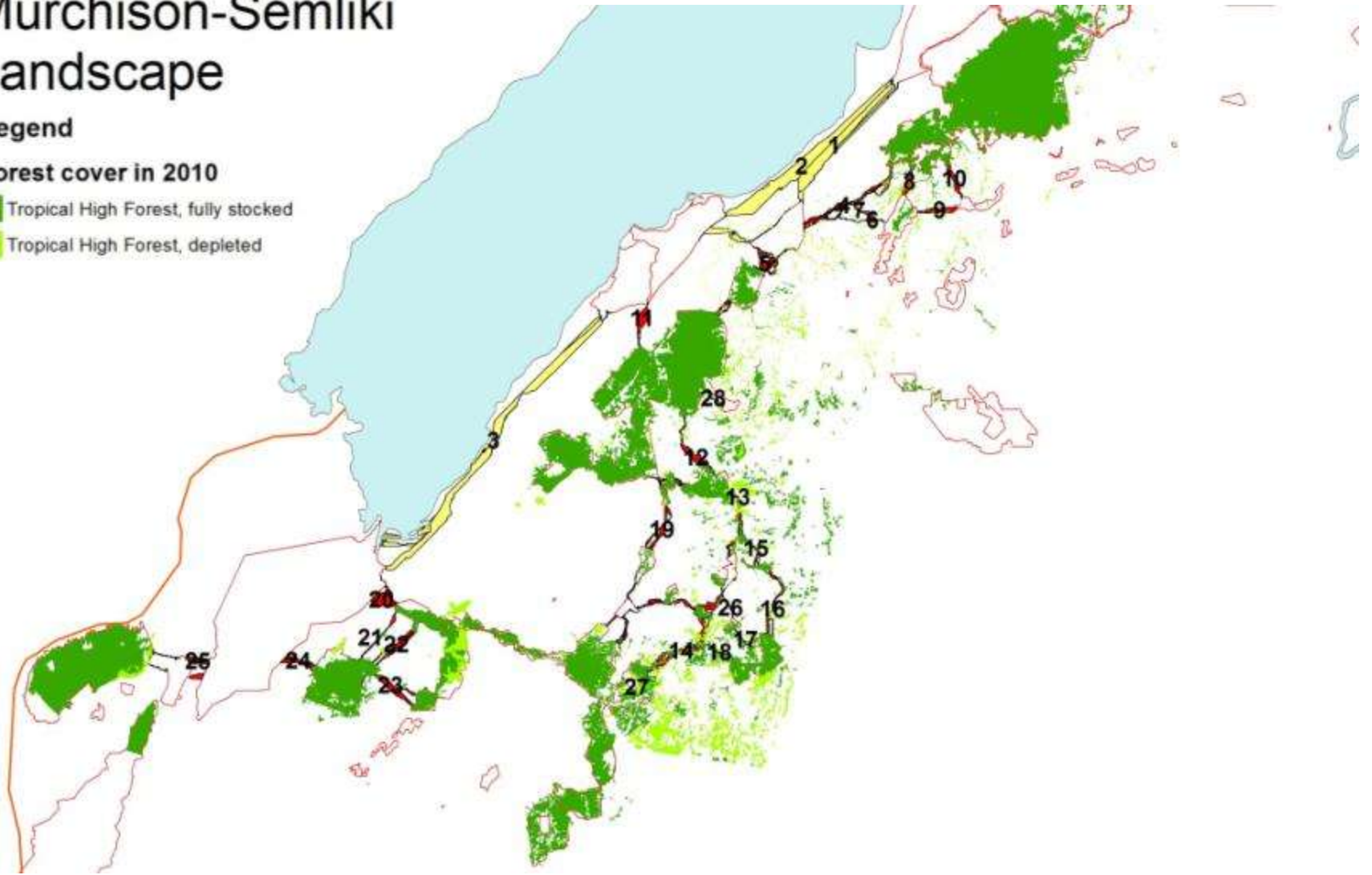Masindi

Hoima

Toro-
Semliki
WR

Kibaale

Kyenjojo

Forest in the Murchison-Semliki Landscape

Legend

Forest cover in 2010

■ Tropical High Forest, fully stocked

■ Tropical High Forest, depleted

Objectives of a REDD+ project

- Reduce Green house gas emissions
- Conserve biodiversity
- Improve the livelihoods of local communities

What are the main deforestation drivers?

- Poor farming for:
  - Subsistence
  - Cash
- Overpopulation
- Overharvesting for charcoal production
- Human-wildlife conflict
  - Crop raiding animals

Deforestation

- Current deforestation rate: 8673 ha per year (5.1%)
- In 10 to 15 years all privately owned forests will be cleared (122,867 ha)
- Depletion of the soils will soon follow
- Rural households are unable to sustain them selves

How to avoid any future deforestation?

- Compensation to conserve their forest (opportunity costs)
- Improve farming practices by training farmers in "conservation farming"
- Improve their cash income by providing access to more profitable markets
  - Green labeled/organic certification
  - Forest friendly cash crops, e.g. shade coffee/cocoa
- Access to micro financing through the establishment of village banks
- Improve their living conditions and adapt them to climate change

How develop a REDD project?

- Selling carbon credits to developed countries
- Selling unit:
  - tonne carbondioxide: (tCO2e)
  - tCO2e=3 to 5 USD
- Calculating:
  - amount carbon credits by converting biomass of trees into CO2 (C4=CO2) per hectare (tCO2/ha)
  - rate of deforestation (ha/yr)

REDD economics at Landscape level

- Carbon density :
  - On average: **275 tCO2e/ha** (max. 800 tCO2e/ha)
- Emissions:
  - Current: 8673 ha/yr * 275 tCO2e/ha= **2.4 million tCO2e/yr**
- Revenue (**net**): discount (25%) + non-performance (10%)
  - Annual mean: 2.4M tCO2e * 5 USD= **8.1 M USD/yr**
  - Per household: **90 USD/yr** or **216,000 UGX/yr**
- Opportunity costs
  - Per household income from forestry: **295,000 UGX/yr**

Community benefits

- Long-term versus short-term:
  - 15 yrs * 295,000 UGX/yr= 4,425,000 UGX
  - 30 yrs * 216,000 UGX/yr= 6,480,000 UGX
- No more food insecurity
- Higher and more stable income
- Adapted to climate change

What about Bwindi NP or BMCA?

- Agriculture to the edge of the park
- No more natural forest on private land
- With climate change communities are going to be stressed
- ➢ potential encroachment by local communities

Recommendation

- Start building into your GMP:
- a mitigation and adaptation strategy to avoid future conflict related to:
  - to climate change and
  - lack of natural resources for subsistence of your local communities

- Thank you for your attention!
- Questions?
- mleal@wcs.org