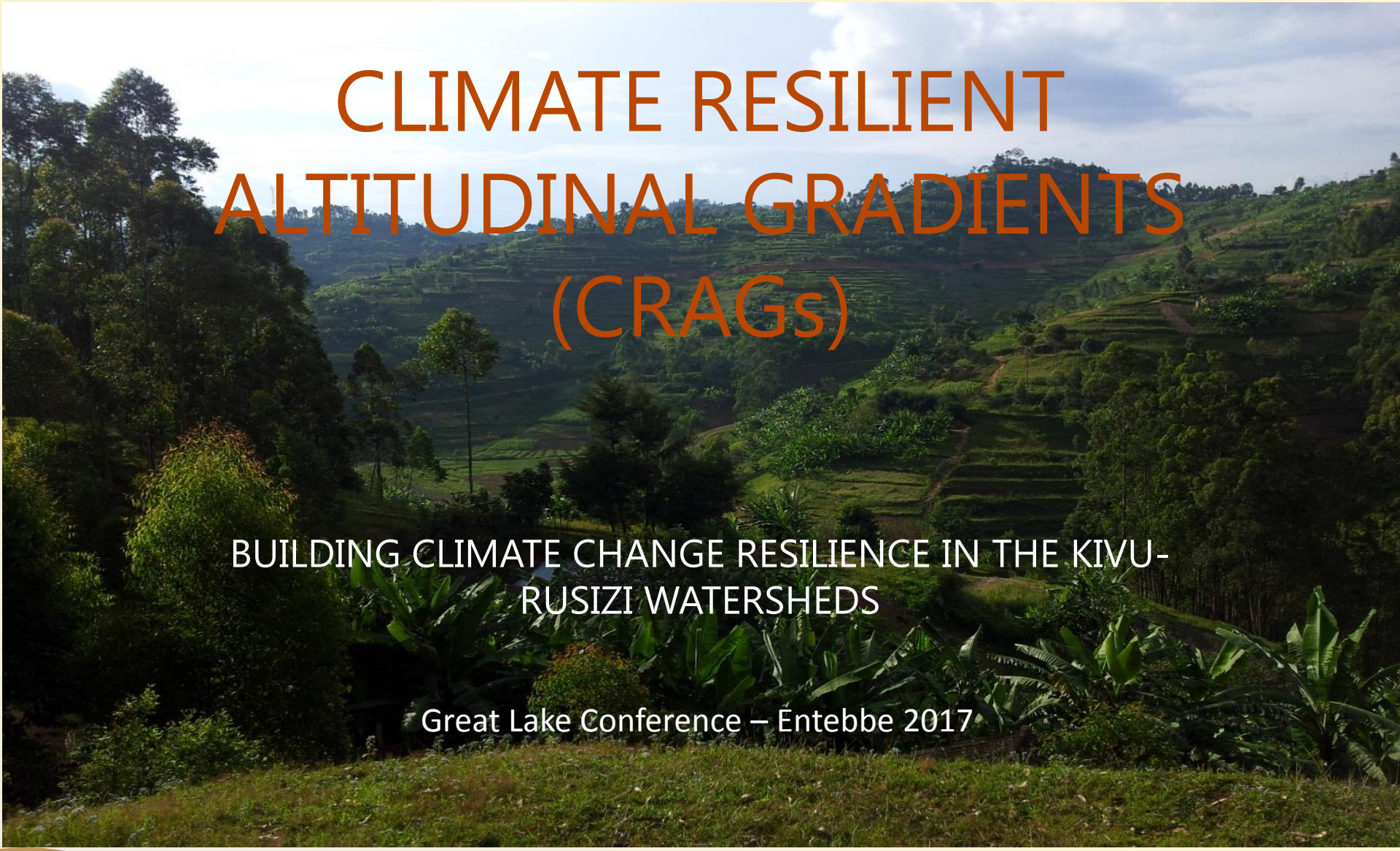


CLIMATE RESILIENT ALTITUDINAL GRADIENTS (CRAGs)

BUILDING CLIMATE CHANGE RESILIENCE IN THE KIVU-RUSIZI WATERSHEDS

Great Lake Conference – Entebbe 2017

Chris Magero

BirdLife INTERNATIONAL

CRITICAL ECOSYSTEM PARTNERSHIP FUND

MacArthur Foundation

Partnership for nature and people

WHAT ARE CRAGs?

- Climate-Resilient Altitudinal Gradients (CRAGs) are
  multi-scale landscape units with a minimum altitudinal range of 1,000 meters that are characterized by climate-resilient biodiversity and ecosystem service values.

Climate Change Projections

- Temperature: 2030 +1°C
  2060 +1.8-2.3 °C
- Rain: 2030 +10.2%
  2060 +19.5%
- Erosion, sedimentation, landslides, land degradation droughts and floods

RISK

WHY ALTITUDINAL GRADIENTS?

They are critical for human well-being

(THINK WATER)

WHY ALTITUDINAL GRADIENTS?

They are hotspots for disasters

(THINK LANDSLIDES)

WHY ALTITUDINAL GRADIENTS?

They are magnets for climate change impacts

(THINK RAIN AND FLOODS)

NOT FORGETTING.....

- Altitudinal shifts in Biodiversity

  (THINK EXTINCTIONS)
- Altitudinal Shifts in Diseases

  (THINK MALARIA)
- Loss of soils on slopes

  (THINK EROSION)
- Habitat Diversity

  (THINK LIVELIHOODS)

CLIMATE CHANGE THREATS TO ALTITUDINAL GRADIENTS

- Rainfall and Gravity (why are the tops of mountains rocky?) top soils to rivers sediments to lakes

Google Earth Image of Sedimentation entering Lake Tanganyika from the Rusizi River (2015)

CLIMATE CHANGE THREATS TO ALTITUDINAL GRADIENTS

- Extreme Climatic Events

flash floods

landslides

RISK

- Increasing Temperature

Habitats

Biodiversity

BUT ALSO OPPORTUNITIES…

- Rice Production

  (+400% IF IRRIGATED AND FERTILISED)
- Sediment Trapping

  (RICE IN RUSIZI DELTA)
- Increased Carbon Stocks (REDD)

  (MONTANE FORESTS)
- Investments in Water Harvesting

  (TRAPPING FLOOD WATERS)

CLIMATE CHANGE RESILIENCE

Resilience is **the capacity of social, economic, and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity, and structure, while also maintaining the capacity for adaptation, learning, and transformation.**

More simply: Bouncing back, coping with change, being tough, overcoming problems, staying on course, showing strength

ALTITUDINAL GRADIENTS (AGs) IN THE GLR

- Great Lakes altitudes: 363-2700 m. asl

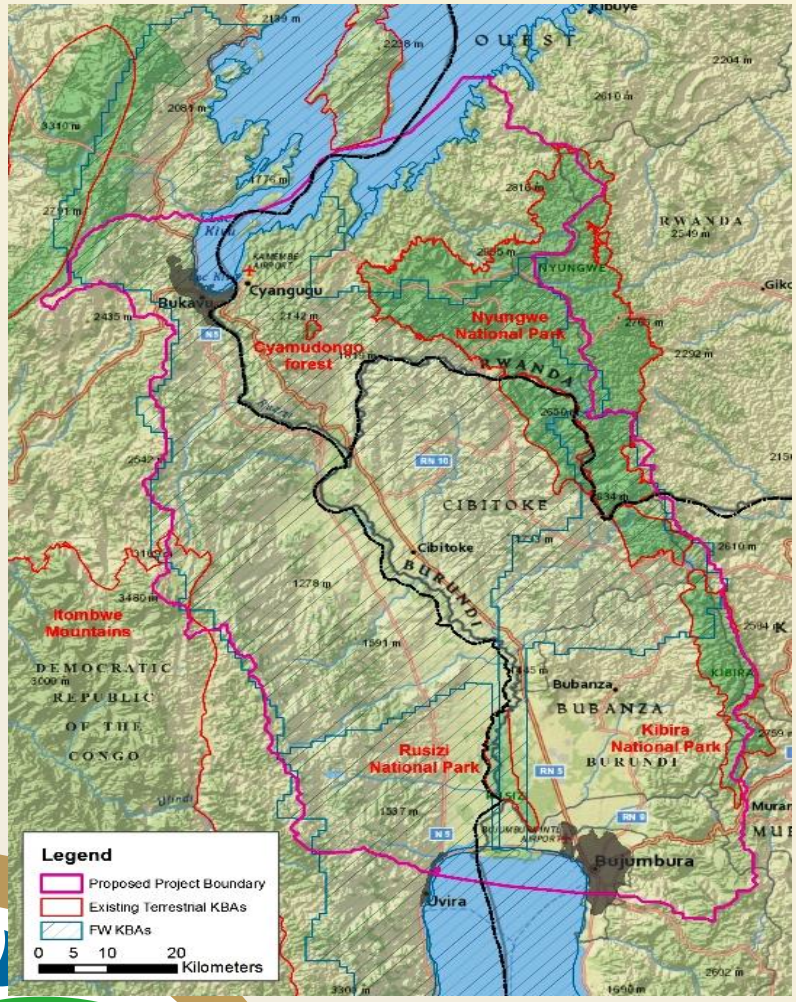
  (Turkana – Upper Nile)
- Catchments dominated by AGs
- 7 AGs identified in MacArthur GLR Strategy

  (Min. range 900 m, Lake Niassa)

  (Max. range 4200m, Lakes Edward and Albert)
- Kivu-Rusizi CRAG 2700 m

"Rwanda is the land of a thousand hills"

THE SOUTH KIVU AND RUSIZI CRAG

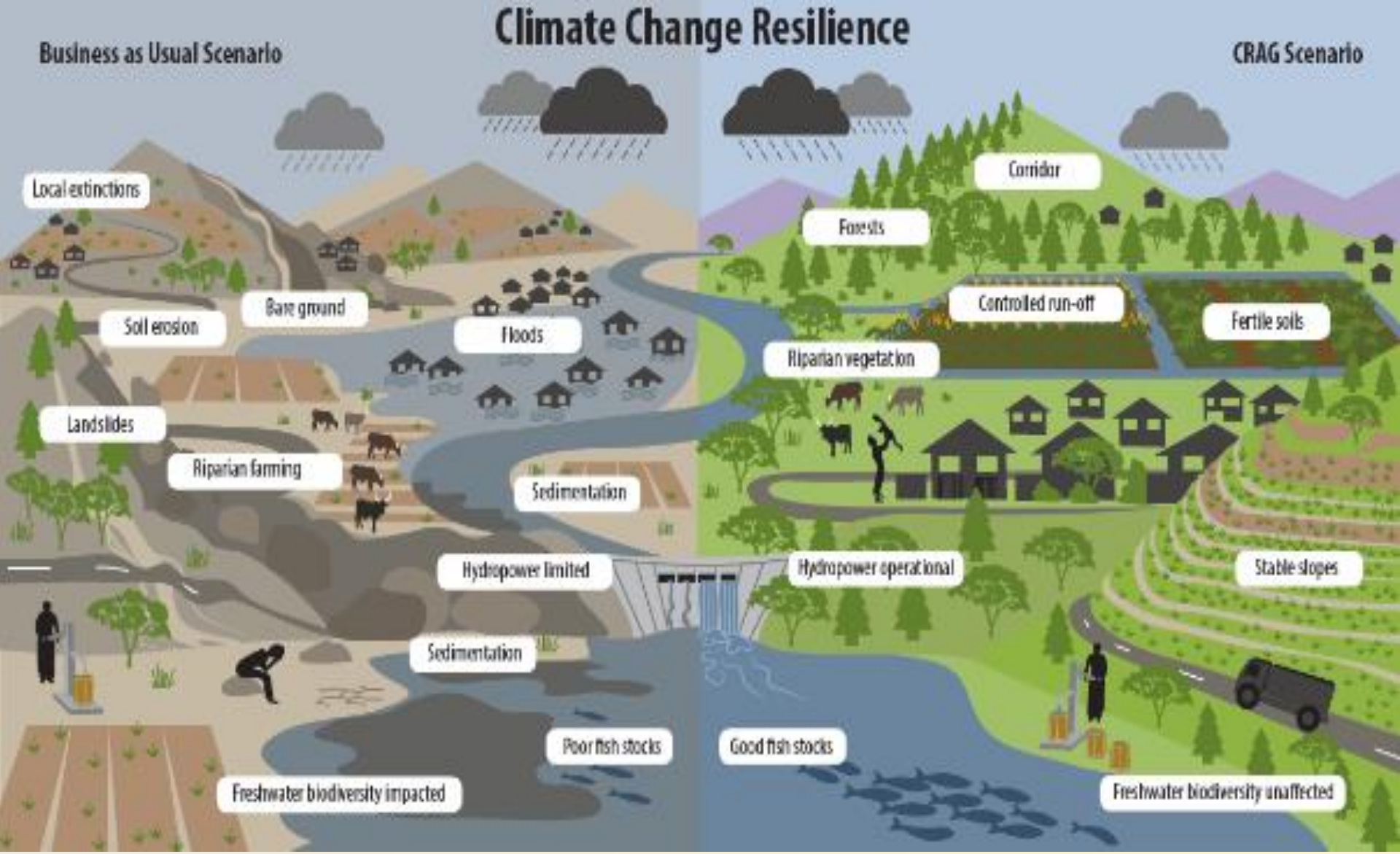


CRITICAL MANAGEMENT ISSUES

- ❑Non-sustainable agricultural practices
- ❑Water quality affecting human health and fisheries
- ❑Soil erosion
- ❑Fertiliser run-off particularly in delta
- ❑Increasing and unregulated use of pesticides
- ❑Sedimentation in lake impacting on invertebrates and fisheries
- ❑Vulnerability to floods and landslides
- ❑Major Development Initiatives (dams, irrigation, mining, rice)

TURNING AN AG INTO A CRAG

1. Be proactive
2. Be participatory
3. Use evidence-based approach
4. Use the past to anticipate the future
5. Understand the landscape
6. Be spatially explicit
7. Act locally
8. Monitor and adapt



A country that has turned its AGs into CRAGs has gone a long way to achieving national climate change resilience.

OUTLINE OF THE RUSIZI-KIVU CRAG INTERVENTION PLAN (CIP)

BACKGROUND

Chapter 1: Introduction

STATE

Chapter 2:The Kivu-Rusizi Landscape

Chapter 3: Socio-economic, Policy, And Institutional Context

BENEFITS

Chapter 4: Biodiversity in the Basin

Chapter 5. Ecosystem Services

PRESSURES

Chapter 6: Climate Change

Chapter 7: Threats

RESPONSES

Chapter 8 Interventions

A PILOT PROJECT FOR THE KIVU-RUSIZI CIP

Sourcing Sedimentation: Developing spatially explicit counter solutions in three rivers in the Kivu-Rusizi catchments

Next Steps

- Pilot CIP project in the Kivu-Rusizi basin
  - Sediment Fingerprinting
  - Interventions
  - Informing and influencing policy

The global Partnership for nature and people

Thank You – Merci Bien!