



What drives deforestation in the Congo Basin?

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Lessons from an Economic modeling

November 10, 2011

Background – Congo Basin

Total dense forests = 162 million hectares
(Etat des forets 2008)

2nd largest rainforest area of the world

80% of the area covered by forests

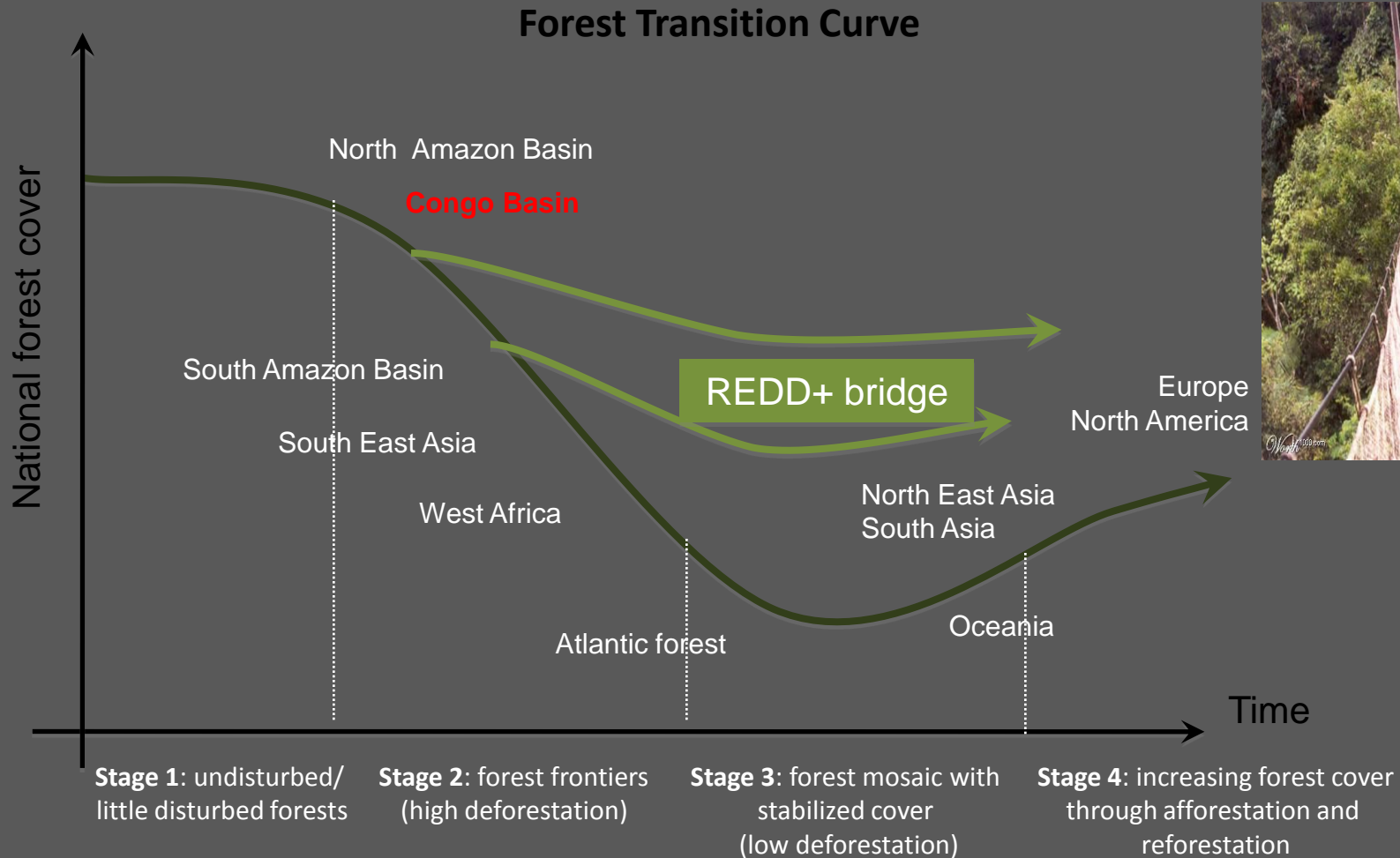
During the last decade low level of deforestation
around **0.16% per year** (Duveiller et al., 2008)

Persistent Conflicts

Lack of Infrastructures



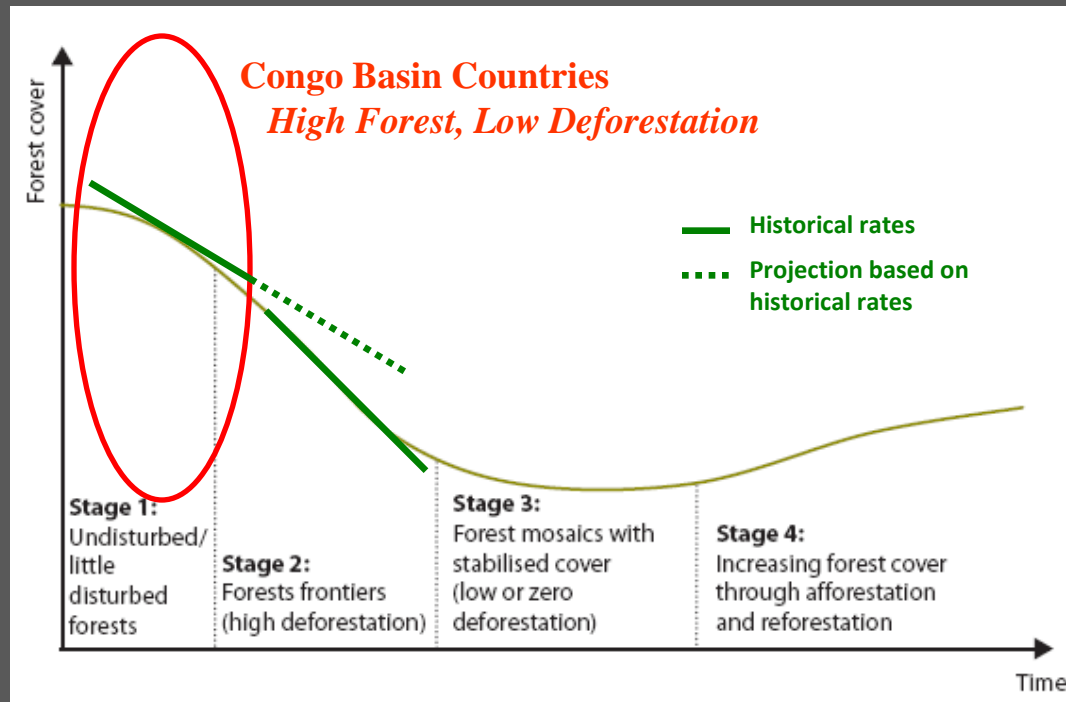
Background – Congo Basin (2)



Signals exist on new dynamics of deforestation (external/internal drivers)

→ Congo Basin argue that they are at a **turning point**

Why this exercise for the Congo Basin?



Using only **historical data** is unlikely to be relevant to CB countries

Use a **modeling tool** to better understand the potential future trends of deforestation

Objectives

What was the objective?

- Immediate:** provide an in-depth analysis of the major drivers of deforestation and forest degradation for the next decades in the countries of the Congo Basin
- medium-term:** provide the countries and their decision-makers with scientifically-sound analytical tools that can help them better understand how the development of economic sectors can affect the forest cover

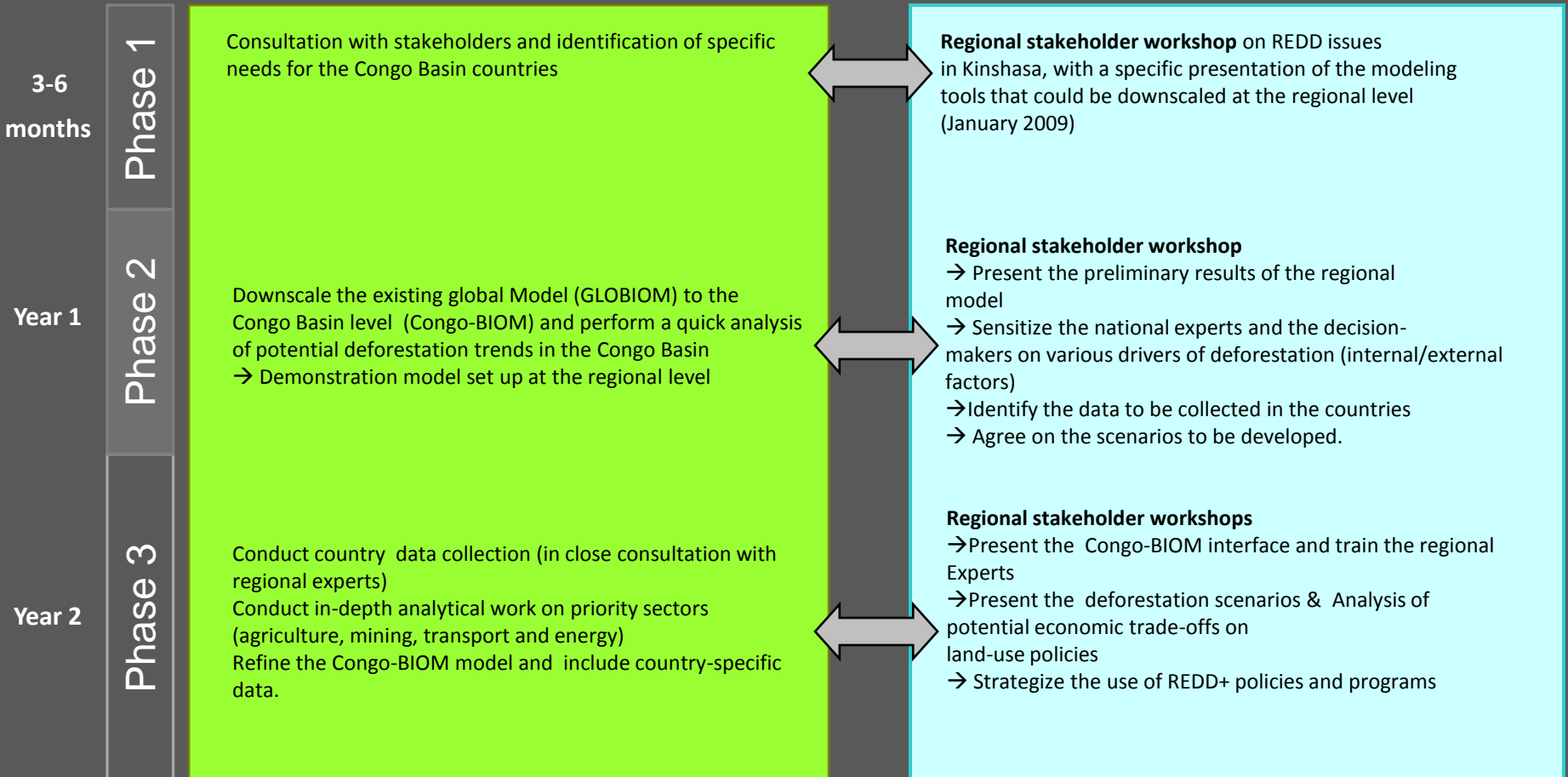
What was NOT the objective?

- Develop Reference Levels for the Congo Basin countries
Why? Regional exercise, lack of data

Approach adopted

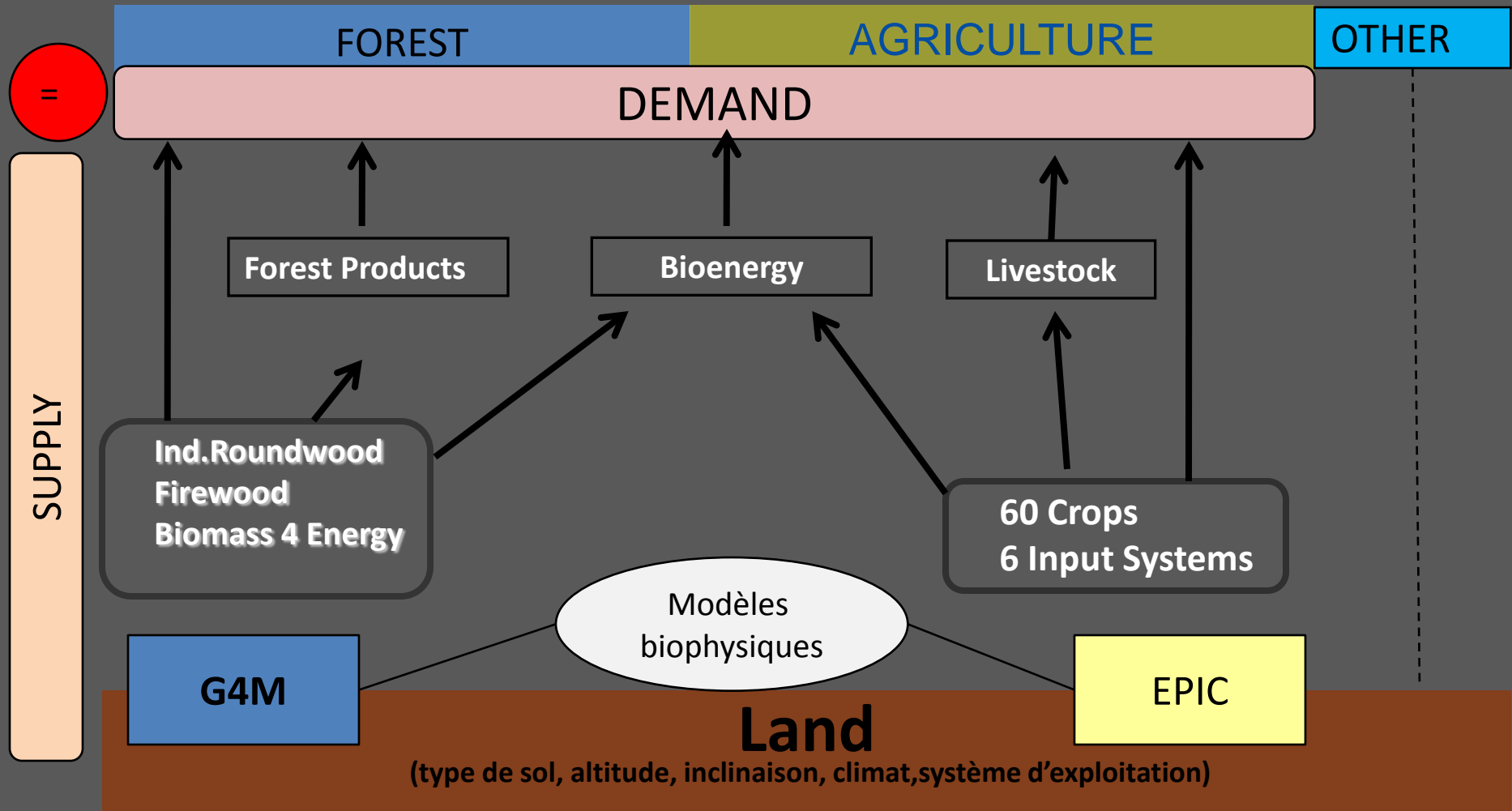
Modeling exercise & Analytical work on deforestation trends in the Congo Basin

Consultation & Sensitization with regional experts



IIASA - GLOBIOM

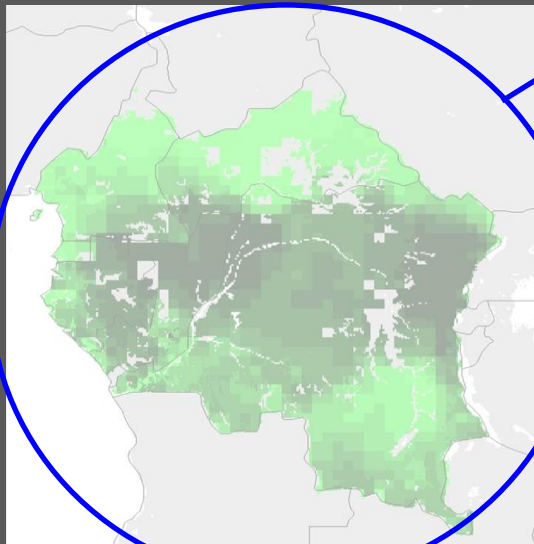
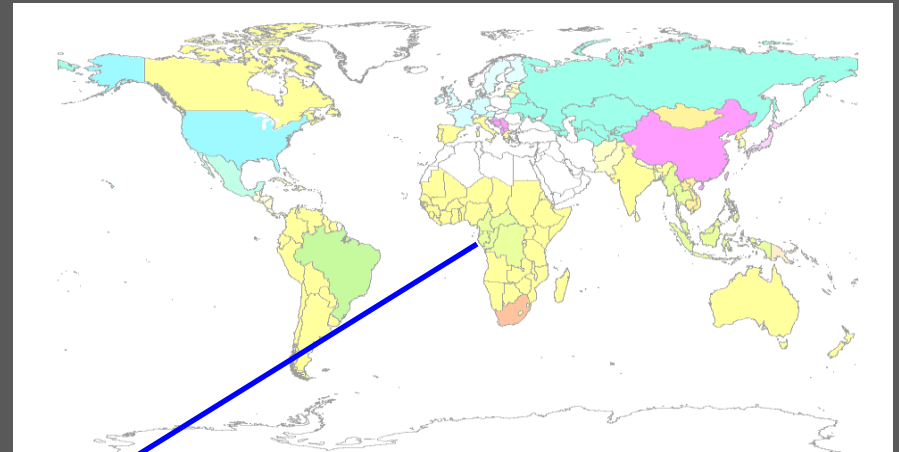
Global Biosphere (Optimization) Model



Presentation of the model

Global coverage

- 28 regions
- Endogenous prices
- Bilateral trade flows



Downscale at Congo Basin level → CongoBIOM

- 1550 Simulation Units
- Detailed infrastructure network

Model application

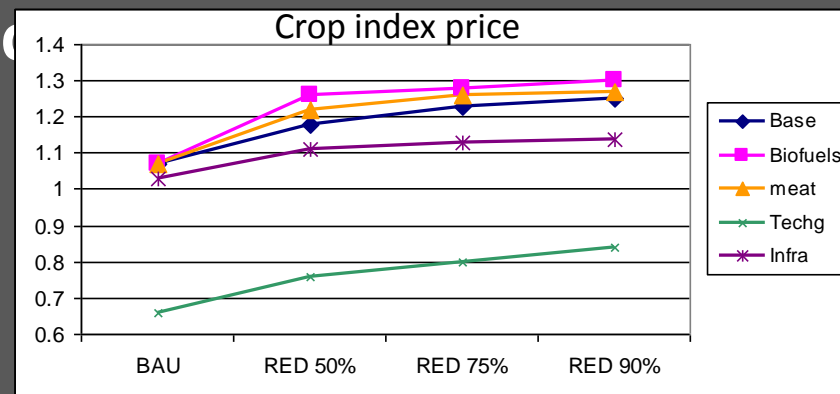
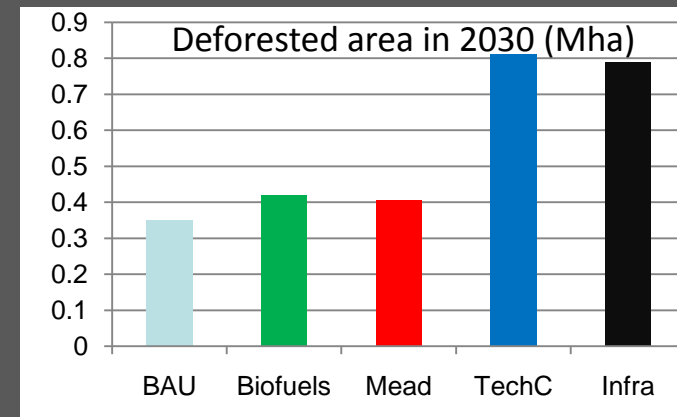
Simulation horizon: 2000–2030

Scenarios

- Biofuels (“Demand for 1st generation biofuels in the world is doubled compared to the 2030 projections”)
- Meat (“Increase in global meat consumption by 15%”)
- Technological change (“Yield increases of 30% for coffee and cocoa and 100% for other crops”)
- Infrastructure improvement

Sensitivity analysis : REDD policies

- 50%, 75%, 90% reduction of global deforestation compared to the situation Business As Usual (BAU)



Model application

Infrastructure scenario

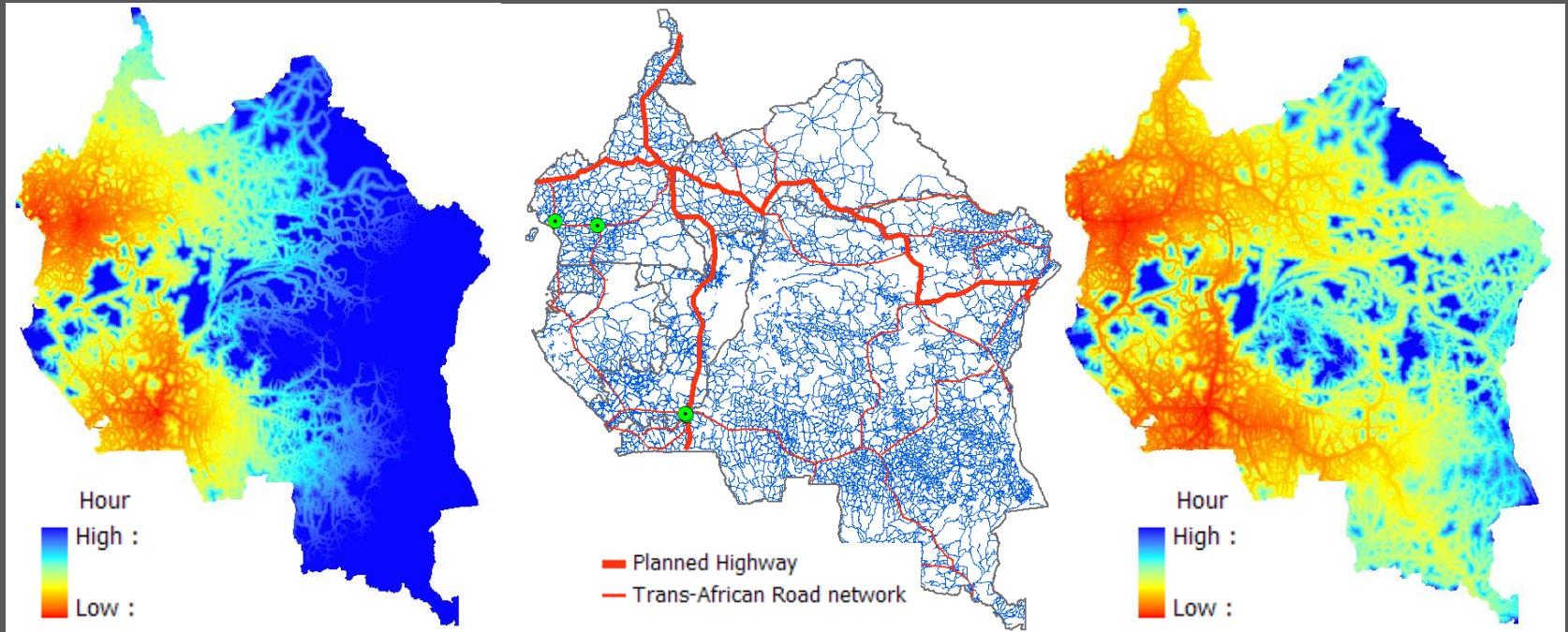
Transport time with existing infrastructure



Scenario



Transport time with completed Trans-African Road network



Average = 40 hours

Average = 23 hours

Results – Dissemination

Reports under finalization

Main report: REDD+ in the Congo Basin – for a better Development
Sectoral reports: Agriculture, Mining, Transport, Energy
Modeling report

Brochures for a wide dissemination

REDD+ in the Congo Basin
For a better development

The Congo Basin forest ecosystem is the world's second largest contiguous block of tropical forest on the planet, having several new biodiversity and a high level of resilience. It forms an integrated ecological and economic system with the rest of the Congo Basin countries. Congo Basin countries refer to the Republic of Congo, the Democratic Republic of Congo, the Republic of Equatorial Guinea, the Gabonese Republic, the Central African Republic and the Republic of Cameroon. The Congo Basin forest performs valuable ecological services, such as flood control and climate regulation, but is under threat. With the huge amount of carbon stored in its abundant vegetation, this is further seen as a buffer against global climate change. More than 30 million people live in the Congo Basin forest area, most of who rely on its forest products. In all of the six countries, forestry is a major economic sector, providing the main livelihoods for urban and rural populations, and contributing significantly to export revenues and fiscal revenues.

The Congo Basin forests may be at a turning point, heading to higher deforestation and forest degradation rates. The Congo Basin forest countries have not met the targets set for the tropical forest area. In 2007, the Congo Basin forest area was 1.3 billion hectares, down from 1.4 billion in 2000. The Congo Basin forest area is expected to decrease over the 2000-2020 period. However, there are signs that the Congo Basin forest countries could be better equipped to meet the challenges of the 21st century. The Congo Basin forest countries could be better equipped to meet the challenges of the 21st century. The Congo Basin forest countries could be better equipped to meet the challenges of the 21st century.

The REDD+ mechanism should foster a green growth that increases economic development and preservation of forests. The Congo Basin countries are well suited for the integrated economic growth in the coming years as they have abundant natural resources. These resources include a variety of forests, including equatorial forest, high altitude and semi-deciduous forest, and dry forest. The Congo Basin forest countries have abundant natural resources. These resources include a variety of forests, including equatorial forest, high altitude and semi-deciduous forest, and dry forest. The Congo Basin forest countries have abundant natural resources. These resources include a variety of forests, including equatorial forest, high altitude and semi-deciduous forest, and dry forest.

Agriculture
A neglected sector with vast potential
Sector Break (Continuous)

Energy
A huge dependency on wood-based biomass, unlikely to decline
Sector Break (Continuous)

Transport
Congo Basin is a huge infrastructure bottleneck
Sector Break (Continuous)

Mining
Threat or an Opportunity for the Congo Basin?
Sector Break (Continuous)

Agrowing demand
Woodfuel and particularly charcoal continues to be the main energy source in the Congo Basin. The Congo Basin charcoal production is expected to increase significantly over the next 20 years. The Congo Basin charcoal production is expected to increase significantly over the next 20 years. The Congo Basin charcoal production is expected to increase significantly over the next 20 years.

Fig. 1. Cambodia's Renewable Energy Potential

Fig. 1. Annual Evolution and Forecast of the Values of Prices of the Congo Basin's Main Minerals

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Thank you !