

Introduction

- Land plays a crucial role in the development process of LMB
- Land use by agriculture and forestry sectors and changes in land use patterns over time also play a crucial role in climate change mitigation and adaptation.
- Land use patterns in LMB expected to change dramatically over time as a consequence of several global and local processes that interact at various scales and domains
- A popular approach to assess the future of complex systems and

identify policy alternatives is to implement scenario analyses using models or a combination of models

Purpose of the Land-Use Change Scenarios

The aim objective is to provide better insights into the future development of land-use change in LMB and analyse how this relates to large scale development projects, **and food security** in LMB. Main questions that will be addressed are:

- - What is the impact of socio-economic development on land use and land-use change for the period **2010-2040**
- - What is the spatial pattern of land-use change in LMB ?
- - What are the implications for **food security**?

Approach

- The study will apply an innovative assessment method which integrates a global macro-economic Computable General Equilibrium (CGE) model with a 'local' spatial land use allocation model to analyse future land use patterns in LMB under various scenarios
- The global –to-local model combination is used to implement **four** scenarios for the period **2015-2040**:
 - Baseline scenario, reflecting 'Business As Usual' (BAU), simulates an economic growth path for LMB and the rest of the world assuming no implementation of new policies
 - **High , medium and low** Economic Growth (HEG) scenario, which implements the growth target incorporated in the Socio-Economic Development Strategy (SEDS, **2010**) of MCs and yield targets of Agricultural Development Plan

Data

1. General data
 - Population/Demographic
 - population density
 - etc..
2. Economic data
 - Major crops ; cash crops, plantations, etc...
 - Planting areas of major crops
 - Livestock sector; poultry, cattle , etc...
 - Commercial forestry sector
 - Fisheries/aquaculture
 - etc..
3. Land use data (Land cover and Land use data)
 - land use policies, land concession, zoning,
 - land cover maps
 - protected areas
 - production forest
 - mining,etc.

Driving Factors of Land Use Change

- **Direct drivers** are immediate actions or activities which cause a change. These causes are usually –but not always– local in scale (i.e. producers or household level) and involve a physical action limited to specific agricultural activities.
- **Underlying/indirect drivers** are more diffuse in nature and usually operate at a larger scale, such as regional or national level. They influence direct drivers through incentives, such as economic, technological, or demographic. Both direct and underlying factors interact with one another and have feedbacks with each other.

Driver Forces of Land-Cover Change Scenarios

- a) **Population/Demographic changes**
- b) **Agricultural productivity**
- c) **Soil functions**
- d) **Technological**
- e) **Economic activities and growth**
- f) **Global trends**
- g) **Policy scenario of land use**
- h) **Land markets (selling)**
- i) **Non-Agricultural Land Use**

Steps

1. AIP draft concept/scope of scenario development (June 2015)
2. Organise regional meeting to discuss and agree on scope of scenarios , method, data (June)
3. working with concerned line agencies / experts, data collection (July-August)
4. Organise regional meeting (August)
5. AIP team draft scenarios development (Sep.)
6. Organise regional meeting to agree on sector scenarios (Sep.)