Mapping – opportunities, limitations, way forward

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UN Energy DST: WHERE?

Assessment of the suitability and availability of land resources.

- conduct a land **suitability assessment** to identify land that holds promise for feedstock production and map suitability and potential yield across the country;
- identify and map **areas of special sensitivity**, i.e. ‘high risk areas’ in terms of potential damage to vital ecosystem functions;
- identify and map **existing agricultural production areas**; assess the likely expansion path for food production over the short to medium term;
- overlay **infrastructure information** to evaluate market accessibility and the economic feasibility of feedstock production;
- conduct ‘**ground-truthing**’ in areas that have been identified as areas having potential for feedstock production, to complement the top down approach by involving local communities and other relevant stakeholders.
mapping and zoning

- **Building blocks for a solid mapping methodology**
  The level of detail (scale, time and accuracy) for each variable matters; and the optimal data is a decision between availability and cost.

- **Data collection may present a particular challenge for developing countries.**

- **Data gaps**, particularly regarding biodiversity, beyond PAs designated under the CBD and Wetlands under the Ramsar Convention

Developed in a workshop in Nairobi with GIS experts from East and Southern Africa, and Brazil, and building on UNEP supported mapping projects in Kenya, Senegal and Uganda..

**Land Suitability**
- Agro-climatic:
  - Water Balance
  - Temperature
- Edaphic:
  - Topography (altitude and slope)
  - Soils
- Climate change outlook/ adaptation

**Land availability**
- Environmental screening/ sensitivity areas
- PA
- Ecosystem services
- Wildlife
- HCV
- LCV/degraded land
- Land cover

**Social**
- Cultural / medicinal use areas
- Current land use / Food/Fodder
- Urban
- Conflict
- Archeological
- Land tenure

**Infrastructure / logistics**
Maps can be a useful tool but they are not a panacea

BE clear about limitations!

• Who is the target audience / with what objectives was the map developed? A tool for decision-making? Policy-makers - Underpinning policy decisions. Monitoring compliance; Project developers / Investors – Investment decisions

• How was it developed? Understand the underlying assumptions and process (GIS, multistakeholder, ground trothing); Consider data quality, resolution/depth, consistency, and gaps;

• Does it suffice? Complemented by ‘ground-trothing; Suitability but not profitability; Go or no-go areas?; General suitability, but not cumulative impacts

• Snapshot rather than development over time – trends, incl. consumption and competition; technological improvements; impacts of climate change
Examples

• Parameters set in response to policy objectives.
  Slope: mechanisation – reduction of cane burning and improving working conditions vs. creation of employment.

• Data limitations...
  Water: annual rainfall data insufficient for real decision-making; map showing theoretical potential for growing a given feedstock would need to be complemented by measurement of cumulative impacts on the watershed level – indication of much production could be supported

  Biodiversity: very different levels of information are made the basis, in some cases purely PA under the CBD
What do we need?

- **Guidance on how to interpret existing maps**, in light of policy decisions influencing criteria and data limitations, e.g. depth, accuracy, consistency, resolution.
- How to factor in different **production and conversion systems**?
- How to handle **competing uses**, e.g. for forest products?
- Explanatory note on **feedstock selection**.

- Interpretation of Maps in light of **GBEP indicators**. In how far do existing data sets inform GBEP indicators? How can GBEP indicators be translated into mapping methodologies?

- **A common methodological framework**