Showcasing results and demonstrating impact

Subject 2 - Methods and Tools: Lessons learned in measuring agricultural innovation and its impacts
MESH-ing Ecosystem Services & Human well-being for the SDGs

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What does environment contribute to development?

- Water
- Land
- Ecosystems

CGIAR SLO 3

15 LIFE ON LAND

Cross Cutting

CGIAR SLO 1

1 NO POVERTY

CGIAR SLO 2

6 CLEAN WATER AND SANITATION

M E S H

CGIAR SLO 4

11 SUSTAINABLE CITIES AND COMMUNITIES

7 AFFORDABLE AND CLEAN ENERGY

10 REDUCED INEQUALITIES

3 GOOD HEALTH AND WELL-BEING

13 CLIMATE ACTION
**Step 1**
Identify Infrastructure investment choice

**Step 2**
Generate scenarios from mgmt. and other drivers

**Step 3**
Model ecosystem dynamics

**Step 4**
Map ecosystem supply/services

**Step 5**
Assess effect on SDG targets

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**Management options**
- Riparian Buffers
- Flow regime
- Up-stream reforestation
- Green-economy plan
- Business as usual

**Additional factors or drivers of change**
- Population projections
- Climate change
- Price Changes

**Existing Models**
- Water yield
- Hydropower
- Carbon storage
- Nutrient retention
- Sediment retention
- Habitat quality
- Pollination
- etc.

**New Models**
- Landscape nutritional potential
- Landscape degradation
- Malaria exposure
- Water availability to agriculture

**Ecosystem service maps**

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**Effect on indicators**
Progress towards achievement of:
- SDG 2.2 malnutrition (indicator: landscape nutritional potential)
- SDG 2.4 sustainable food production (indicator: landscape degradation)
- SDG 3.3: reduce communicable diseases (indicator: malaria exposure)

**Biophysical statements:**
- The natural flow scenario reduced hydropower production by 10%
- Reforestation increased nutrient retention 20%

**Existing ecosystem service assessment approaches**
- Maps of priority conservation areas
- Identifying winners and losers
What have we done so far?

1. Scenario Generator
2. Select relevant ES
3. Run the models
4. Results output
5. Report

- Led by Bioversity International as WLE Contribution
- Research supported by WLE and PIM with several partner centers (CIAT, ICRAF, CIFOR, IFPRI, IWMI)
- Strong collaboration with the Natural Capital Project: Stanford, Minnesota, and TNC.
- Implementation partners: Volta Basin Authority, Ministries in Tanzania, Ghana, & Burkina Faso
- Funded by Science for Nature and People Partnership (SNAP)
What we have done so far?

• Matched ecosystem service outputs to SDG indicators
• Developed models for specific ecosystem services
• Develop integrative model Mapping Ecosystem Services and Human Well-Being (MESH)
• Feedback from Ministry level partners in West Africa.
• Preliminary testing of model on Volta Basin Authority Strategic Action Programme
• Released model on NatCap page

http://www.naturalcapitalproject.org/mesh/
What we want to achieve through GCARD3?

• Present an approach that repositions natural resources as a means to achieving SDG’s in addition to specific SDG outcome.

• Demonstrate progress on developing an integrative model designed for analysing trade-offs and synergies between multiple objectives in large scale investment projects.

• Get feedback from partners, particularly development banks and agencies charged with reporting on utility function of the model

• Seek potential cases for testing and refining model against real-life decisions.
Who could be our partners?

• Research partners to further improve model functionality and outputs.
• Agencies charged with developing national level SDG strategies and reporting on progress and outcomes.
• Development Banks and donors seeking to better understand Return on Investment and potential unintended consequences of large scale development investments:
  • VBA SAP
  • SAGCOT
  • Great Green Wall
  • Protected area establishment
  • New irrigation infrastructure projects
Thank you

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www.bioversityinternational.org