Valuation of Ecosystem Services and Goods (WP3)

Project Panel: Key findings
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Key gaps in knowledge addressed

• WP3 provides **information about the economic value** that communities derive from various ecosystem services

  ❖ *To assist decision making* when choosing from different land use options

  ❖ Especially the info on **how important non-market goods and services** are providing and maintaining **human welfare**
What are the **key results/outputs** of WP3 that help facilitate CC adaptation?
1. Review of existing valuation studies and literature on management of selected ecosystems and identification of tools to assess stakeholders’ perceptions and knowledge of CC and ES:

- We have reviewed the valuation studies & tools
- We have chosen the InVEST modeling tools Vs others, e.g. ARIES (Artificial Intelligence for ES) & Co$ting Nature
- **Outcome**: improved capacity to use modern tools
- We have done an analysis of stakeholders’ perception and understanding of CC and ES
2. ES in target areas identified and characterized together with key stakeholders with special focus on gender and minority groups

- PRA & Questionnaire surveys
- Produced draft review report on gender/minority issues
- 3 conference papers; 2 draft journal papers
- Training courses: Moshi, Jimma & ICIPE campus
- Impact: improved capacity to value ES, undertake basic economic modeling of ES (for scientists, project partners & stakeholder organizations)
3. Gender-disaggregated stakeholder analysis for selected ES in target areas completed

- We have conducted 2 *Participatory Stakeholder Analysis and Mapping (PSAM)* campaigns with 240 participants in Taita Hills & Kilimanjaro
- And produced a *draft gender disaggregated report*
- **Impact**: Improved *stakeholder involvement & support* as well as *understanding* of issues & inter-relationships of ecosystem, CC & resources needed when making *land use decisions*
4. Gender-disaggregate survey & field data on ecosystem goods and services collected and analyzed

- We prepared a gender disaggregated WTP/WTAC questionnaire & conducted surveys on the use & extraction of ES
- Data sets enable the quantification of ES
- We have produced a draft survey report
- Outcome: increased understanding of WTP/WTAC by gender/minority groups
- This will help in developing future scenarios for target areas
5. Stock values of ecosystem goods and services (and possible substitutes) to different sections of the population (gender/minorities) in target areas defined:

- We are developing a database of value and benefits which will latter be verified with stakeholders

- This has enabled the preliminary analysis of ES stock values
6. Existing models for valuing and payment of ES tested and adapted with new set of data

- We are testing the new generation of ES modeling frameworks/tools by integrating CC data with a gendered analysis of future scenarios of ecosystem stock values
How do these outputs contribute to the CC adaptation when used by different beneficiaries?
• Making informed trade-off decisions regarding:

- land uses & management options that have ES-based comparative advantages in the face of changing climatic conditions & changing stocks of ES
Opportunities & Challenges

• Opportunities:
  – Rapport & support from communities
  – Supportive policy frameworks & National CC Strategy 2012
  – A multidisciplinary team of researchers

• Challenges:
  – Ensuring sustainable management of ES & benefit flows to the poor/minority groups
  – Ensuring buy in from policy makers to support the development & implementation of ES-based interventions to enhance food security
Contributions to improving food security:

• Supporting the development and implementation of ES-based interventions to enhance food security

• Generating **buy-in from sellers of ES** to feel confident that they are receiving the necessary return from investing in sustainable management of ES

• Motivating **demand for ES** by helping prospective beneficiaries (**buyers**) understand the importance of investing in such services
Some preliminary findings

• Perception and knowledge of communities about CC closely ally with projections of scientists

• Livelihood endowments & WTAC differ significantly between altitudes and genders
  
  – **Values of livelihood endowment** were relatively higher for communities in the **upper and middle zones** than in the **lower zone**
  
  – **Female-headed households** had relatively higher mean WTAC as compared to male-headed households
    • However, the differences diminished with altitude
  
  – Similarly, **old & disabled members** of the community reported relatively higher values of WTAC as compared to other members
Two policy implications!

- Efforts to develop mitigation measures and enhance the ability to adapt to CC should acknowledge the perceptions and understanding of farming communities.

- The altitudinal and gender differences in livelihood endowments and WTP/WTAC have important implications in policy and strategic planning to address:
  - issues & threats of CC,
  - its impacts on ES & food security
  - the design of adaptation and mitigation strategies