Systematization of EbA options

Mainstreaming EbA and Accessing Adaptation Finance workshop
Kuala Lumpur, September 29th, 2014

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UNEP-ROLAC
Develop and implement microfinance products and services that support EbA in the Andes

Institutional set-up

Bancamía

Contactar

crezcamos

FONDESURCO

Edpyme

Solidaridad

Frankfurt School

UNEP Collaborating Centre
for Climate & Sustainable Energy Finance

Ministerio Federal de Medio Ambiente, Protección de la Naturaleza, Obras Públicas y Seguridad Nuclear

en virtud de una resolución del
Parlamento de la República Federal de Alemania
MFIs as protagonists for rural and agricultural development in the face of climate change

Concept

1. Awareness Raising
2. Technical Assistance
3. MF Products & Services
In order to reach transparent triple bottom line returns, MFIs capacities are being strengthened

**Business model**

**Climate smart lending methodologies:**

- Enhanced and customized products and services (esp. MEbA)
- Increased efficiency
- Better risk management
- More transparency
The project is currently piloting the climate smart lending methodology, 40 EbA options and trainings

State of implementation

40
EbA options in a first systemized catalogue and decision matrix

1300+
EbA oriented lending operations implemented in three institutions

4
cooperation agreements for the provision of technical assistance

800+
Small landholders interviewed and informed on EbA options

3
MFIs initiated internal awareness raising campaigns
**MEbA potential and gaps**

### Microfinance
- Aimed at poor population

### Adaptation
- High vulnerability
- Social and environmental benefits (food security)
- Scalability possible through innovative approaches

### Concept
- **Climate risk**
- **Market risk**
- **Productive risk**

#### Potential

<table>
<thead>
<tr>
<th>Region</th>
<th># Agriculture Units (- 10 ha)</th>
<th>AU w/access to financing</th>
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<tbody>
<tr>
<td>Latin America</td>
<td>11,500,000</td>
<td>2,850,000</td>
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<tr>
<td>Colombia</td>
<td>1,359,654</td>
<td>347,832</td>
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<tr>
<td>Peru</td>
<td>2,006,700</td>
<td>300,141</td>
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<tr>
<td>Central America</td>
<td>3,750,135</td>
<td>570,000</td>
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#### Gaps
- Database creation and data handling
- Financial mechanisms

**EbA adaptation measures and capacity building to reduce risk**

**Replication**

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[Logo: UNEP]
Regional landscape

Biological corridor

Hydrological or ecological connectivity

National policies

Land use zoning based on suitability

Payment for environmental services

Local landscape

Restoration of riparian areas
Watershed restoration

Urban agriculture Terraces

Farm

Conservation agriculture
Agroforestry

Beekeeping
Windbreaks

Household

Family orchards

Water harvesting
EbA options – selection criteria

• Reduce pressure on ecosystems and the services they provide

• Increase social or economic resilience of vulnerable human populations

• Reduce risks associated to climate events in productive activities

• Protect, restore, or use biodiversity and ecosystems in a sustainable manner

• Have short-term impact on people’s economy
Systematization of EbA options is an initial step towards developing microfinance products.

This initial exercise is being refined in conjunction with MFIs and CIAT.

Binder with 40 descriptive fact sheets and parameterized cost matrix.
Break-down of climate risk

Regional/Zone level: THREATS
Climate factors over which we have little control

- Intense rainfall
- Hail
- Sudden temperature changes
- Extreme heat
- Changes in rainfall patterns
- Frost
- Strong wind

Client level: IMPACTS
The effects of climate threats manifesting on the targeted system

- Reduced food security
- Erosion
- Flash floods
- Phenological changes
- Spread of pests
- Crop damage
- Landslides
- Declining water availability
- Fire
- Flooding
- Drought
- Need for greater inputs
- Crop failure
- Loss of productivity
Systematization of EbA options

Fact sheets with key information on costs, implementation procedure and financial and ecosystem benefits

Climatic risk disaggregated into “hazards” and “impacts” which can be localized

EbA options aimed at reducing “impacts” over which farmers have more control:
- Lower production costs – diversify income – decrease climate risk – ecosystem benefits

Synergies between options sought – EbA is multifaceted
Types of EbA measures

Conceptual pillars
Agroecology, Permaculture

Agricultural support
- Organic fertilizers, vermicompost, soil conditioning, water reservoirs, drainage systems, contour trenches

Better agricultural practices
- Organic agriculture, conservation agriculture, crop diversification, crop rotation, integrated nutrient management, integrated pest management

Ecological support
- Beekeeping, seed banks, sustainable forest management, soil restoration, fire prevention trenches, retention walls, filtering dams, infiltration pits, ecotourism, plant nurseries

Mixed systems
- Agrosilvopastoral, Silvopastoral, Agroforestry, Natural shade, windbreaks, family orchards

Technological improvements
- Biodigesters, fog catchers, solar dehydrator, efficient woodstoves, solar hydroponics, greenhouses, aquaculture, drip irrigation

Ancient practices
- Terraces, Waru Waru
1. Impacts addressed
2. Qualitative potential to reduce impacts
3. Time to achieve first results
4. Focus (support/investment)
5. Scale (individual/collective)
6. Description: what it is and what it does
7. Location: where it can be implemented
8. Climate threats and impacts addressed
9. Summary of implementation steps
10. Diagram with details on the measure
Content description 2

- Climate hazards addressed
- Complementary measures
- Income-generating potential
- Mitigation potential
- Summary of inputs needed and costs
- Economic and ecosystemic benefits
- Limitations
- Lessons learned
- Additional considerations
- Units to monitor project progress
- Units to monitor measure’s impact
### Cost parameterization

**Construction of a 42 m² family orchard**

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<tr>
<th>MANO DE OBRA</th>
<th>#</th>
<th>Unidad</th>
<th>#/Jornal</th>
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<tr>
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<table>
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<tr>
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Subtotal USD: 90

### HUERTOS FAMILIARES

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Subtotal USD: 1235

### CAPACITACIÓN

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Subtotal USD: 240

Total USD: 1565

### Tables in fact sheets summarize cost information, which is a first approximation

Costs are parameterized in a spreadsheet to be calibrated for local conditions.
Ecosystem approach of Cost-benefit analysis of EbA options

Methodology centred on analyzing ecosystemic and economic benefits from implementation of certain EbA options

Measures ecosystem goods and services which have no market value

Indirect valuation methods such as potential yields and avoided costs

Potential yields method compares production under conventional vs EbA approach

Avoided costs method accounts for expenses that EbA implementation helps to avoid (need for greater inputs, pest incidence, decreased water availability, damage to infrastructure, etc)
Sample Ecosystemic CBA: Organic fertilizers in maize production

### Economic benefits
- **Income**
  - *Yield/ha * Selling price*
  - **Income** $1519

### Production costs
- **Fixed costs + Variable costs**
  - **Total costs** $777.5

### EbA measure implementation costs
- **Fixed costs + Variable costs**
  - **Total costs** $425.1

### Yield variability
- **% increase in yields (Δ%) * Selling price**
  - **EbA income** $258.4

### Avoided or incurred costs
- **% Inputs* Variable costs**
  - **Avoided costs** 15%
    - **Income** $108.4

### Results
- **Total benefits**
  - Economic ($1519)
  - Ecosystemic ($366.8)
  - **Total benefits** $1886
- **Total costs**
  - Production ($777.5)
  - Implementation ($425.1)
  - **Total costs** $1203
- **Ecosystemic CBA**
  - **Total benefits/Total costs** = $1886/$1203
  - **Ecosystemic CBA** = 1.57
  - CBA>1 profitable
  - CBA<1 Not profitable
Current benefits valuation under development

- Data on benefits based on literature, experience, or expert opinion
- Progress on detailed cost-benefit analysis and user risk perception of 10 EbA measures (CIAT)
- Small Landholder Adaptation Index
- EbA verification data sheet
Next steps

• Microfinance product and service integration with EbA options
• Development of reporting and verification tools
• Technical assistance and capacity building on proper implementation
• Development of communication materials
http://www.pnuma.org/meba


http://www.pnuma.org/meba/fichas/MEBA_Options_costs_and_benefits.pdf

Thank you

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