SNV- Africa Biogas Partnership Programme

Jan Lam
jlam@snvworld.org
The African domestic energy issue

- High reliance on biomass for cooking
- Forests are rapidly dwindling
- More time spend on collecting fuel wood or increased cost for fuel wood and charcoal
- Health effects due to smoke inhalation
- Environmental degradation

[Map showing traditional energy use and forest coverage in Africa]
The African soil fertility issue

• Nutrient depletion through water and wind erosion. In addition and increasingly, nutrients are exported through product export.

• For a large share of farming households, chemical fertilizer is either insufficiently available or unaffordable, while its costs are increasing.

• As a result, soil productivity is declining, threatening the livelihood of ~80% of the African population.
Domestic biogas

- Small biogas installations coming in many different designs.
- Applicable for households involved in integrated farming (livestock & agriculture) having access to sufficient dung and water.
- Investment ~ € 600 per installation, depending on scope, location and size.
- Lifetime, for fixed dome biogas plants, over 20 years.
Benefits of biogas

- Substituting traditional energy with 1 to 5 m³ biogas / day.
- Improving agricultural production with high quality organic fertilizer.
- Clean stoves eliminate ARI exposure; connected toilets improve sanitation; reduced fuelwood collection, quicker cooking, less cleaning of utensils.
- Artisan-level rural employment generation in marketing, construction and after sales service.
- Contributing to reduction of deforestation, overgrazing, surface water pollution, greenhouse gas emissions.
25 years, half a million plants
Main objective

to contribute to the achievement of the MDGs through the dissemination of domestic bio-digesters as a local, sustainable energy source through the development of a commercial, market oriented sector in selected African countries.

How?

• Programme development
• Support programme implementation
• Ensure the continued operation of the constructed installations
• Maximize the benefits (in particular on agricultural production)
• Develop capacity in a multi-stakeholder sector development environment
• Develop financial opportunities for poorer households
• Exchange knowledge between partner programmes through networking
Partnership

- **Donors**
  DGIS (till 2014), Governments
  **Possible donors from 2014 onwards:** AfDB, EnDev, GIZ, Climate Investment Funds (FIP/REDD+,...) WB, ...
  Co-funder, promoter, facilitator

- **HIVOS**
  Humanist Institute for Development Cooperation
  Fund management, partnership facilitator

- **SNV**
  Netherlands Development Cooperation
  Technical assistance / capacity building, knowledge brokering,

- **NHOs**
  National Hosting Organizations
  Programme coordination facilitation

- **NDBPs**
  National Domestic Biogas Programmes
  Programme coordination and implementation

- **Stakeholders:** Private Companies, NGO’s, MFI’s, .....
Phase I: Six countries

- Improve living conditions of households in six African countries
- Introduction of 70,550 domestic biogas digesters for cooking and lighting
- Lay the foundations for domestic biogas programmes in three additional countries.
• SNV Africa biogas over 28,000 installations over the period 2009 to March 2013
• ABPP contribution in this: 24,928 units
• Production likely to double from April 2013 to 2014
Phase II: Eleven countries
ABPP II forecast

- Ethiopia
- Kenya
- Rwanda
- Uganda
- Tanzania
- Zambia
- Zimbabwe
- Burkina Faso
- Benin
- Cameroun
- Ghana

EAC
SADEC
ECOWAS

2014
2015
2016
2017
2018

180,000
Programme costs and sources (mln Euro):

<table>
<thead>
<tr>
<th>Programme costs:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment</td>
<td>133</td>
</tr>
<tr>
<td>Programme support</td>
<td>67</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>200</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Funding sources:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Households</td>
<td>133</td>
</tr>
<tr>
<td>ODA – grants</td>
<td>20</td>
</tr>
<tr>
<td>Carbon finance</td>
<td>12</td>
</tr>
<tr>
<td>Participating G’vts</td>
<td>35</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>200</strong></td>
</tr>
</tbody>
</table>

Programme period: 2014 - 2018
**Expected results**

- 2014 – 2018
- Expansion to 11 countries
- Adding 180,000 biogas installations
- Carbon revenue important income stream for programme support
- Donor – Government coalition for programme support funding

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Biogas plant construction</strong></td>
<td>180,000</td>
<td>[plants]</td>
</tr>
<tr>
<td><strong>Energy</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Energy production</td>
<td>2,112,001</td>
<td>[MWh]</td>
</tr>
<tr>
<td>Power installed</td>
<td>590,144</td>
<td>[kW]</td>
</tr>
<tr>
<td><strong>Environment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GHG emission reduction</td>
<td>1,842,600</td>
<td>[t CO₂eq]</td>
</tr>
<tr>
<td>Deforestation reduction</td>
<td>152,015</td>
<td>[ha of forest]</td>
</tr>
<tr>
<td>Soil nutrification</td>
<td>1,243,755</td>
<td>[t(DM) bio-slurry]</td>
</tr>
<tr>
<td><strong>Fuel substitution</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biomass</td>
<td>1,893,272</td>
<td>[t biomass]</td>
</tr>
<tr>
<td>Fossil fuel</td>
<td>13,820</td>
<td>[t]</td>
</tr>
<tr>
<td><strong>Socio-economic</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Persons reached</td>
<td>1,080,000</td>
<td>[persons]</td>
</tr>
<tr>
<td>Workload reduction (women &amp; children)</td>
<td>38,388</td>
<td>[pers years]</td>
</tr>
<tr>
<td>Exposure to indoor air pollution reduced</td>
<td>900,000</td>
<td>[women &amp; children]</td>
</tr>
<tr>
<td>Toilets attached</td>
<td>72,000</td>
<td>[toilets]</td>
</tr>
<tr>
<td>Productive slurry use</td>
<td>144,000</td>
<td>[households]</td>
</tr>
<tr>
<td>Employment generation (direct)</td>
<td>12,600</td>
<td>[person years]</td>
</tr>
<tr>
<td><strong>Training</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>User training</td>
<td>252,000</td>
<td>[person days]</td>
</tr>
<tr>
<td>Professional training</td>
<td>77,130</td>
<td>[person days]</td>
</tr>
</tbody>
</table>
Subsidy arguments

In favour:
- Promotional tool
- Quality leverage
- Priming the market
- Pro-poor
- Affordability
- Public benefit
- Govt. commitment
- Steers development

Against:
- Market distortion
- Inflexibility
- Suppresses innovation
- Expensive
- Private benefits
- Addiction
- Unsustainable
- Ownership

Policy shift: from upfront investment subsidy to “RESULT BASED FUNDING”
Fund raising trajectory

1. Preparatory phase:
   - Communication strategy
   - Concept notes for individual countries
   - Formulation of PID
   - Finalize data base of donor agencies with country specific info
   - Formulation of specific country plan: explore local (and international) dynamics to draw a road map and finally clarify roles & responsibilities
   - Resource mobilization

2. Implementation phase:
   - Implement the road map
Challenges 2013 - 2018

- Host Government buy-in
- ODA fund mobilization
- Increasing awareness domestic biogas at policy and household level
- Private sector development in rural Africa
- Biogas credit facilities for households and biogas companies
- Improving bio-slurry application and value for agriculture
Thank you

For further information, please contact:
Jan Lam
jlam@snvworld.org