Generating carbon credits through dairy productivity gains

A concept for a pilot project
Contents

• Underlying Concept
• Links to the Global Agenda of Action
The underlying Concept

Move from A to B: improve productivity and generate Carbon credits
Objective

- Test and demonstrate the potential for linking reductions in emission intensity in dairy production achieved through productivity gains to carbon credit mechanisms
What, where, why, how

What (focus)
- Development of **certified methodology** to link productivity gains to reductions in GHG emission intensity
- Development of **financing mechanism** to fund technical interventions – carbon credit

Where
- Focus: smallholder dairy production
- Targeting: Producers within a range of 500-2500kg milk/year
- Site pre-selection - Kenya

Why
- Yield gap to exploit

How
- Facilitating transfer of existing technology/know-how
- Speed-up adoption through carbon finance mechanisms

C. East Africa

![Graph showing milk yield per lactation (Kg)]

- Light coloured bars = Minimum production
- Dark coloured bars = Maximum production
- \( x_i \) = Yield gaps due to “animal husbandry practices”
- \( y_i \) = Gap in productivity due to “genotype”
Design

Emission intensity vs. time:
- Project duration
- Project participants

C credits generated

Control
# Carbon credit scenario-possible CC revenue

<table>
<thead>
<tr>
<th>Assumptions:</th>
<th>Emission intensity reduction scenarios</th>
<th>2.5</th>
<th>2.0</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Target volume:</strong> 10,000 ton CO$_2$e/kg/year</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Milk per cow:</strong> 1000 litres</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Price of credits:</strong> 7 US$/tCO$_2$e (conservative)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>2.5</th>
<th>2.0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk volume (liters per year)</td>
<td>4,000,000</td>
<td>5,000,000</td>
</tr>
<tr>
<td>Payment US$/year</td>
<td>70,000</td>
<td>70,000</td>
</tr>
<tr>
<td>Payment per HH (US$/5 cattle/10 years)</td>
<td>875.0</td>
<td>700.0</td>
</tr>
<tr>
<td>Milk income per site (@ 0.3USD/l)</td>
<td>1,200,000</td>
<td>1,500,000</td>
</tr>
<tr>
<td>C credit as % of milk income</td>
<td>5.8%</td>
<td>4.7%</td>
</tr>
</tbody>
</table>
Linkages to Global Agenda of Action

Concept and approach

- Thematic area 1: closing the efficiency gap
- Supports the piloting of new concept and generation of knowledge

Stakeholder participation

- **Government**: Ministry of livestock development
- **Producer groups**: dairy farmers groups and dairy cooperatives
- **(international) private sector**: Investor and co-designer **Research**: ILRI, Kenyan Agriculture Research Institute
- **International organization**: FAO

Up-scaling

- Replication and scalability
- Project based or embedded in National mitigation strategies (NAMA)
Conclusion

- Speed-up technology adoption through financing of mitigation packages
- Benefits to producer accruing from productivity gains: income, food security
- Co-benefits, financing the transition: cc mitigation
- Knowledge generation through “proof of concept” approach