Cost-Benefit analysis of crop trials under the Africa RISING project in Mali

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Key research activities
- Perform a comparative analysis of costs and benefits of crop trials promoted under the project in Bougouni district in Mali.
- Identify the most economically beneficial technology for the smallholder farmers.
- Partial budget analysis has been used for conducting this research.

Results and main findings
- Technological treatments applied to the maize, cowpea, soybean and sorghum-cowpea intercropping production are economically beneficial.
- For the maize production T5 is the most economically beneficial because an investment of FCFA 1 in application of T5 provides an additional gain of FCFA 0.62 against FCFA 0.39 for T6 (see table at right).
- Develop a regular collection system of data on crop trials for facilitating the cost-benefit analyses.
- Improve sharing information system between the partners and between the partners and researchers.

Implications of the research for generating development outcomes
- This research highlighted that the improved technologies promoted under the project are economically beneficial for the smallholder farmers.
- Next steps would be to develop the extension approaches for facilitating the scaling adoption of these improved technologies with a great impact on the livelihoods.

How this work would continue in Africa RISING phase 2
- Undertake an early adoption study of the improved technologies promoted in the Africa RISING – phase 1.
- Evaluate utilization of the improved technologies in line with market participation of the smallholder farmers.
- Conduct an impact assessment of adoption of the economically beneficial technologies to smallholder on their livelihoods.

Table: Cost and benefit analysis of maize trials in Bougouni district in Mali

<table>
<thead>
<tr>
<th>Treatment</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
<th>T6</th>
</tr>
</thead>
<tbody>
<tr>
<td>No compost and fertilizer</td>
<td>183888</td>
<td>324288</td>
<td>411624</td>
<td>35700</td>
<td>125700</td>
<td>125700</td>
</tr>
<tr>
<td>No compost and full dose of fertilizer</td>
<td>215700</td>
<td>195924</td>
<td>225732</td>
<td>281532</td>
<td>316524</td>
<td>316524</td>
</tr>
<tr>
<td>Gross farmgate benefit</td>
<td>416432</td>
<td>361492</td>
<td>407232</td>
<td>532224</td>
<td>361492</td>
<td>361492</td>
</tr>
<tr>
<td>Total variable input costs</td>
<td>90000</td>
<td>90000</td>
<td>90000</td>
<td>90000</td>
<td>90000</td>
<td>90000</td>
</tr>
<tr>
<td>Net benefit</td>
<td>148188</td>
<td>198588</td>
<td>257932</td>
<td>281532</td>
<td>316524</td>
<td>316524</td>
</tr>
<tr>
<td>Change in net benefit between two treatments</td>
<td>53800</td>
<td>34952</td>
<td>53800</td>
<td>34952</td>
<td>53800</td>
<td>34952</td>
</tr>
<tr>
<td>Change in total variable input costs</td>
<td>90000</td>
<td>90000</td>
<td>90000</td>
<td>90000</td>
<td>90000</td>
<td>90000</td>
</tr>
<tr>
<td>Marginal rate of return</td>
<td>62.00</td>
<td>38.88</td>
<td>62.00</td>
<td>38.88</td>
<td>62.00</td>
<td>38.88</td>
</tr>
</tbody>
</table>

Current partnerships and future engagements for out scaling
- IER - Institut d’Economie Rurale
- AMEDD - Eveil au développement Durable
- GRAADEC0M - Action et assistance pour le Développement
- AMASSA - Sécurité et souveraineté Alimentaires
- CAAD – Appui a l’autopromotion pour le Développement
- CRS - Catholic Relief Services
- AKF - Aga Khan Foundation
- EUCORD - European Cooperative for Rural Development
- AOPP - Organisations professionnelles paysannes