Socio-Economic Assessment of Irrigation Pilot Projects in Rwanda

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Main Conclusions

Although significant investment in irrigation requires increased production of high-value crops, most farmers in the four pilot sites have grown a variety of staple and subsistence crops with very limited experience of cash crops, thus they need to be trained of growing new cash crops and marketing them. Application of effective natural resource management is also essential, including soil and water conservation and agroforestry practices, while farmers are often not sufficiently sensitized on the needs and affordable technologies. Not only the choice of crops and natural resource management protocols but also designing of irrigation schemes require careful planning and relevant provisions for capacity building based on current socio-economic profiles of households.

Introduction

The eastern and southern regions of Rwanda, with several dry months per year, have high demand for irrigation. While biophysically there are huge potentials for setting up irrigation schemes to utilize surface water, there are a lot of socio-economic uncertainties to make such irrigation schemes economically and socially viable and sustainable.

This poster presents the preliminary results of a socio-economic baseline survey of 4 irrigation master plan (IMP) pilot projects in eastern and southern Rwanda. In view of the intended introduction of irrigation schemes, recommendations on crops, livestock and agroforestry management are provided, and suggestions for addressing socio-economic and organizational challenges.

Materials and Methods

The data collection was conducted in the 4 irrigation pilot sites, by using a structured questionnaire for randomly sampled households from clusters by biophysical conditions in each site as well as group interviews in April-May 2010. The descriptive statistics on socio-economic and biophysical profiles of households and communities in the pilot sites, current land tenure and resource management practices, crops, livestock, agroforestry and off-farm income activities, as well as information access and perceptions on presumed interventions, were compiled using a statistical software.

Results

On average, across the four IMP sites, households had 1.5-2 plots, for 1ha or less, and planted 3 to 4.5 different crops with Masaka households planting the most diverse crops.

<table>
<thead>
<tr>
<th>Site</th>
<th>Proposed command area (ha)</th>
<th>Irrigation scheme</th>
<th>Water source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Masaka</td>
<td>500</td>
<td>Pump</td>
<td>River</td>
</tr>
<tr>
<td>Mbuye</td>
<td>300</td>
<td>Pump</td>
<td>River</td>
</tr>
<tr>
<td>Kirehe</td>
<td>200</td>
<td>Dam</td>
<td>River</td>
</tr>
<tr>
<td>Mugesera</td>
<td>1000</td>
<td>Pump</td>
<td>Lake</td>
</tr>
</tbody>
</table>

Table 1: Summary of the 4 IMP pilot schemes

Less than 35% of households adopted water management technologies across the four sites, while Mugesera households had relatively better adoption rates. For soil management, 50% or over households (except in Kirehe) adopted contour trenches, while relatively fewer households (except in Masaka) adopting terracing, which is a more stable measure for plots in slopes.

Discussion

In order to legitimate often expensive irrigation investments, schemes must ensure of not only financial but also socio-economic benefits to farmers, communities and society. However few farmers have experienced of growing high-value crops and effective natural resource management. Farmers and communities need to be provided training and extension services to make the schemes sustainable.

Soil and water conservation as well as agroforestry are required to sustainable irrigation scheme management.

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