CATCHMENT AREA (CA)
Min. 1.2 Ha. runoff: 60-80%

1. PRIMARY RILL
2. SECONDARY RILL

IRRIGATION NETWORK

RESERVOIR

h(1-2) = 3.7 m
l(1-2) = 86 m

h(2-3) = 2.5 m
l(2-3) = 90 m

h(2-4) = 2.4 m
l(2-4) = 122 m

h(4-5) = 0.9 m
l(4-5) = 78 m

h(5-6) = 0.4 m
l(5-6) = 43 m

h(5-F) = 0.7 m
l(5-F) = 110 m
Farmers’ food self-sufficiency 1998-2000

produce as % of annual household requirement

- 1998
- 1999
- 2000

Goulagou (BF)  Mwala (Ke)
Grain yield 1998-2000

- **1998**: P+I (110%) for Mwala, Goulagou (BF) not shown.
- **1999**: P+I (109%) for Mwala, Goulagou (BF) not shown.
- **2000**: P+I (122%) for Mwala, Goulagou (BF) not shown.

Produce as % of mean household requirement for Goulagou (BF) and Mwala (Ke).
## Water use efficiency

<table>
<thead>
<tr>
<th>Treatment</th>
<th>1998 [kg mm$^{-1}$ ha$^{-1}$]</th>
<th>1999 [kg mm$^{-1}$ ha$^{-1}$]</th>
<th>2000 [kg mm$^{-1}$ ha$^{-1}$]</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC</td>
<td>1.16</td>
<td>0.36</td>
<td>1.10</td>
</tr>
<tr>
<td>I</td>
<td>1.51</td>
<td>0.53</td>
<td>1.54</td>
</tr>
<tr>
<td>F</td>
<td>2.55</td>
<td>0.97</td>
<td>1.93</td>
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<tr>
<td>IF</td>
<td>2.75</td>
<td>1.34</td>
<td>2.93</td>
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</tbody>
</table>
Up-scaling

- Tougou Basin; 625 Km2, Pop. 31,000
- Indicatively, 10% of currently cultivated land
- 0.6% Tougou basin rain
= Self-sufficiency in grain
Socio-economics

- Benefit-cost analysis shows that system can be viable if financially supported through credit systems
- At the end of the season, collected water permits for an irrigated cash crop.
- Labour is saved through intensified agriculture
- Other techniques
Thank you!