Experiences with System of Rice Intensification (SRI) in Cambodia

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Cambodia’s Agricultural Sector - Overview

Population living in rural areas: 85% of 12 million people
Agriculture contribution to GDP: 40%
Total paddy production in 1999: 4.04 million tons
77% of the work force work in agriculture
Total land area in Cambodia: approx. 18 million ha
-- 37% are considered arable
-- 3.9 million utilized for agriculture
-- paddy is cultivated in 90% of agricultural land
-- 11% of paddy area has some irrigation
Total paddy production in 1999: 4,041 tons
Average Yield of rice crop in 1999: 1.87 t/ha
Total rice requirement: 151.2 kg/capita
Rice production in 1999: 179 kg/capita
Elements of System of Rice Intensification (SRI)

Transplanting young seedling
-- seedling 8 – 14 days old
-- select strongest seedling from seed bed

Fast and careful transplanting
-- seedling exposed not longer than 30 minutes
-- avoid damaging root system as much as possible
-- transplant root in L-shape

No. of seedlings transplanted per hill
-- transplant one seedling per hill
-- re-transplant after a week

Spacing of transplanted seedling and transplanting in rows
-- spacing between seedlings 25 cm on poor soils
-- spacing up to 50 cm on good soils
-- transplant in rows
Elements of SRI contd.

Water management
-- (daily) alternate flooding and draining of paddy field
-- maintain less water in the field

Weeding
-- do weeding regularly
-- weeding needs to be done more often, because field is not always submerged in water

Soil and nutrient management
-- apply fertilizer, compost and green manure show good results
-- aridate the soil, combine with weeding raken

Land preparation
-- good soil leveling before transplanting
-- possible to combine with zero-tillage
## Yields of SRI plots during wet season 2001

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Total</th>
<th>Average</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>No of villages</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No of farmers</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plot size (ha)</td>
<td>5.7</td>
<td>0.3</td>
<td>0.003</td>
<td>1.0</td>
</tr>
<tr>
<td>Average Yield (kg/ha)</td>
<td>84,997</td>
<td>4,140</td>
<td>1,920</td>
<td>14,400</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Yields for plot size class</th>
<th>No of plots</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 0.1 ha (kg/ha)</td>
<td>7</td>
<td>5,879</td>
<td>2,600</td>
<td>14,400</td>
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<td>0.1 - 0.5 ha (kg/ha)</td>
<td>8</td>
<td>4,066</td>
<td>2,571</td>
<td>7,500</td>
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<td>&lt; 1 ha (kg/ha)</td>
<td>5</td>
<td>2,264</td>
<td>1,920</td>
<td>2,400</td>
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</tbody>
</table>
Yields of SRI plots during wet season 2001

- Average yield: > 4 tons/ha
- Higher response from traditional varieties
- None of the farmers practiced all of SRI elements yet

Result of SRI demonstrations in rainy season 2001 (n=20)
Benefits from SRI

- Increased yields (4-8 t/ha, and >10 t/ha)
- Increased factor productivity (land, labor, water, purchased inputs like seed, etc.)
- Higher income for farmers
- Higher potential for diversification
- Positive environmental side effects
- Maintainance of greater agro-biodiversity
Challenges from SRI

• Increased labor requirement (for weeding, transplanting and water management)
• Increased burden for women
• Greater skills required
• Non-availability of water control measures
• Low adoption due to highly unconventional practices
• Strong resistance from researchers
Bright prospects for rural farmers