Problem
- 212 million malnourished
- GHI ranked 66th out of 84 developing countries
- > 50% of children underweight
- 37.2% live below the poverty line
- > 60% rural population dependent on insufficient agriculture

Solution
Join with Heifer International to bring simplified hydroponic micro-gardens to Bihar.

Implement
- Send a team to the Charihari village of Bihar, India
- Supply the initial seeds and nutrient solution
- Provide funding for construction of micro-gardens

Educate
- Instruct families on how to build the beds
- Teach maintenance techniques to local community
- Identify cash and sustenance crops
- Inform about micro-finance

Assess
- Send research team at six month and two year intervals
- Review plot conditions
- Gather data on health and economic situations

Hydroponics, Simplified
- Nutrient solution allows for soilless culture
- Watertight liner seals in nutrients and water for complete utilization
- No electricity, expensive materials, or extensive background knowledge required

Cost/Unit
<table>
<thead>
<tr>
<th>Aspect</th>
<th>Cost (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial Supplies</td>
<td>$100</td>
</tr>
<tr>
<td>(seeds, nutrients)</td>
<td></td>
</tr>
<tr>
<td>Construction</td>
<td>$255</td>
</tr>
<tr>
<td>(full plot, 20m²)</td>
<td></td>
</tr>
<tr>
<td>Supplies per Year</td>
<td>$60</td>
</tr>
<tr>
<td>Maintenance</td>
<td>$40</td>
</tr>
<tr>
<td>First Year Cost</td>
<td>$355</td>
</tr>
<tr>
<td>Annual Cost</td>
<td>$100</td>
</tr>
</tbody>
</table>

Benefits
- More locally grown food (up to 2 kilos per day)
- Increased incomes
- Uses ¼ the land of standard farming practices
- Less water consumption
- Ability to grow exotic cash crops
- No soil necessary

Most Lucrative Crops
<table>
<thead>
<tr>
<th>Crop</th>
<th>Revenue per 20 m² plot (in USD)</th>
<th>Total Annual Profit</th>
<th>Net Annual Profit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potato</td>
<td>120</td>
<td>2400</td>
<td>2000</td>
</tr>
<tr>
<td>Tomato</td>
<td>80</td>
<td>1600</td>
<td>1200</td>
</tr>
<tr>
<td>Rice</td>
<td>60</td>
<td>1200</td>
<td>1000</td>
</tr>
<tr>
<td>Wheat</td>
<td>80</td>
<td>1600</td>
<td>1200</td>
</tr>
<tr>
<td>Lettuce</td>
<td>120</td>
<td>2400</td>
<td>2000</td>
</tr>
</tbody>
</table>

Bibliography

Kelly Beisswanger, Scott Cameron, Kaitlin Poss, Kathryn Ziegler
Advisors: Professors Traver and Wobbe
Feed The World
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