Market Analysis: Solar Water Pumps for the Tanzanian Horticulture Sector

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Farm and Farmer Characteristics

Geographic Reach

Farmer Type

- Commercial: 160
- Primary Market Oriented: 122
- Loose Market Oriented: 117
- Subsistence: 8

Crops Cultivated

- Tomato: 260
- Onion: 150
- Cabbage: 118
- Okra: 70
- Green Beans: 65
Farm and Farmer Characteristics

Percentage of Produce Sold

Main Product Market

Technology Used

Manual 41%
Diesel 36%
Canal 18%
None 10%
Mechanical 8%
Other 6%
Solar 0%
Market Size and Farmer Typologies

- Top-down approach to calculate the market size and potential for SWPs
- Developed two *a-priori* segmentation models
  - Market orientation approach
  - Current irrigation technology
- After carrying out the two *a-priori* approaches
  - Not enough differentiation between groups
  - Both methods underestimate the impact of purchase drivers
- Constructed six typologies from purchase driver analyses
## Farmer Typologies

<table>
<thead>
<tr>
<th>Segment</th>
<th>Market value (%)</th>
<th>Avg. Inc. ($US)</th>
<th>CapEx ($US)</th>
<th>Tech</th>
<th>Area (Acres)</th>
<th>Needs (L/hour)</th>
<th>Satisfied (%)</th>
<th>Channel(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost-Driven Farmer</td>
<td>31</td>
<td>2,044</td>
<td>32</td>
<td>Manual</td>
<td>0.7</td>
<td>2,216</td>
<td>47</td>
<td>Farm gate; local market</td>
</tr>
<tr>
<td>Distribution-Reliant Farmer</td>
<td>19</td>
<td>2,305</td>
<td>127</td>
<td>Diesel</td>
<td>0.8</td>
<td>1,961</td>
<td>40</td>
<td>Farm gate; wholesalers</td>
</tr>
<tr>
<td>Water Conscious Farmer</td>
<td>12</td>
<td>3,000</td>
<td>60</td>
<td>Canal</td>
<td>1.0</td>
<td>3,026</td>
<td>42</td>
<td>Farm gate; wholesalers</td>
</tr>
<tr>
<td>Effortless Farmer</td>
<td>10</td>
<td>2,174</td>
<td>79</td>
<td>Mechanical</td>
<td>0.8</td>
<td>2,453</td>
<td>31</td>
<td>Farm gate; local market</td>
</tr>
<tr>
<td>Unaware Farmer</td>
<td>6</td>
<td>2,652</td>
<td>165</td>
<td>Canal</td>
<td>0.9</td>
<td>1,870</td>
<td>44</td>
<td>Wholesalers; farm gate</td>
</tr>
<tr>
<td>Technical Farmer</td>
<td>10</td>
<td>2,913</td>
<td>123</td>
<td>Diesel</td>
<td>0.8</td>
<td>2,655</td>
<td>55</td>
<td>Farm gate; local market</td>
</tr>
</tbody>
</table>
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Market Size

Market Size for Irrigation
(Million $US)

Market Size for Irrigation by Typology
(Million $US)

Cost-Driven
Distribution-Reliant
Water Conscious
Effortless
Technical
Unaware

2018 2022

46.9 26.7
28.7 16.4
18.2 10.4
15.1 8.6
15.1 8.6
9.1 5.2

0 10 20 30 40 50 60 70 80

2018 2022
Off-grid Cold Chain Challenge

- Off-grid cold storage companies have the potential to:
  - prevent food spoilage
  - raise incomes and increase food security

- The OGCCC will try to bridge technology gaps and reward promising business models

- First stage of challenge completed and 10 Finalists selected

Appliances that Drive Economic Growth
Finalist- Off-grid Cold Chain Challenge
Questions?