FutureFarms – Chennai, India
Impact across the value chain
About Seed

The Stanford Institute for Innovation in Developing Economies (Seed) partners with entrepreneurs in emerging economies to build thriving enterprises that transform lives. Operating throughout Africa, India, and Sri Lanka, Seed’s vision is to end the cycle of global poverty. The flagship offering is the Seed Transformation Program, a one-year intensive entrepreneurship education program for leaders and their teams. Upon completion of the Transformation Program, leaders can access Seed Network services such as coaching, consulting, student interns and various networking and skills building events. Seed offers unique access to training which challenges leaders to reassess their company’s vision and make ambitious changes towards growth that will ultimately transform lives.

Introduction

FutureFarms, a hydroponics farm equipment supplier based in Chennai, India, participated in the Stanford Seed (Seed) Transformation Program in 2018. To understand the company’s impact on its key stakeholders, Seed conducted an impact case study during the summer of 2019. Our study was informed by the following questions:

1. What is the impact FutureFarms’ value chain on people and the planet?
2. To what extent does FutureFarms contribute to United Nations Sustainable Development Goal (SDG) 8 - promote sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all?
3. To what extent does FutureFarms contribute to additional SDGs such as SDG 6 - ensure availability and sustainable management of water for all, SDG 12 - ensure sustainable consumption and production patterns, and SDG 4 - promote lifelong learning opportunities for all?

Founded in 2014 by CEO Sriram Gopal, FutureFarms (FF) has provided equipment for 40 commercial farming operations nationally, and recently, internationally. FutureFarms took part in the first year of the Seed Transformation Program in India in 2018.

Figure 1: Revenue percentage change
Methodology

This case study examines FutureFarms’ value chain impact using several methods. First, broad impacts on key value chain stakeholders are assessed by applying the Impact Management Project framework and the B Impact Assessment, a tool developed by B Lab. Next, impacts on workers and suppliers are assessed by measuring direct and indirect employment and by using employee and supplier surveys and interviews. Finally, impact on customers and the planet is examined using available company data.

Results

Impact at a glance

FutureFarms impacts at least four UN SDGs across its value chain. The company impacts SDG 6 (clean water and sanitation) because its products enable 70-90% water savings versus traditional agricultural methods. The company impacts SDG 12 (responsible consumption and production) by enabling increased productivity per acre on customer farms, and by enabling production and consumption of “clean food”, since no pesticides are needed when using the company’s hydroponic methods. Positive impact occurs for workers and suppliers – SDG 8 – via the provision and support of high-quality jobs in its direct operations and through its supply chain. Finally, the company contributes to SDG 4 (quality education) by training farm laborers on customer farms in new farming techniques.

1 https://impactmanagementproject.com/
2 https://bimpactassessment.net/
**Figure 2: Impact Management Project dimensions of impact (condensed)**

<table>
<thead>
<tr>
<th>Who?</th>
<th>Suppliers</th>
<th>Workers</th>
<th>Customers</th>
<th>Community</th>
<th>Planet</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What? SDGs</strong></td>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
<td><img src="image5.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>How Much? Scale of impact</strong></td>
<td>65 jobs supported (+13 since Seed)</td>
<td>55 workers (+20 since Seed)</td>
<td>40 farms &amp; 250 farm employees; clean food</td>
<td>70-90% water savings; zero pesticide use</td>
<td></td>
</tr>
<tr>
<td><strong>How Much? Depth of impact</strong></td>
<td>Moderate (Low multiplier, high reported quality of life)</td>
<td>Deep (B Impact score of 61.3 vs. median of 18, high reported quality of life)</td>
<td>Deep (High-tech jobs created, higher salary vs industry average)</td>
<td>Deep (B Impact score of 48.7 vs. median of 7)</td>
<td></td>
</tr>
</tbody>
</table>

**B Impact Assessment Overview**
FutureFarms scored 171.6% higher on the B Impact Assessment than similarly sized organizations. The company's score is well above 80, which is the minimum score needed to apply for B Corp certification. FutureFarms scored well above average in the areas of impact on workers, community, and especially environment. Note that the assessment is based on self-reported data and would be validated if the firm pursued B Corp certification in the future.
Figure 3: B Impact Assessment Summary

<table>
<thead>
<tr>
<th>Area of Impact</th>
<th>Benchmark</th>
<th>FutureFarms Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governance</td>
<td>6</td>
<td>3.1</td>
</tr>
<tr>
<td>Workers</td>
<td>18</td>
<td>61.3</td>
</tr>
<tr>
<td>Community</td>
<td>17</td>
<td>28.5</td>
</tr>
<tr>
<td>Environment</td>
<td>7</td>
<td>48.7</td>
</tr>
<tr>
<td>Customers</td>
<td>N/A</td>
<td>3.7</td>
</tr>
<tr>
<td><strong>B Impact Score</strong></td>
<td>53.5</td>
<td>145.6</td>
</tr>
</tbody>
</table>

**Contribution to UN SDG 8**

Direct and indirect employment

India has faced high unemployment rates, with 2017-2018 unemployment jumping above 6%. We estimate that FF supports 55 direct full-time jobs and between 52 and 65 indirect jobs through its supply chain – **120 total jobs**. The company has added 20 direct employees since engagement with Stanford Seed – 57% growth. We estimate growth between 6.7 and 7.7 indirect jobs, or 25%, since Seed.

To estimate the number of total indirect jobs supported by FutureFarms, we collected employment and revenue data from nine key FutureFarms suppliers. We calculated how many jobs were attributable to FutureFarms by adjusting the number of jobs at each supplier by the percentage of its revenue associated with FutureFarms. Assuming that our sample of suppliers is representative of FF’s supply chain, we estimate that **65 indirect jobs** are supported in FutureFarms’s entire supply chain. It should also be noted that two small-sized suppliers, called Supplier 2 and 8 in the figure below, attributed the doubling and tripling of their workforce solely to the steady work provided by engagement with FutureFarms.

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3 India Today, “Cat finally out of the bag: Unemployment at 45-year high, government defends data”, May 2019
Figure 4: Indirect jobs estimation

<table>
<thead>
<tr>
<th>Supplier</th>
<th>% of FF Total Supply Spending 2019</th>
<th>Jobs 2017</th>
<th>Jobs 2019</th>
<th>% of Supplier Revenue from FF 2019</th>
<th>Jobs Attributed to FF 2017</th>
<th>Jobs Attributed to FF 2019</th>
<th>Growth in Jobs ’17 – ’19</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplier 1</td>
<td>4%</td>
<td>30</td>
<td>30</td>
<td>20</td>
<td>6</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>Supplier 2</td>
<td>10%</td>
<td>4</td>
<td>10</td>
<td>&gt;70</td>
<td>2.8</td>
<td>7</td>
<td>+4.2 (+150%)</td>
</tr>
<tr>
<td>Supplier 3</td>
<td>3%</td>
<td>30</td>
<td>30</td>
<td>12-15</td>
<td>3.6-4.5</td>
<td>3.6-4.5</td>
<td>0</td>
</tr>
<tr>
<td>Supplier 4</td>
<td>5%</td>
<td>25</td>
<td>25</td>
<td>1-2</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>0</td>
</tr>
<tr>
<td>Supplier 5</td>
<td>10%</td>
<td>100</td>
<td>120</td>
<td>5-10</td>
<td>5-10</td>
<td>6-12</td>
<td>+1-2 (+20%)</td>
</tr>
<tr>
<td>Supplier 6</td>
<td>15%</td>
<td>75</td>
<td>75</td>
<td>4-5</td>
<td>3-3.75</td>
<td>3-3.75</td>
<td>0</td>
</tr>
<tr>
<td>Supplier 7</td>
<td>8%</td>
<td>1</td>
<td>5</td>
<td>5</td>
<td>&lt;1</td>
<td>&lt;1</td>
<td>0</td>
</tr>
<tr>
<td>Supplier 8</td>
<td>8%</td>
<td>2</td>
<td>7</td>
<td>50</td>
<td>1</td>
<td>3.5</td>
<td>+2.5 (+250%)</td>
</tr>
<tr>
<td>Supplier 9</td>
<td>N/A</td>
<td>60</td>
<td>60</td>
<td>5</td>
<td>3</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Totals</td>
<td>63%</td>
<td>327</td>
<td>362</td>
<td>N/A</td>
<td>26.4-33.05</td>
<td>33.1-40.75</td>
<td>+6.7-7.7 (+23-25%)</td>
</tr>
</tbody>
</table>

Figure 5: Changes in direct and indirect jobs

<table>
<thead>
<tr>
<th>Source</th>
<th>Total Jobs Supported 2017</th>
<th>Total Jobs Supported 2019</th>
<th>Change (# of Jobs)</th>
<th>Change (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FutureFarms</td>
<td>35</td>
<td>55</td>
<td>+20</td>
<td>+57%</td>
</tr>
<tr>
<td>Suppliers</td>
<td>52 (41.9-52.46)</td>
<td>65 (52.54-64.7)</td>
<td>+13 (10.6-12.2)</td>
<td>+25%</td>
</tr>
<tr>
<td>Total</td>
<td>87</td>
<td>120</td>
<td>+33</td>
<td>+38%</td>
</tr>
</tbody>
</table>
With this direct and indirect job data, we can calculate the employment multiplier\(^4\) for FutureFarms. According to our sample data, FutureFarms has an employment multiplier of 2.2 – for every direct job at FutureFarms, 2.2 total jobs are supported.

\[
\frac{55 + 65}{55} = 2.2
\]

We note that FutureFarms’ multiplier is lower than the top-down multiplier calculated by Seed for the manufacturing sector in India (4.6)\(^5\) and for durable manufacturing among U.S. companies (7.4).\(^6\) It should also be noted that industry multipliers in general are typically high in emerging markets such as India (estimated at >5 from a study of 484 African and Southeast Asian businesses).\(^7\)

**Decent Work**

To supplement job quantity data, we investigated the quality of direct and indirect jobs supported by FF. According to the IFC, for sustainable poverty reduction, job growth must be accompanied by higher earning possibilities.\(^8\) This is especially relevant in South Asia, where nearly 70% of the population qualifies as working poor.

**Direct Jobs**

FutureFarms performs above average relative to similar-sized companies on the B Impact Assessment. In particular, the company excels in the area of workforce development due to hiring and training programs for the chronically underemployed.

Employees were directly surveyed regarding job quality. Nearly 50% of the 55-person workforce completed this survey. Out of the 299 survey question responses recorded, 257 responses (86%) expressed agreement with positive statements about aspects of job quality at FutureFarms, 37 responses (12%) expressed no opinion, and only 5 responses (<2%) expressed disagreement. No responses expressed strong disagreement. Overwhelmingly positive results suggest reasonable employee satisfaction and quality of life.

**Indirect Jobs**

Five of nine key suppliers reported that quality of life (and work) has “very much improved” for them due to engagement with FF. One supplier reported a slight improvement, while three reported no change. No strong correlation was observed between supplier size and effect of FutureFarms on supplier quality of life, though smaller suppliers may be more likely to rely on the company for their

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\(^5\) Stanford Seed internal study on India indirect jobs multipliers by industry, May 2019  
\(^6\) Economic Policy Institute, *Updated Employment Multipliers for the U.S. Economy*, Josh Bivens, January 2019  
\(^7\) CDC Group, *Measuring Total Employment Effects: A lean data methodology for a portfolio of investments in developing countries*, Alex MacGillivray et al., February 2017  
\(^8\) Ibid., *IFC*
livelihood. Supplier responses revealed improved job creation, steady employment, and improvements in efficiency due to training.

Close supplier relationships may provide a more nuanced explanation as to why the FutureFarms employment multiplier is not as high as sector averages. Perhaps the firm contributes to increased supplier productivity, resulting in fewer workers accomplishing more, negating the need for job growth. Supplier statements support this theory, as does CEO Sriram Gopal, who says the firm works intentionally with small local suppliers to improve systems, processes, and productivity. Therefore FF may contribute to higher quality indirect jobs and indirect workers productivity. As stated by the IFC, it is only through both job growth and increased productivity that poverty reduction can be brought about.9

The average daily manufacturing wage in India was just under 350 Indian rupees (INR) in 2014 and is forecast to reach 475 INR in 2020.10 Relative poverty is defined as 230 INR per day and low income as 570 INR per day.11 All six FF suppliers report paying wages above the industry average. Supplier non-salaried daily wages range between 550 and 1200 rupees per day, 15% to 150% higher than the 2020 industry forecast. Supplier non-salaried daily wages average over 715 rupees per day, or over 50% higher than the forecast 2020 industry average. This suggests FF indirect workers have higher earning possibilities, perhaps because they are more productive, due in part to FF training.

Data sources: Trading Economics, India Average Daily Wage Rate in Manufacturing; 60 Decibels Lean Data study for Stanford Seed - Farm Harvest Farmer Insights

9 Ibid., IFC
10 Trading Economics, India Average Daily Wage Rate in Manufacturing
11 60 Decibels, Lean Data study for Stanford Seed - Farm Harvest Farmer Insights, August 2019
New Economy Creation on the Customer Side and Elevated Wages on Commercial Farms

FF trains laborers and managers on its commercial customers’ hydroponics farms. These farm jobs are likely of higher quality because they require advanced skillsets to handle hydroponics equipment and software. FutureFarms management reports laborers on commercial hydroponics farms producing higher crop yields per acre than on non-hydroponics farms, and report that laborers are paid above industry averages. These laborers are paid 15,000 to 18,000 INR per month, double the mandated nationwide minimum wage for agricultural laborers12 and by one estimate, about double the amount paid to the average Indian farmer.13 The average monthly wage paid to farm managers on customer farms, at about 25,000 INR per month, also exceeds averages for Indian laborers and cultivators. New economy agriculture can play a role in elevating job quality for the 260 million people employed in generally low-paying jobs in agriculture.14 Employment on hydroponic farms can help workers gain advanced skillsets, become more productive, and earn higher wages, contributing to poverty alleviation and sustainable development.

Figure 7: Indian Agricultural Wage Data

Data sources: The Economic Times, Government hikes minimum wage for agriculture labourer, March 2017; Hindustan Times, Rs 6,000 is 6% of a small farmer’s annual income, according to NSSO data, February 2019

Contribution to other Sustainable Development Goals

We have seen that FutureFarms contributes to SDG 4 (quality education, training, lifelong learning) via the training of farm employees. Furthermore, through the company’s products are services, FF impacts SDG 6 (sustainable water management) and SDG 12 (sustainable consumption and production). Depending on the crop, reported water savings due to use of FutureFarms’s hydroponics equipment range from a very high 70% to 90% savings over traditional agricultural

12 The Economic Times, Government hikes minimum wage for agriculture labourer, March 2017
13 Hindustan Times, Rs 6,000 is 6% of a small farmer’s annual income, according to NSSO data, February 2019
14 Hindustan Times, How many farmers does India really have?, August 2014
methods. The company’s technology enables pesticide avoidance — key to the company’s goal of giving access to clean, zero-pesticide food. This represents a 100% reduction in the pesticide runoff and chemical waste generated in substantial quantities through pesticide use on traditional farms. The firm’s B Impact Assessment score on environment provides further evidence of contribution to SDG 12.

Opportunities to further grow positive impact

- The company can consider going through official verification of B Impact Assessment score in order to (if verified) become a certified B Corp.
- Future Farms can continue collecting data from customer commercial farms to validate claims about water savings and elevated productivity (higher yields) on farms.
- The company can conduct deeper analysis on the waste, water and energy of the entire value chain (on both the supplier end and customer commercial farm end) to minimize negative environmental impact to the greatest extent possible.

Conclusion

Examination of indirect employment associated with FutureFarms’s supply chain demonstrates the company’s labor market impact, but also highlights important nuance in the sense that examination solely of raw employment numbers fails to capture impacts on quality of life and work that a company may bring about within its supply chain. Namely, FutureFarms promotes increased productivity in its supply chain, which is critical to higher earning potential, and thus, sustainable poverty reduction.

FutureFarms also represents an example of a business in which many positive impacts — from supply chain employment and direct employment to training, creation of new economic opportunities on commercial farms, and environmental impact reduction on commercial farms — can be welcome byproducts of a profit- and growth-driven enterprise.

Overall, since participating in the Stanford Seed Transformation Program in the year 2017-2018, FutureFarms has experienced tremendous growth in annual revenue, with nearly 300% growth the year it participated in Seed, and over 50% and over 30% growth in the following two years. FutureFarms has provided the equipment and employee training for 40 commercial hydroponics farming operations, much of that since its participation in the Seed program. It is evident that participation in the Seed Transformation Program has helped FutureFarms grow and scale its business.

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