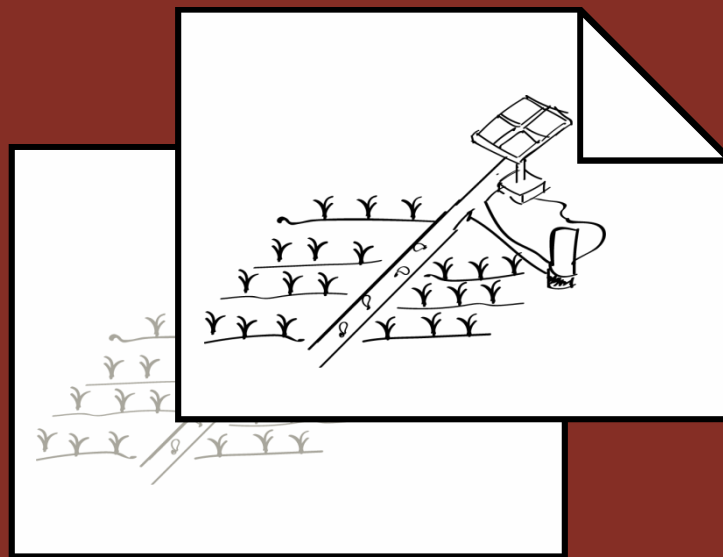


# Irrigation Solutions For Smallholder Farmers Replicator Workbook Preview



# What's it all about?




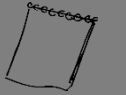


**Do you want to learn from proven business models from eco-inclusive enterprises around the world to tackle some of the key challenges your country is facing?**

Various entrepreneurs have already developed innovative business models that turned out to be successful and create relevant social, economic and environmental impacts. Replicating solutions that work can offer a fast and effective way to contribute to sustainable development and improve people's livelihoods.

## **The Replicator Workbook guides the process**

We developed our SEED Replicator Workbooks to guide you through the process of transferring a business model to another geographic location. Our workbooks identify best practices and shed light on conditions under which eco-inclusive enterprises in your sector operate. They include exercises that will guide you to explore your market and adapt business models to your context.

<b>Steps</b>	 <b>Detect</b> Challenges & Opportunities	 <b>Determine</b> Customer Needs & Segments	 <b>Discover</b> Inspiring Success Stories	 <b>Develop</b> Innovative Business Models
<b>Tools</b>	Business Idea Tool	Customer Segmenting Empathy Map	Business Model Adaptation	Visual Prototyping Lean Enterprise Blueprint

# How to use the Replicator Workbook?



In this workbook preview, click on **INSIGHTS** or **TOOLS** to discover more  
Or simply scroll to the next page



## Insights

into success stories & challenges of established eco-inclusive enterprises

In our workbook, we include various **READINGS** on **proven models of eco-inclusive enterprises** around the globe, complemented by sets of best practices and explanations of conditions under which eco-inclusive enterprises operate. These readings are based on experiences of entrepreneurs active in the field of **irrigation solutions for smallholder farmers**.



## Tools

to guide you step-by-step as you develop your own eco-inclusive enterprise

Each **TOOL** provides step-by-step guidance to arrive at key outcomes. The first page of each tool offers a short overview of **when** to use the tool, **what** you do in the tool, **how** the tool is best used and which **key outcomes** are expected. The workbooks explains in detail what to do and which questions to ask yourself at each step while using worksheets for you to document your outputs.



Detect sustainability challenges in your country and brainstorm solutions to tackle them. Learn about the potential of irrigation solutions for smallholder farmers and the social, environmental and economic impacts you could achieve.

# The Market for Irrigation Technologies



## The global market

- The global solar water pump market was estimated to be at around 102,300 units in 2013, with nearly 170GW of installed solar capacity in 2014. The growth has been even more explosive post-2014 especially in developing nations in Asia. Some studies suggest that the market is expected to grow at nearly 34% between 2016 and 2020.
- Some countries have significant solar water pump implementation plans.
  - The Indian government estimates the implementation of 100,000 pumps by 2020, while Bangladesh has a goal of 50,000 by 2025.
  - Morocco represents a USD\$75-100 million per year market for solar pumping according to the IFC, with the *Credit Agricole of Morocco* scheduled to distribute USD\$300 million in grants for the installation of over 100,000 pumps by 2020.
  - The South African market is also estimated to be USD\$100 million a year, with a strong policy in place to substitute diesel pumps with solar.
- The complementary use of drip irrigation with solar pumping has also increased substantially in Africa and Asia.

## Different types of irrigation interventions

1. **Solar water pumps:** These are typically submersible pumps between 1-10HP that run on solar power. They need a variable frequency drive inverter and pump water during the day time, often storing it in a reservoir before irrigating the fields. The initial costs of these pumps are high, but they require minimal operational maintenance and are completely fossil fuel-free, so have no dependence on any inefficient supply chain. They typically have a life of about 10-12 years and are being promoted in many countries through subsidies and low-cost debt support.
2. **Ground water recharging:** Technologies to recharge the rapidly depleting underground water are now becoming more and more innovative and cost-effective, with both a manual as well as automated product and service offering. Often customised accordingly to size of landholdings and climatic conditions, ground water recharging works mostly on a service-centric model that requires a certain degree of training and after-sales support.

## Opportunities along the entire value chain

A number of opportunities exists in the irrigation sector:

1. **Distribution and retail:** A number of companies in Europe and Asia are looking to expand to Africa and are hence searching for credible and qualified distributors and retailers for their technologies.
2. **Technical installations & after-sales support:** On-the-ground work, especially in the form of installation and commissioning and after sales service, are opportunities to align with these new efficient technologies.
3. **Training, market creation and management support:** Opportunities exist in support services like training, market creation and management.

# The Market for Irrigation Technologies



**Participate in an upcoming Replicator Workshop  
to discover more about Irrigation Solutions for  
Smallholder Farmers!**



Discover proven business models and adapt them to your local market. Identify key business model features.

# The Originators: FellaHPRO

Successful examples of eco-inclusive enterprises



**FellaHPRO** provides irrigation solutions to farmers, thereby improving agricultural yield and socio-economic conditions. The company has developed a very innovative floating solar pumping system customised for individual farmers.

FellaHPRO provides the complete supply, installation and servicing of the solar water pumps. It has also developed remote monitoring and control systems that help farmers control their water pumps through an iPhone mobile app. In this way, FellaHPRO ensures smooth pump operation.

**Value Proposition:** The company provides an affordable and innovative irrigation solution for small farmers to increase the yield of their fields.

## Key facts

**Founded in:** May 2016

**Country of head quarters:** Morocco

**Sites of operation:** Morocco

**Size of company:** Small company, 5 employees

**Website:** <https://www.facebook.com/FellaHPRO/>



# The Originators: Naireeta Services Pvt. Ltd.

Successful examples of eco-inclusive enterprises



**Naireeta Services** is an eco-inclusive enterprise that trains and empowers women to run and monitor a water-management system called Bhungroo™ (meaning 'a straw' in Gujarati) that injects and stores excess rainfall underground and lifts it out for use in dry spells.

The company, founded by experienced social workers, has made the conscious choice to have a direct impact on small and marginal farmers.

**Vision:** Naireeta services believe to emancipate 20 million female farmers from abject poverty and food insecurity by concerted promotion of Bhungroo™ along with commune agriculture processes under female leadership in drainage-affected areas across the globe.

## **Key facts**

**Founded in:** 2011-12

**Country of head quarters:** India

**Sites of operation:** India, Southeast Asia, six African countries (Ghana, Madagascar, Togo, Malawi, Zimbabwe, Burkina Faso)

**Size:** work with 18,000 farmers in India (by 2014)

**Turnover:** USD 230,769

Insights

# The Originators

Successful examples of eco-inclusive enterprises



Participate in an upcoming Replicator Workshop  
to discover **more exemplary eco-inclusive enterprises!**



Determine your target customer and the benefits you want to create for your stakeholders. Map out why your solution is unique and why your customers will love it!

# Your Customer Tool



### When?

To refine your business idea, you need to identify your potential customers. Therefore, this tool is best applied in the elaboration process of your business idea.

### What?

Customers stand in the centre of any business. Even the best idea is worthless if no one buys the product. Most enterprises serve different groups of customers (customer segments) that share certain characteristics. Identifying the different segments in the first step helps you to learn more about each of them. Once you have stepped into your customers' shoes, you can target your product and marketing activities better.

### How?

Sit down to think about which customer groups you would like to serve. Once you have identified the customer segments, it's time to go out and speak with your potential customers to gain a better understanding of their needs.

### Steps?

**Step 1** → Identify Customer Segments

**Step 2** → Understand Your Customers



## Key outcomes

- Get to know potential customer segments for your product
- Set the basis to build a customer-centric business model

# Your Customer Tool



## Step 1

### Identify Customer Segments

The first step is to divide the large pool of potential customers into customer segments. Customer segments are groups of customers who share certain characteristics or behave in a similar way.

- What will influence the preferences of potential customers towards your product or service?
- Will individual buyers have different expectations and needs from small stores? What about government institutions, NGOs or businesses?
- Will grandchildren have different expectations and needs than their grandparents for example? What about men and women, people with different religions, incomes, education levels or professions?
- Will people in rural areas have different expectations and needs from urban citizens? What about people in City X and City Y?
- Will people who have different knowledge about your product or service have different purchasing and usage patterns? Buy it more or less often, use it more or less often or use it in different ways?

Complete the information you gathered in the *Your Customer Segments* WORKSHEET on the following page. We have left space for up to five customer segments; you should identify at least two.

## Step 2

### Understand Your Customers

- Out of the customer segments you identified in Step 1, select the ones that appear most important for you, for example because of their size, because they are most likely to buy your product or because they are the easiest ones for you to reach.
- For each of your key customer segments complete the WORKSHEET *Your Empathy Map*.
- The *Empathy Maps* ask you to step into your customers' shoes: What does he/she think, say, see, do, feel, and hear? You can answer the questions in discussions with your team, through internet research, interviewing or observing potential customers etc.
- It's easier to answer the questions if you imagine one representative person of each segment, and add their name and age in the middle of the *Empathy Map*, in addition to the title of the customer segment.

You will find relevant key questions for your EMPATHY MAP on the next page!

# Your Customer



→ **What does she/he think?**

- What matters most to her/him? What moves her/him? What are her/his dreams? Which may be her/his worries?

→ **What does she/he say?**

- What does she/he tell others? What is his/her attitude? Does she/he influence others?

→ **What does she/he see?**

- What kind of products/services does your customer see in the market? What attempt is being made to influence her/him?

→ **What does she/he do?**

- What is she/he constantly trying to improve? What activities does she/he cherish doing? How does she/he spend their time?

→ **How does she/he feel?**

- What does she/he experience in relation to your product or service domain? This experience can be negative or positive.

→ **What does she/he hear?**

- What do friends say? What do her/his influencers say? What media channels influence her/his opinions on products and services?

- Keeping the following questions in mind will prove useful during the refinement process of your business idea:
  - How can you fulfill the needs of your customers, and provide them with more benefits?
  - Should the product or service be targeted towards different market segments?
  - Is there anything else you still want to learn about your customers?

# Your Customer



## WORKSHEET Your Customer Segments

### Step 1

Customer Segments				
Title	Farmers	Households	Industry manufacturer	
Description	Main source of livelihood is agriculture	Require consistent resources	Require reliable, consistent resources	

# Your Customer



## WORKSHEET Empathy Map

### Step 2

<p><b>What does she/he think?</b></p> <p>Looking for solution to keep agri yields high</p>	<p><b>What does she/he say?</b></p> <p>I need access to reliable water source</p> <p>I need better infrastructure to help my work</p>	<p><b>What does she/he see?</b></p> <p>Low crop yields</p> <p>Prolonged dry seasons</p>
<p><b>What does she/he hear?</b></p> <p>Fellow farmers complaining</p>	<p><b>Who is he/she?</b></p> <p>Female farmers</p>	<p><b>What does she/he do?</b></p> <p>Works the land to support her family</p> <p>Lead household decision-maker</p>
<p><b>What does she/he feel?</b></p> <p>Curious about alternatives</p> <p>Frustrated with situation</p>		
<p><b>How did you learn about your customer?</b></p> <p>Asking family members, friends, relatives and interviewing other locals.</p>		



# SEED Replicator Tools

A light gray world map with small flag icons placed on various continents. Thin white lines connect these flags, creating a global network pattern. A large, light green diagonal banner is overlaid on the map, containing the main text.

Participate in an upcoming Replicator Workshop  
to discover **more business planning tools!**



Let's replicate the success of **eco-inclusive enterprises** together!

Learn more about the SEED Replicator and how to apply to an upcoming workshop near you:

✉ [replicator@seed.uno](mailto:replicator@seed.uno)

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