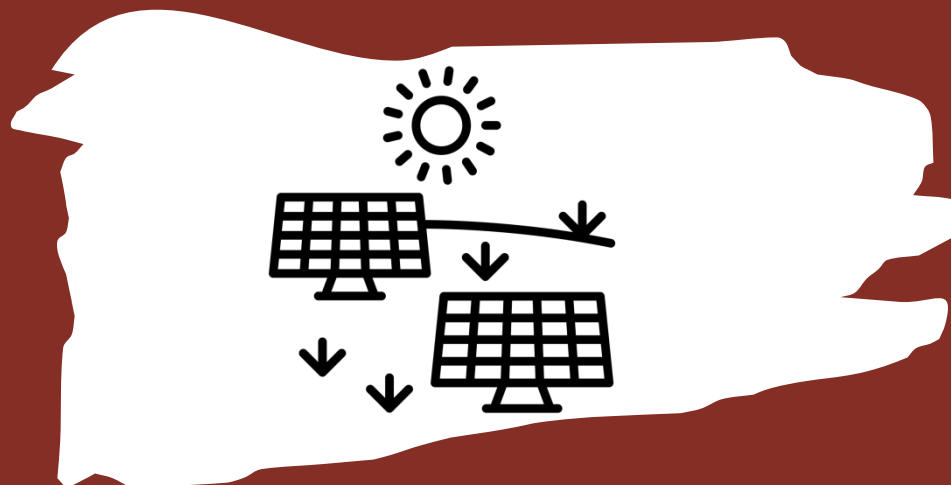


Driving Sustainable Community Development through Bottom-up Solar Energy Innovation

Replicator Workbook Preview



This workbook is supported by Hogan Lovells, the Government of Flanders and the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

What's it all about?




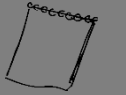


Do you want to learn from proven business models from eco-inclusive enterprises around the world to tackle some of the key challenges your country is facing?

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.

Steps	 Detect Challenges & Opportunities	 Determine Customer Needs & Segments	 Discover Inspiring Success Stories	 Develop Innovative Business Models
Tools	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

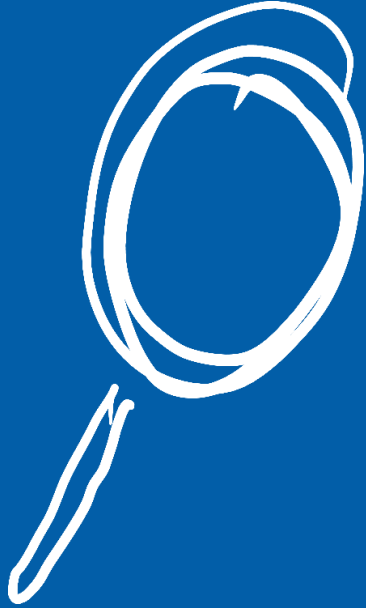
In our workbook, we include various **READINGS** on **proven models of eco-inclusive enterprises** around the globe, complemented by sets of best practices and explanations of conditions under which eco-inclusive enterprises operate. These readings are based on experiences of entrepreneurs active in the field of **Sustainable Community Development through Bottom-up Solar Energy Innovation**.



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 sustainable community development through bottom-up solar energy innovation and the social, environmental and economic impacts you could achieve.

Innovative bottom-up solar energy products



From high costs and financial challenges

Impoverished communities in rural and urban areas struggle to invest in infrastructural developments in their communities due to financial constraints and lack of government support. The existing renewable energy solutions need high levels of capital investment which is not easily available to local MSMEs. Given a low level of local ownership, many solar products and distribution models are not suitable for local needs. This presents a challenge to find implementable solutions in the areas of agriculture, water and sanitation, cooking and food storage technology among socio-economically deprived populations.

Rural communities in Nicaragua are plagued by wide scale deforestation and climate-related disasters which have left agricultural soil infertile. This has forced many to abandon their land and migrate to urban areas and other countries in search of jobs. In Kenya, problems arise from high costs of storage facilities for perishable agricultural products. This leads to food waste and loss of income for small scale farmers. India faces a challenge in the water and sanitation sector, where social stigma attached to sanitation facilities and the lack of willingness to invest in the sector causes continued open defecation and unhygienic water sources. Finally, unsustainable fishing practices in Malawi have led to biodiversity losses, high costs of fish and fish products and consequent food insecurity among the local communities.

... to income generation through innovative bottom-up solar solutions

By applying innovative bottom-up approaches and utilising local resources in the solar energy value chain, solutions are more effective, suitable to the local conditions and more accepted by community members. The success of bottom-up solar solutions requires the application of a context specific approach that takes into account the social and financial conditions of the target population and integrates communities in key decision making-processes.

Approaching problems bottom-up

- Understanding of the social constraints surrounding food habits of locals, stigmas around sanitation, and financial constraints that impact lifestyles of impoverished communities
- Training and educating of community members to take charge of problems and design needed solutions
- Implementing projects through members who combine traditional knowledge with modern technology

Employing innovative alternative methods to reduce costs like

- Electrifying storage facilities, restaurants, water pumps, water treatment plants with solar power that can run with low maintenance costs
- Locally building efficient wood fire stoves and biogas plants that provide cooking infrastructure for community kitchens
- Using kitchen waste and recycled waste water as agricultural inputs that are less expensive and easily accessible

Marketable solutions

- Decreasing dependency on public infrastructure such as grid, public water supply, etc and instead using autonomous technology which has immense potential to be replicated in different geographical areas
- Sharing profits from sales are with local populations to ensure long-term public buy-in and sustainability

Innovative bottom-up solar energy products



**Participate in an upcoming Replicator Workshop
to discover more about sustainable community
development through bottom-up solar innovation!**



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

The Originators: Association Grupo Fenix



Association Grupo Fenix (GF) facilitates technical and cultural exchanges between high schools and universities and members of their rural communities based on appropriate technologies and renewable energy. Community members use appropriate technologies and local resources to develop innovative products that are marketed by the local organizations partnered with GF. They are then able to generate profits from the sale of these products and services to tourists. The local communities also design and deliver educational courses for paying participants which are targeted at schools, universities and individual tourists. These courses are assisted by GF staff and delivered as a part of Educational Tourism (or edutourim) in Nicaragua.

Value Proposition: GF empowers local community members to develop practical skills and combine modern technologies with traditional practices and knowledge. This enables community members to steer their own path in the international transition to environmental sustainability. Through project activities that include PV installation, construction of solar dryers, solar cookers, dry latrine toilets, etc., the community has gained access to electricity, education, financial stability and health improvements as well as a protected land for community farming. Moreover, women have been integrated and empowered themselves to drive clean technology uptake and development.

Key facts:

Founded in: 1996

Country of headquarters: Nicaragua

Operates in: Rural community in northern Nicaragua

Employees (2018): 5

Website: www.grupofenix.org

The Originators: Masole Ammele

Successful examples of eco-inclusive enterprises



Masole Ammele uses solar energy in the fisheries value chain from production to drying of fish meat. The company imports low maintenance solar water pumps and makes them available to farmers, commercial ponds and hatcheries for fish and fingerling (baby fish) production. The farmers in rural and urban areas use permaculture ethics and sell freshly harvested and dried fish meat to customers on-site or through door-to-door services. The enterprise earns revenue from sales of fish, commission on marketing as well as from sales and installation of imported solar equipment for local institutions like rural growth centers, schools, etc.

Value Proposition: Given the low maintenance costs of solar pumps, revenue earned from the project is invested in education and infrastructural development in the community. Masole Ammele has disseminated permaculture methods of sustainable farming to reduce overfishing, increase biodiversity, and improve the water table. This has also improved food security of the region through more regular supply of locally produced fish and protein. Furthermore, the community benefits from clean energy and reduced environmental pollution.

Key facts:

Founded in: 2011

Country of headquarters: Malawi

Operates in: Rural areas, Lilongwe, Malawi

Employees (2018): 20

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

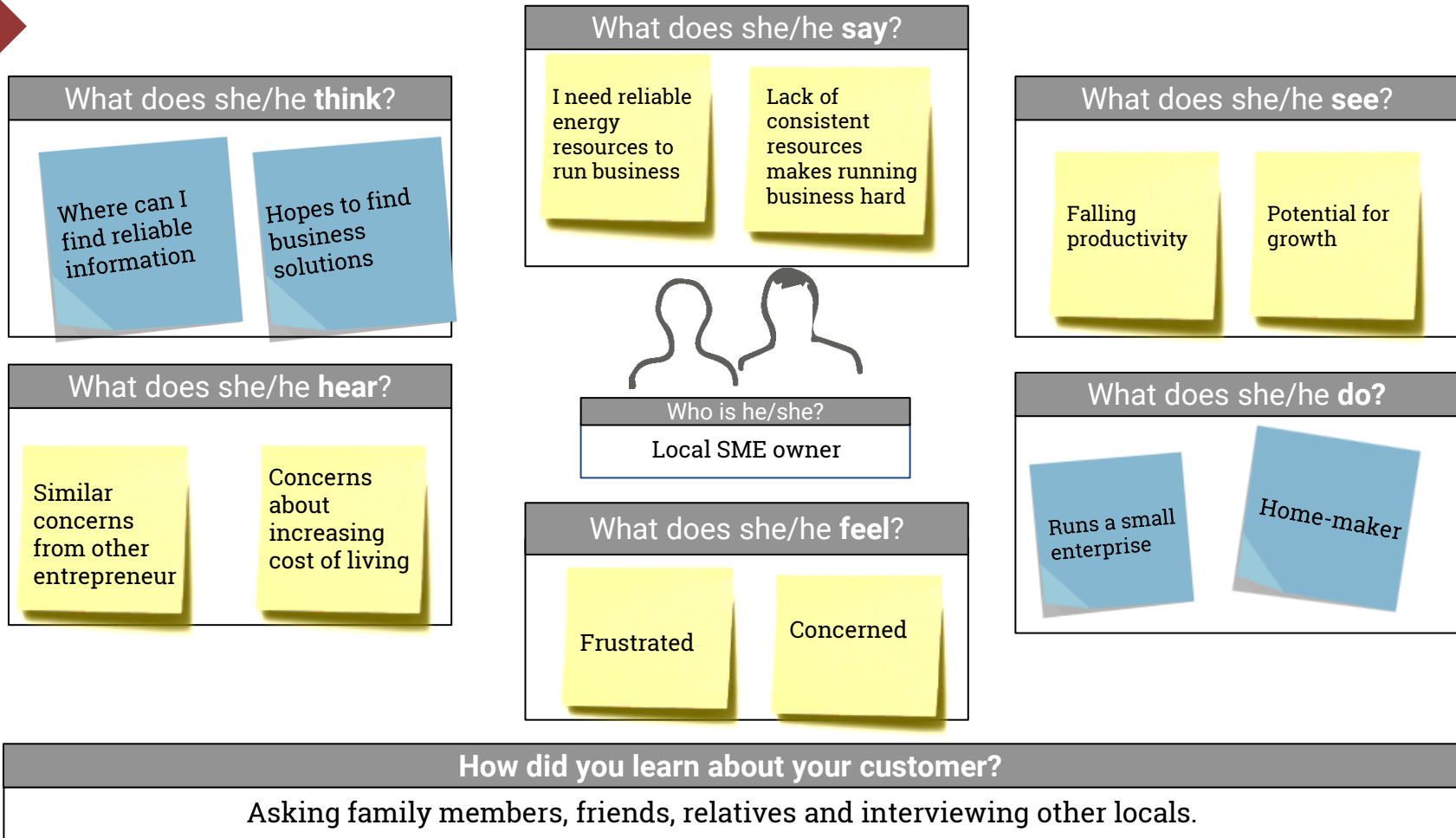
Customer Segments				
Title	Local farmers	Households	Small enterprises	
Description	Face water & other resource shortage	Face water & other resource shortage	Large production, causing pollution	

Your Customer



WORKSHEET Empathy Map

Step 2



SEED Replicator Tools

A light gray world map with small flag icons placed on various continents. Thin white lines connect these flags, creating a network across the globe. 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:

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