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UK ENGINEERS WITHOUT BORDERS

Scalability: Identifying a Business Model

Funded by:

UKaid from the British people

IKEA Foundation

energy saving trust

Assessment Criteria

- How well has your business model considered affordability, payment models, existing supply chains, manufacturing, distribution channels, local partners and services associated? Consider the pricing and costs strategies to make your business model commercially viable.

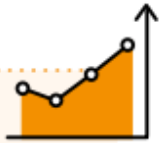
- What is the potential of your design to reduce production costs compared to existing alternatives? Consider materials used, price of components and cost of assembly.
- What is the potential of your design to improve usability compared to existing alternatives? Consider its ease of use, reliability and safety.

other technologies that exist in the market? Consider the sustainability of your business model (including manufacturing, distribution and operating) and its scalability.

- How does your design contribute to the Sustainable Development Goals (SDG), in particular SDG7 – Affordable and clean energy? How well have you demonstrated you understood the potential connections with the other 17 SDGs and its associated targets? Consider how the different areas of this assessment framework are contributing to this.

quality of people's lives? How does your design improve the desirability of your target end-user? Consider what their livelihood was before and the improvement your design will bring to them.

- How well has your design considered the Sustainable Development Goals' commitment to 'Leave no one behind'? In particular, consider gender equality and disability inclusion.



Scalability

How feasible is it that your design could get to market at scale?

Judges will want to see that you have considered the business case. Including considering the market opportunity, including market size, for your solution, and demonstrated how people will be able to access and afford this.

- How well have you considered the potential market for your product? Consider the target customer, size of market and customer value proposition.
- How well have you considered how people will be able to access and afford your product? Consider affordability, potential customer payment models and existing financial models.
- How well has your business model considered affordability, payment models, existing supply chains, manufacturing, distribution channels, local partners and services associated? Consider the pricing and costs strategies to make your business model commercially viable.

Agenda

- Introductions
- Speakers
  - **Martin Masiya**
  - **Shripathi Hadigal**
  - **Julien Potron**
- Q&A
- Survey and Closing

Meet our speakers

- **Martin Masiya** – Sollys Energy

- **Shripathi Hadigal** – SELCO Foundation

- **Julien Potron** – Nadji.Bi

Martin Masiya – Sollys Energy

13 minutes

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BUSINESS MODELS 101

Presented by: Martin Masiya
Date: 10/02/2022
Email: martin@sollysenergy.com

What is a Business Model?

Simply put, a business model is a company's plan for making a **Profit**. It's an explanation of how you deliver **Value** to your customers at an appropriate cost.

A business model describes how an organization creates, delivers, and captures value, in economic, social, cultural or other contexts.

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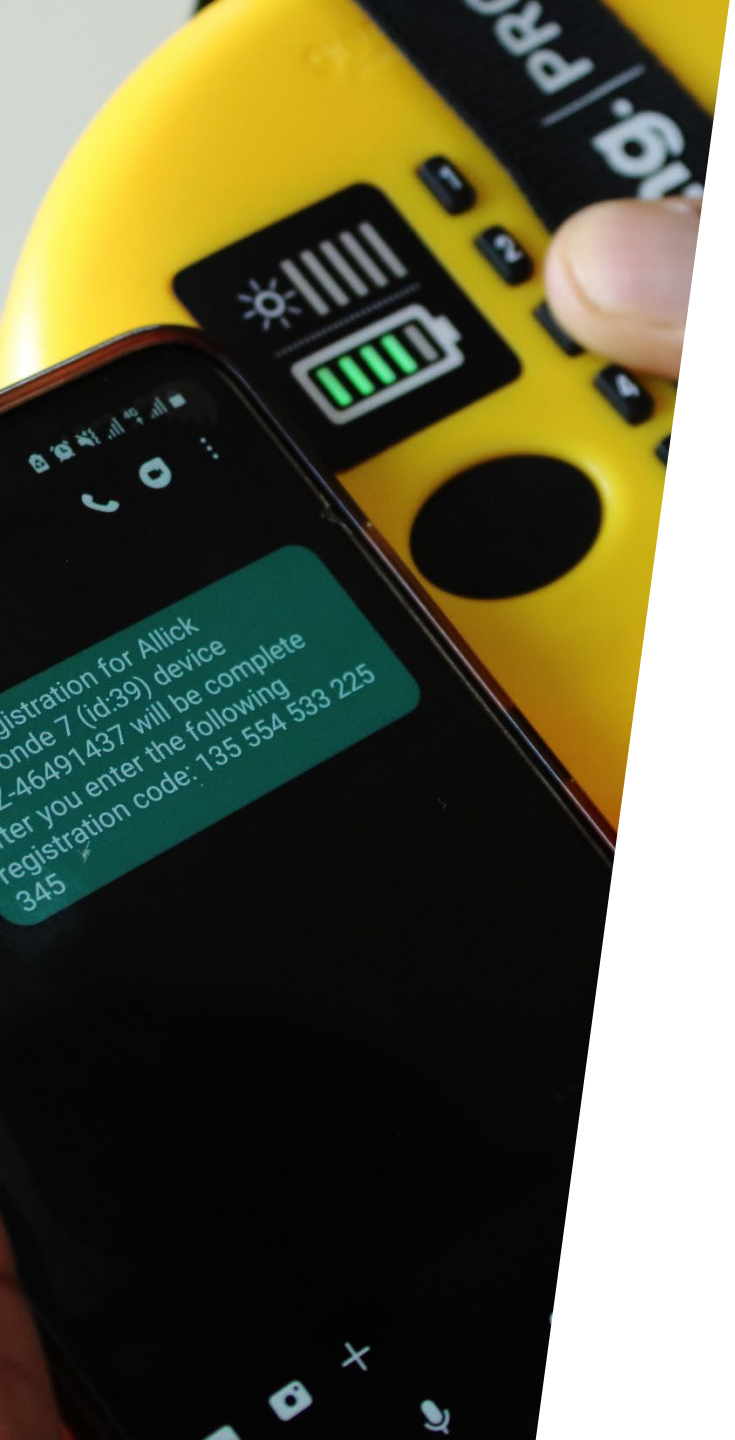

Why Are Business Models Important?

At its core, a business model explains four things:

- What product or service a company will sell.
- How it intends to market that product or service.
- What kind of expenses it will face.
- How it expects to turn a profit.

A business model is important because **it provides the investors the knowledge about the competitive edge of the company and provides better insight into working of the company**. A strong business model leads to cash generation and future expansion.

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How do you develop a business model?

A business model design in seven steps

1. Define the problem you're going to solve.
2. Define the customers for which the problem will be solved for.
3. Define the key customer and the key problem.
4. Define a set of possible solutions.
5. Define a set of possible monetization strategies for that solution.
6. Test and choose.

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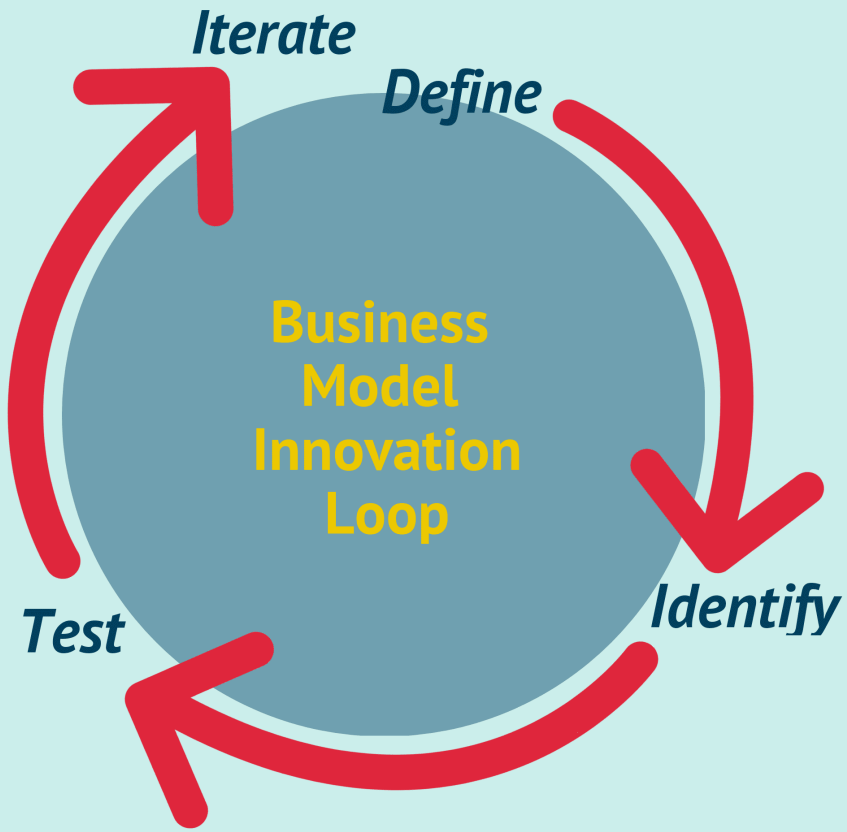
How To Design A Business Model

Define the problem you're going to solve, then define the customers for which the problem will be solved. Next, identify the customer and the problem. After that, define a set of possible solutions. After, define a set of possible monetization strategies for that solution, test, and choose your business model.



Source: https://fourweekmba.com/how-to-create-a-business-model/

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The Business Model Canvas

The business model canvas is a great tool to help you understand a business model in a straightforward, structured way.

Using this canvas will lead to insights about the customers you serve, what value propositions are offered through what channels, and how your company makes money.

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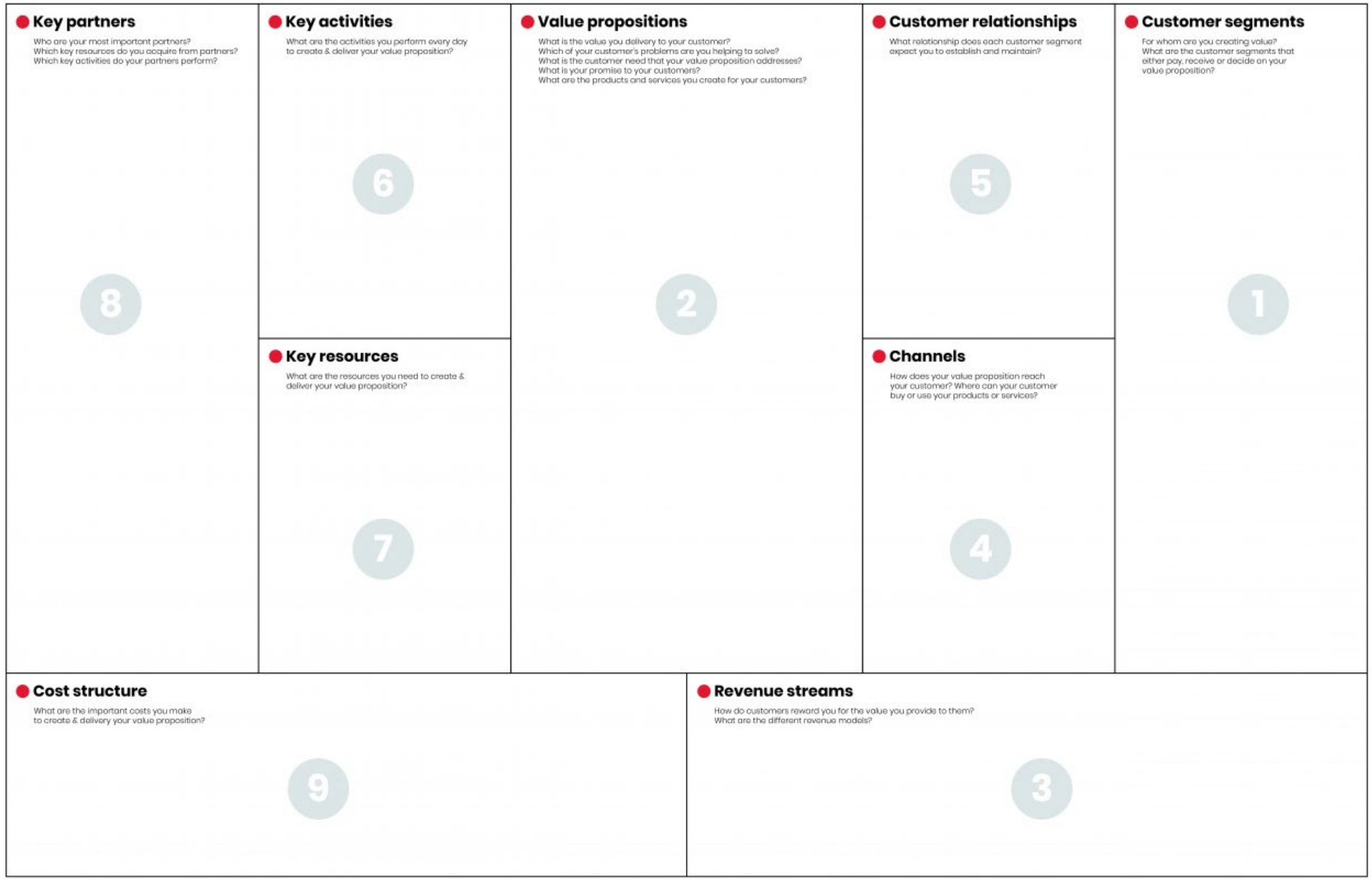
BMI • Business model canvas



Brought to

Source: https://www.businessmodelsinc.com/about-bmi/tools/business-model-canvas/

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Recommended Resources:

Blog: “How to Create a Business Model” https://fourweekmba.com/how-to-create-a-business-model/

Website Article: “Step by Step Guide to developing a Business Canvas” + Free Business Canvas Template

https://www.businessmodelsinc.com/about-bmi/tools/business-model-canvas/

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sun king
PRO
with EasyBuy™
LONG-LASTING SOLAR LANTEN
WITH USB PHONE CHARGER
sollys ener

QUESTIONS

STAY IN TOUCH!

MARTIN MASIYA

Founder and CEO – Sollys Energy Limited

https://linktr.ee/martinmasiya
Email: martin@sollysenergy.com

Shripathi Hadigal – SELCO Foundation

13 minutes

Solar Powered Livelihoods - Business Models

Solar Retail Refrigeration for fishery Example

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OVERVIEW OF THE PRESENTATION

- Typology of entrepreneurs with cold-storage in Fishery
- How has the refrigerators improved the businesses of entrepreneurs?
- Business Model and Technology
- Case study
- Ecosystem of Livelihoods

TYPOLOGY OF ENTREPRENEURS WITH NEED FOR REFRIGERATOR IN FISHERY

REFRIGERATION

MILK & DAIRY

BEVERAGES

FRESH JUICES

ICE-CREAMS

FISH

MEAT

FLOWERS & VEG

Typology of entrepreneurs

Fishermen with Small Boats

Catching around 100-150 kg fish everyday

Typology of entrepreneurs

Fishermen with Small Boats

Catching around 100-150 kg fish everyday

PROFILE

Where do they source fish?	Fish themselves
Where is their business?	On the shore (lake/ river/sea)
Whom/where do they sell?	Direct to customers; bigger wholesalers; small retailers
Why do they need cooling?	To store the bait, To keep the fish before or after selling it to wholesalers or retailers

Typology of entrepreneurs

Entrepreneurs selling fish in a market

Typology of entrepreneurs

Entrepreneurs selling fish in a market

PROFILE

Where do they source fish?	Inland wholesalers; Sellers on the shore
Where is their business?	Inland urban/ rural settings; Along the shore
Whom/where do they sell?	Urban or rural consumers of fish
Why do they need cooling?	To keep the fish at their small shops in the market

Typology of entrepreneurs

Entrepreneurs keeping fish at home and/or selling in the neighborhood

Typology of entrepreneurs

Entrepreneurs keeping fish at home, selling in the neighborhood

PROFILE

Where do they source fish?	Inland wholesalers; Sellers on the coast
Where is their business?	Inland urban/ rural settings;
Whom/where do they sell?	Households in that location + neighbouring villages/ small towns
Why do they need cooling?	To keep the fish at home

Typology of entrepreneurs

Home-to-Home Sellers of Fish

To provide new income sources and reduce recurring costs and reduce wastage for COVID affected fisher women

Increased Incomes by INR 3600
(Savings in purchase of ice, increased sales/ reduced wastage, diversification of products)

Affordable EMI estmated at INR 1700 p.m for 2 years

Estimated Subsidy Requirement is 60-70%

Fish Shops

To help reduce recurring costs for fish shops and reduce wastage

Increased Incomes by INR 4500
(Savings in purchase of ice, increased sales/ reduced wastage, diversification of products)

Affordable EMI estmated at INR 3000 p.m for 2 years

Estimated Subsidy Requirement is 30-40%

Fisherman

To help store bait in high demand periods and save costs

Increased Incomes by INR 8000
(Savings in purchase of ice, savings from inflation)

Affordable EMI estmated at INR 4200 p.m for 2 years

Estimated Subsidy Requirement is 20-30%

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So, where are small refrigerators used in the local fishery value chain?

Refrigeration - Possible Implementation Points

1

Fishermen’s Home

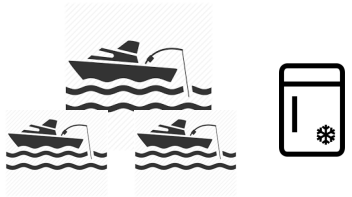
To keep bait fish/ unsold fish

Refrigeration - Possible Implementation Points

1

Fishermen’s Home

To keep bait fish/ unsold fish



2

On the small boats

To keep fish fresh while off-shore

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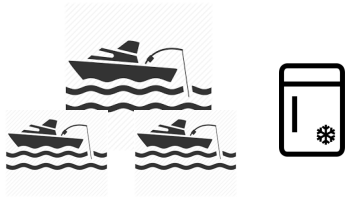
Refrigeration - Possible Implementation Points

1

Fishermen’s Home

To keep bait fish/ unsold fish



2

On the small boats

To keep fish fresh while off-shore

3

At the coast

To keep fish fresh in the market

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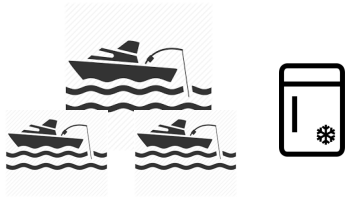
Refrigeration - Possible Implementation Points

1

Fishermen's Home

To keep bait fish/ unsold fish



2

On the small boats

To keep fish fresh while off-shore

3

At the coast

To keep fish fresh in the market

4

In the vehicle

To keep fish fresh in transit to inland towns/ villages

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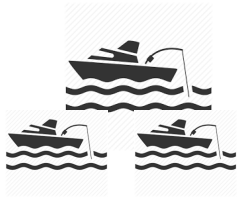
Refrigeration - Possible Implementation Points

1

Fishermen's Home

To keep bait fish/ unsold fish



2

On the small boats

To keep fish fresh while off-shore

3

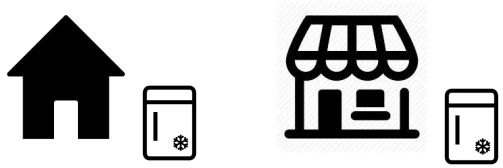
At the coast

To keep fish fresh in the market

4

In the vehicle

To keep fish fresh in transit to inland towns/ villages



5

At entrepreneur's home or shops

To store fish before/ after selling

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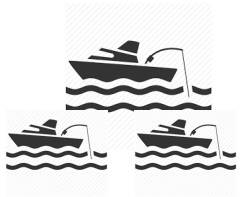
Refrigeration - Possible Implementation Points

1

Fishermen's Home

To keep bait fish/ unsold fish



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On the small boats

To keep fish fresh while off-shore

3

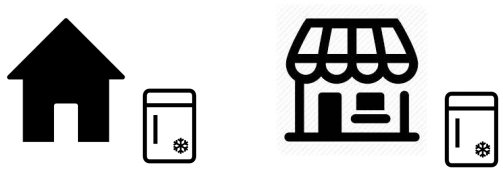
At the coast

To keep fish fresh in the market

4

In the vehicle

To keep fish fresh in transit to inland towns/ villages



5

At entrepreneur's home or shops

To store fish before/ after selling

6

In the small vehicles

To keep fish fresh during the business

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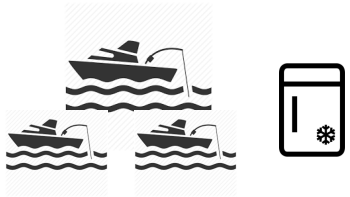
Refrigeration - Possible Implementation Points

1

Fishermen's Home

To keep bait fish/ unsold fish

2



On the small boats

To keep fish fresh while off-shore

3

At the coast

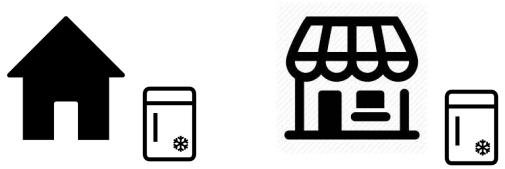
To keep fish fresh in the market

4

In the vehicle

To keep fish fresh in transit to inland towns/ villages

5



At entrepreneur's home or shops

To store fish before/ after selling

6

On the small vehicles

To keep fish fresh during the business

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Selection of Technology to suit the Business Models

Fridge at home

Fridge at local market

Storage of fish in the fridge

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Selection of Technology to suit the Business Models

Fridge at home

Fridge at local market

Storage of fish in the fridge

DEVIDAYAL SOLAR SOLUTIONS

SELCO

Solar Powered DC Fridge **200 Litres**

INR 1,25,000
USD 1657

Suitable for shops engaged in raw fish sales or processed fish sales

Stores 30-40 Kgs of Fish

Solar Powered DC Fridge **300 Litres**

INR 1,47,000
USD 1948

Suitable for storage of prey fish used by fisherman

Stores 40-50 Kgs of Fish

FOUNDATION

How Solar Refrigerators support these entrepreneurs?

Learnings from implementations

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Solar Refrigerators Impacts

DECREASES INPUT & TRANSACTION COSTS

INCREASES OUTPUT

PRODUCT RANGE & QUALITY

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Solar Refrigerators Impacts

DECREASES INPUT & TRANSACTION COSTS	INCREASES OUTPUT	PRODUCT RANGE & QUALITY
Savings on the bait		
Larger quantity purchase at the lower cost		
Savings on Ice to preserve the fish		
Lower transaction cost - from lesser frequent visits to buy the fish		
Reliable energy source - zero cost for electricity		

Solar Refrigerators Impacts

DECREASES INPUT & TRANSACTION COSTS	INCREASES OUTPUT	PRODUCT RANGE & QUALITY
Savings on the bait	Longer shelf life upto 10 days	
Larger quantity purchase at the lower cost	No product loss due to water melting from ice cubes	
Savings on Ice to preserve the fish	Selling when the prices are higher	
Lower transaction cost - from lesser frequent visits to buy the fish		
Reliable energy source - zero cost for electricity		

Solar Refrigerators Impacts

DECREASES INPUT & TRANSACTION COSTS	INCREASES OUTPUT	PRODUCT RANGE & QUALITY
Savings on the bait	Longer shelf life upto 10 days	Storing and selling fish types with more margins
Larger quantity purchase at the lower cost	No product loss due to water melting from ice cubes	Quality of fish is preserved and hygienic compared to keeping it in ice
Savings on Ice to preserve the fish	Selling when the prices are higher	
Lower transaction cost - from lesser frequent visits to buy the fish		
Reliable energy source - zero cost for electricity		

How’s the solar refrigerator improving the income of the entrepreneurs?

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Refrigeration for Fishery : How does it make a business sense for entrepreneurs?

	BUYING PRICE/ QUANTITY	INPUT COSTS	SELLING PRICE/ QUANTITY	PRODUCT VARIETY
PRE INTERVENTION				
POST INTERVENTION				
IMPACT				

Refrigeration for Fishery : How does it make a business sense for entrepreneurs?

	BUYING PRICE/ QUANTITY	INPUT COSTS	SELLING PRICE/ QUANTITY	PRODUCT VARIETY
PRE INTERVENTION	USD 20 For 10kg/ day	USD 1.5 For Ice/ day	USD 28 For 10kg/day	No special variety - higher risk without storage
POST INTERVENTION				
IMPACT				

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POST INTERVENTION	USD 17.5 For 10kg/ day **USD 2.5/ day**			
IMPACT				

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POST INTERVENTION	USD 17.5 For 10kg/ day ↓ **USD 2.5/ day**	USD 0 For ice ↓ **USD 1.5/ day**		
IMPACT				

Refrigeration for Fishery : How does it make a business sense for entrepreneurs?

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POST INTERVENTION	USD 17.5 For 10kg/ day ↓ **USD 2.5/ day**	USD 0 For ice ↓ **USD 1.5/ day**	USD 30 For 10kg/ day ↑ **USD 2/ day**	
IMPACT				

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IMPACT	**USD 2.5/ day**	**USD 1.5/ day**	**USD 2/ day**	**USD 3/ day**

Refrigeration for Fishery : How does it make a business sense for entrepreneurs?

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IMPACT	**USD 250** increase in revenue/ month + savings due to less spoilage, lesser visits to the town to purchase			

Case Study - Microentrepreneur keeping fish at home, selling in the neighboring villages

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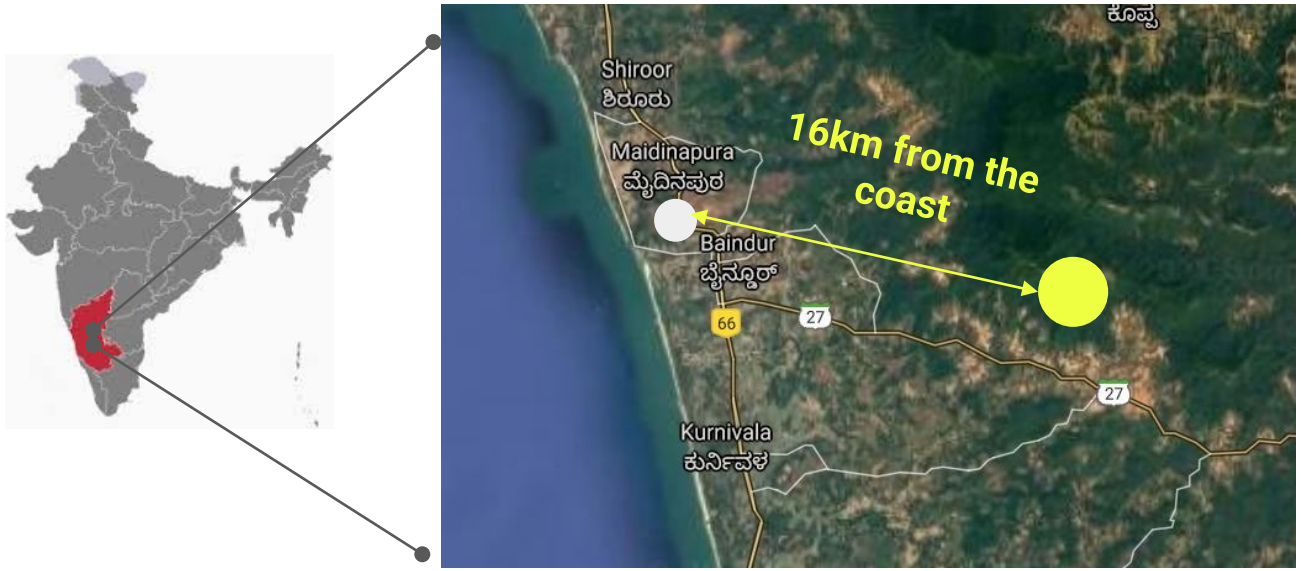
Case Study - 1: Refrigeration for small home-based entrepreneur



Remote & Rural
Forest Area
Scattered Villages
Grid Connectivity Issue

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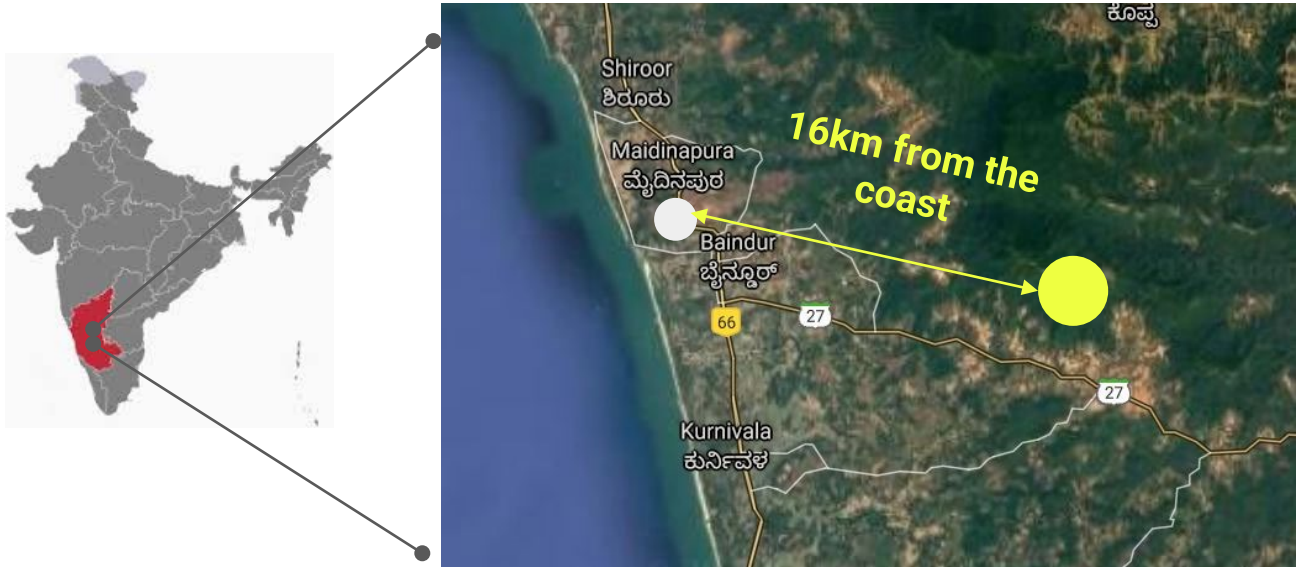
Case Study - 1: Refrigeration for small home-based entrepreneur

Entrepreneur Purchasing fish from Byndoor coast



Remote & Rural
Forest Area
Scattered Villages
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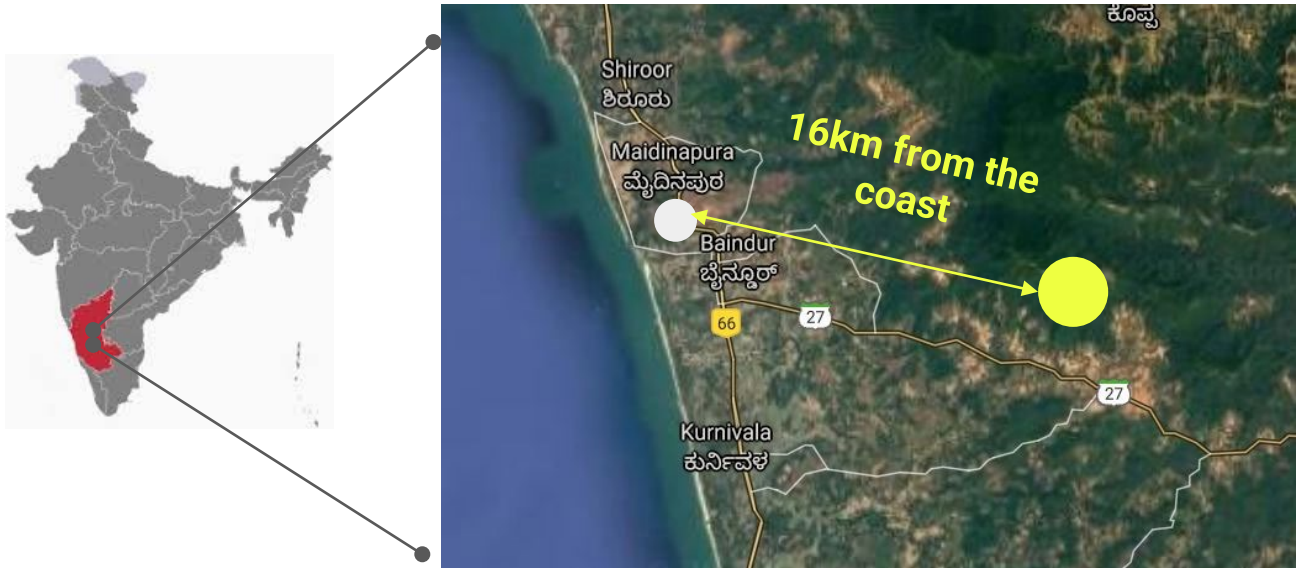
Case Study - 1: Refrigeration for small home-based entrepreneur

Entrepreneur Purchasing fish from Byndoor coast

16km from the coast to the village of Golihole



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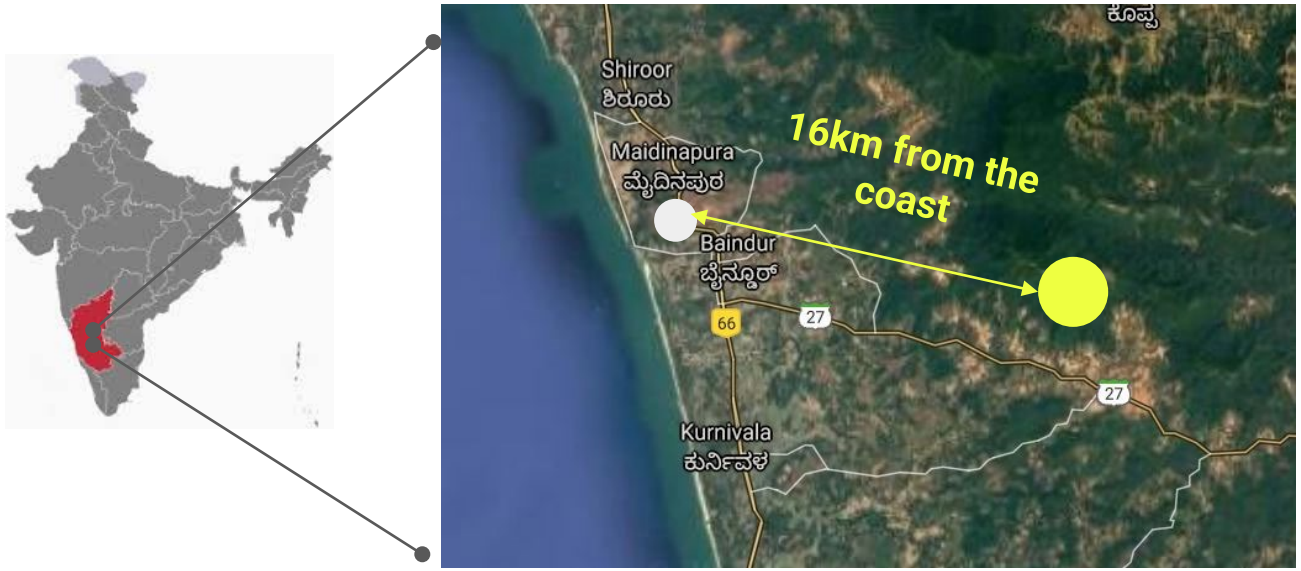
Case Study - 1: Refrigeration for small home-based entrepreneur

Entrepreneur Purchasing fish from Byndoor coast

16km from the coast to the village of Golihole

200 Ltr solar fridge at home to keep the fish



Remote & Rural
Forest Area
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Case Study - 1: Refrigeration for small home-based entrepreneur

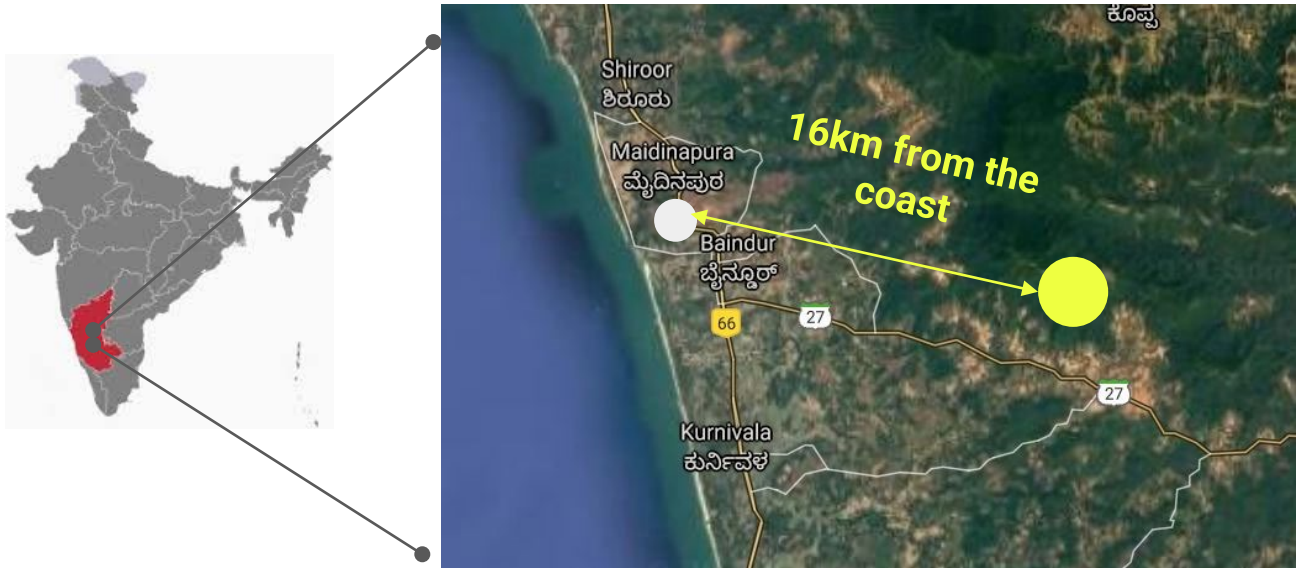
Entrepreneur Purchasing fish from Byndoor coast

16km from the coast to the village of Golihole

200 Ltr solar fridge at home to keep the fish

Covering 6 villages near Golihole

Consumers



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Grid Connectivity Issue

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Case Study - 1: Refrigeration for small home-based entrepreneur

Challenges:

- **Frequent visits to the town** to buy the fish - often not possible due to the time constraints.
- This created **inconsistency** in catering to the local markets.
- This led to **sellers from the town** coming to the villages to sell the fish - the price was higher and no local entrepreneurship.
- **High input and transaction costs** for the rural entrepreneur - Ice, fuel.
- **High spoilage** of fish - Ice melting, no cold-storage, thus less income.

Case Study - 1: Refrigeration for small home-based entrepreneur

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- **High input and transaction costs** for the rural entrepreneur - Ice, fuel.
- **High spoilage** of fish - Ice melting, no cold-storage, thus less income.

Solution:

- 200 Ltr Solar Refrigerator to store fish at home.

Critical role of different stakeholders for the sustainability of the solution

Stakeholder mapping

TECHNOLOGY SUPPLIER

SERVICING & MAINTENANCE

LOCAL ENTERPRISE/ NGO FOR IMPLEMENTATION

TRAINING & CAPACITATION

COMMUNITY BASED ORGANIZATION FOR MOBILIZATION/ LINKAGE

FINANCING

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THANK YOU!

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Julien Potron – Nadji.bi

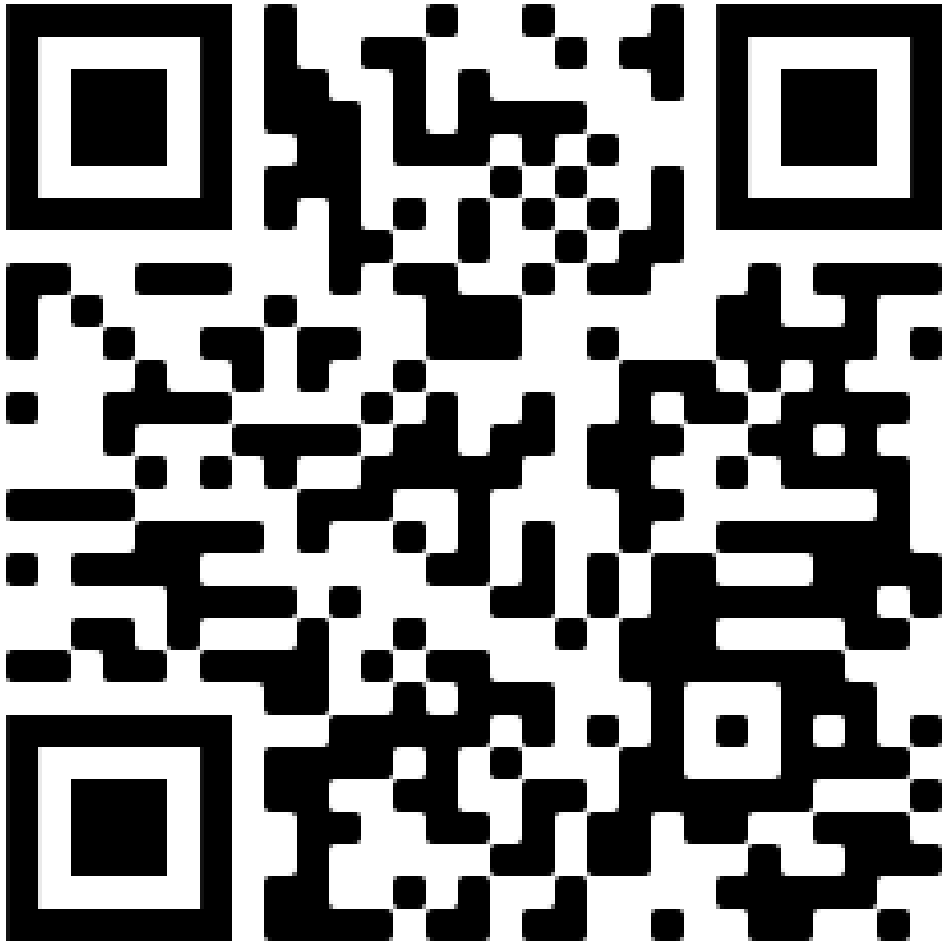
13 minutes

Q&A

Short feedback survey

Bit.ly/EforADCFeedbackSurvey2021-22

Newsletter sign up:



bit.ly/DesignChallengeNewsletter


EFFICIENCY
FOR
ACCESS