

# REPLICATION

Of Sustainable Energy Ecosystems



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## What does replication mean and why is it important?

Scale, in the conventional narrative, is typically approached as 'super-sizing the organization to spread the reach of a solution'. Often it involves a product focus and in a manner that standardizes solutions without an appreciation for differing contexts and maturity of parts of the energy access ecosystem.

SELCO believes that **the notion of scale should move beyond the one-model/ technological product oriented paradigm to instead super size processes or enabling conditions that allow for context-driven solutions suited to local needs.** These enabling conditions include **local stakeholders, financing, policy, high risk innovations and human resource development.**

This would lead to a focus on standardizing processes/enabling conditions and contextualization of solutions.

If geographies -countries, states, districts, villages- can be viewed as contexts with particular traits -rural, urban, migrants, farmers, steady incomes vs season cash flows- and maturity of ecosystems- policy, innovations, local stakeholders, financing, human resources- then one can analogize how solutions can be designed and deployed. This can then cut across geographic boundaries to be applied based on the features of that particular context.

## Replicating solutions, processes and ecosystem building learning across similar contexts



Rental & Service  
Models for  
Basic Necessities



Portable  
infrastructure &  
thermal comfort



Remedial healthcare  
& education services



Technology and  
capacity building to  
augment livelihoods

### MIGRATING COMMUNITY IN INDIA



### REFUGEE CAMPS IN AFRICA



**Replication can be an incorporation of tested practices, principles into new or existing delivery agents (enterprises or NGOs or communities) in either the same or different geographic region. In doing so one contributes to scaling solutions through reproducing an (existing) entire model or process and adapting it to local contexts. Scale on the other hand often represents an expansion of practices and impact towards growing revenues, target customers, reach and so on within an organization.**

The foundation of replication lies in learnings from on-ground implementations of sustainable energy access solutions across a wide range of geographical, socio-economic and sectoral contexts. Every product/ process innovation, programmatic intervention, institution thought process building and ecosystem strengthening program is evolved through multiple phases of successes and failures.

## Examples of Typologies of Replication

### REPLICATION OF PROCESSES TO UNLOCK FINANCING

Dearth of domestic formal financing based on cash flows of end users thus denying asset ownership.



**Eg. Revolving Fund as a tool/process to unlock domestic financing in various geographies, with local partners from a village to district to state levels.**

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### REPLICATION OF AN ENERGY DELIVERY MECHANISM

Difficulty for local enterprises to design and deploy solutions that the end user is aware of and can reach the door step of the poor.



**Eg. Adapting processes or strategies among local solar enterprises in the last mile delivery of energy solutions via incubation programs.**

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### REPLICATION VIA INSTITUTIONS

Integrating sustainable energy into program designs and implementation of sector or ecosystem pillar specific stakeholders in the development sector.



**Eg. Incorporating sustainable energy access solutions within the program design and implementation of a health NGO, Karuna Trust like health-energy audits, co-design energy efficient maternal health care machines**

# Replication of a Financial Process

## Unlocking Long Term Local Financing for Energy Access via Revolving Funds

In the process of facilitating energy access, one of key hurdles for end users and micro entrepreneurs across the country continues to be access to credit. Currently, there are pools of funding available for renewable energy projects and for credit to entrepreneurs. However, accessing these funds and schemes for solutions and entrepreneurship directly linked to energy access has been limited, owing primarily to the following:

**Limited knowledge amongst financiers about the economics and processes involved in lending to this sector, as well as risk mitigation techniques**

**Skepticism amongst bankers on the existence of strong networks to install and maintain systems**

**Fear of non-performing assets due to challenges involved in repayments, collections**

**Small ticket sizes of such loans while transaction costs remain the same**

While replicating a certain financial process, the similarity in the contexts are identified on the basis of the financial ecosystem present in a region- presence of banking infrastructure, civil society organizations, presence and technical capacity of solution providers, awareness on solutions, cashflows, loan terms and government schemes.

**A specific example of a financial innovation replication could be seen in the way 'Revolving Fund' innovation and its application in the decentralized energy sector emerged. It was from the need to demonstrate affordability and ability to pay by the specific typology of vulnerable end users to own decentralized energy systems.**





## Common contexts observed for different communities

Remote community with no formal prior financing

Absence of local financial institution/ lack of confidence

Presence of a local grassroots organisation

PROCESS  
INNOVATION

**Revolving funds to build financial credibility of the community and the financial product innovated upon**

Revolving funds are used to facilitate end user financing through a community partner in the absence of a financial institution or bank. The repayment of the loan helps refurbish the fund to further extend loans. Typically, an implementing partner would keep a part of the repayment as an administrative fee or towards loan collection and fund maintenance.

TOOL

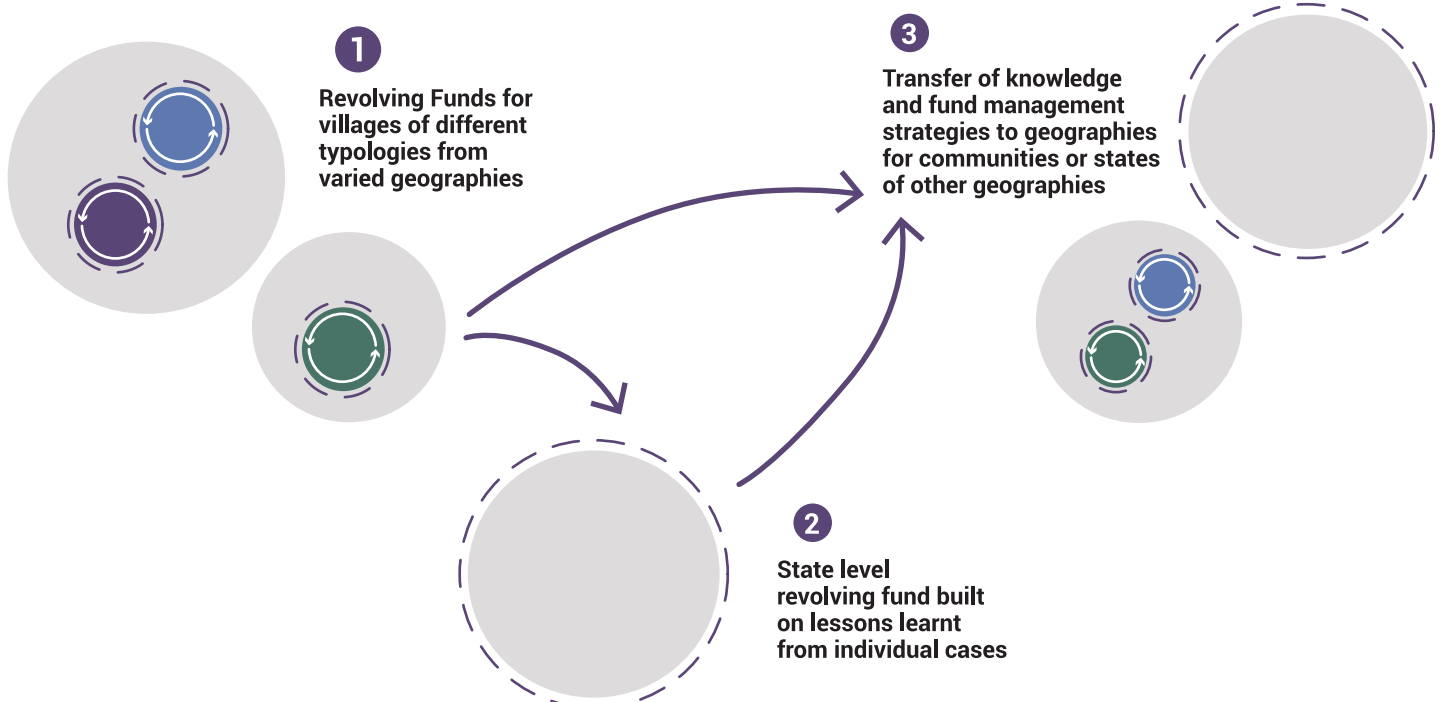
**REVOLVING FUND**

PROCESS

OBJECTIVE

**UNLOCKING OF LOCAL FINANCE**

- Community Cash Flow Analysed
- Loan Terms Identified
- Repayment patterns documented
- Credit worthiness of the community established
- Stronger case made for decentralised solar solutions



# Institutional Replication

## Health and Energy Nexus

One of the ways to scale up the integration of energy access to deliver sustainable solutions is by facilitating thought process changes within various institutions. This is done by:

Plugging in a critical role by an ecosystem stakeholder (i.e. Human Resource development, finance, incubation, policy, innovation) in the design and deployment of a sustainable energy solution

Within the program design and internal policies of a development sector partner (ex. health, habitat, livelihoods, education) on how sustainable energy could act as a catalyst in the delivery of their solutions.

Decentralized energies like solar have disrupted the delivery models making it available in a more modular form and thus making it affordable at multiple levels. For example, availability of sustainable energies especially for health in a decentralized mode also pushes innovations in healthcare technologies, increases the efficiencies of medical devices and gives rise to newer delivery models if implemented in a holistic manner ie considering technology, finance and ownership models in consonance with each other.

SELCO Foundation proposes a shift in evaluating and implementing health services using sustainable energy as an enabler. By integrating models and processes in energy efficiency and sustainable energy within the health sector as described above, models emerge that democratise delivery of health in a sustainable manner at the doorstep of **underserved populations**.

### Eg. Institutionalising Health-Energy Nexus with Health Partner

#### Decentralised Sustainable Energy

Conduct health-energy audits for health centres

#### Built Environments

Incorporate energy efficient building designs for labour rooms, primary health centres.

#### Training & Capacity Building

Capacitate healthcare staff on usage of the concept of decentralised, renewable, sustainable and efficient energy in PHC and Sub Centre

#### Energy Efficient Technologies

Solar powered health centers - replacement of inefficient equipments and procure/install new efficient equipment

#### Policy

Advocate to influence government procurement guidelines of energy efficient equipment.

Advocate to divert budgets on diesel backup operations towards solar powering equipment.

Advocate to influence hospital building guidelines to include sustainable and efficient designs.



SELCO Foundation is dedicated to innovating and replicating customized solutions, processes and ecosystem building methodologies for various developmental sectors with sustainable energy as a critical driving factor in its work.

**SELCO first began experimenting with its ecosystem building methodology in 1995 and has since then proven its use across various regions, programs, domains and levels, of sustainable energy access.**



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