



# ENERGY ACCESS AND INNOVATION CHALLENGE

DESIGNING SOCIALLY, ECONOMICALLY, ENVIRONMENTALLY SUSTAINABLE, HOLISTIC SOLUTIONS

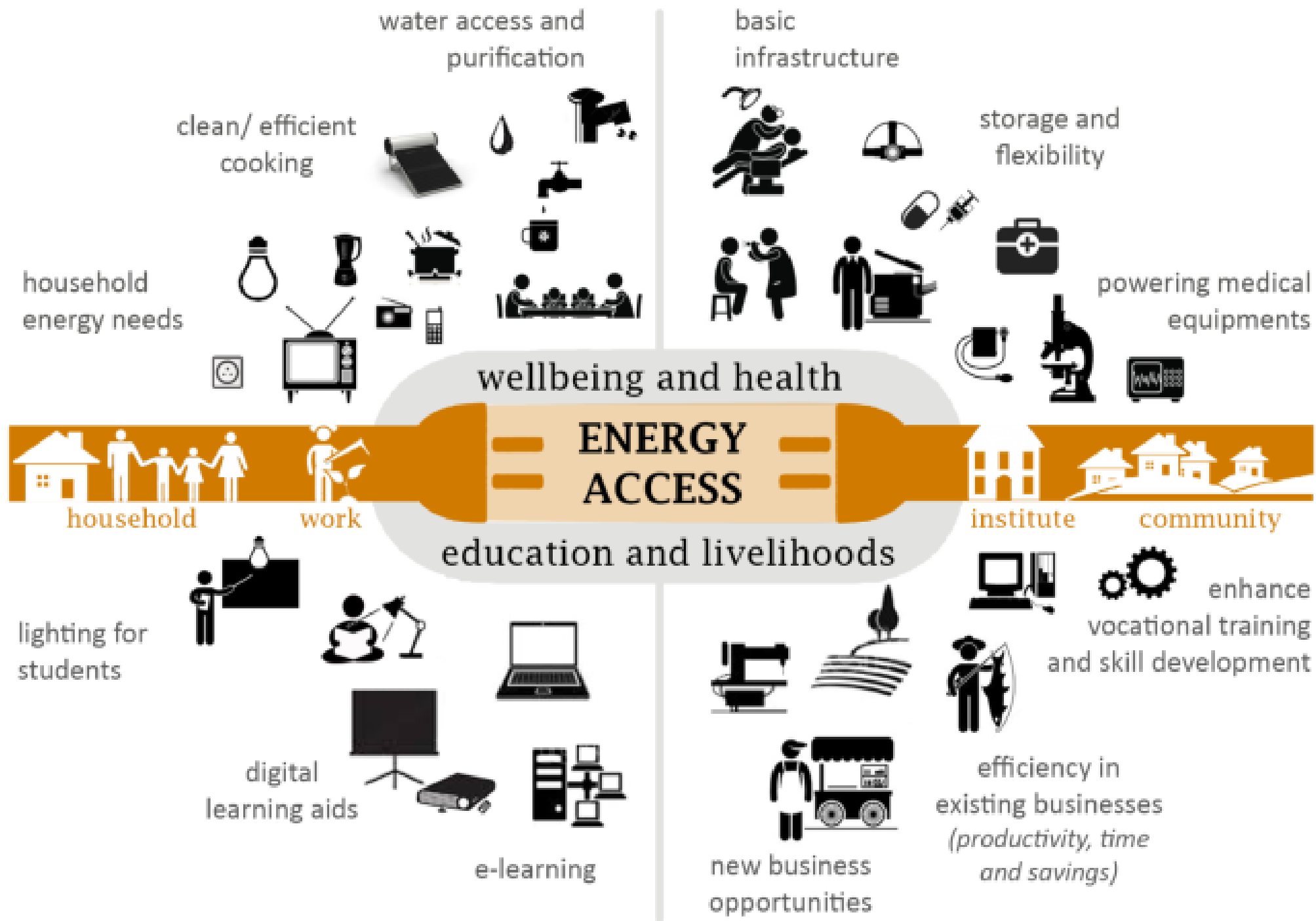


For more information check : <http://energyaccessandinnovationchallenge.wordpress.com>  
Contact : [kumar@mech.iitkgp.ernet.in](mailto:kumar@mech.iitkgp.ernet.in) | [shanti@selcofoundation.org](mailto:shanti@selcofoundation.org)

## Orientation workshop

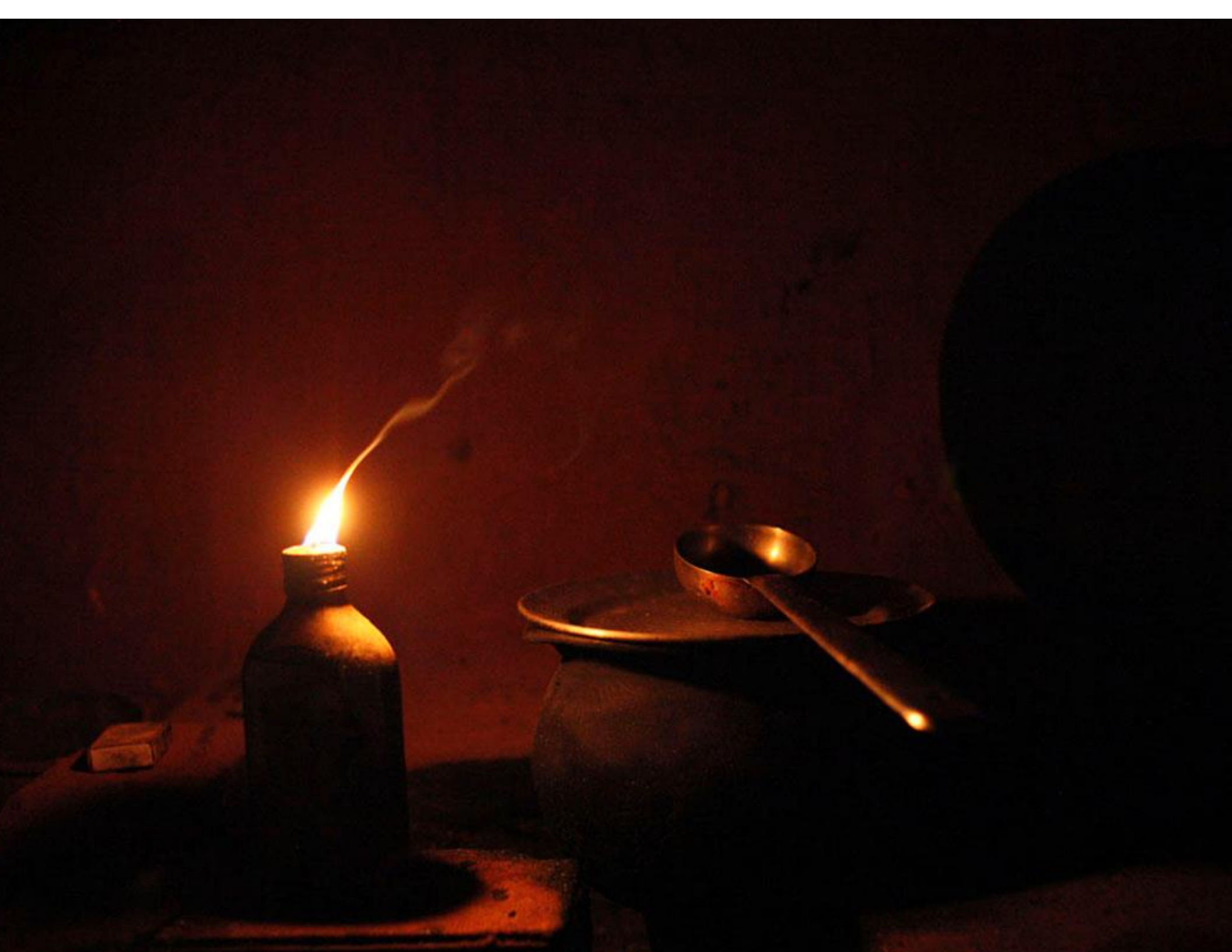
27 August 2017

IIT Kgp



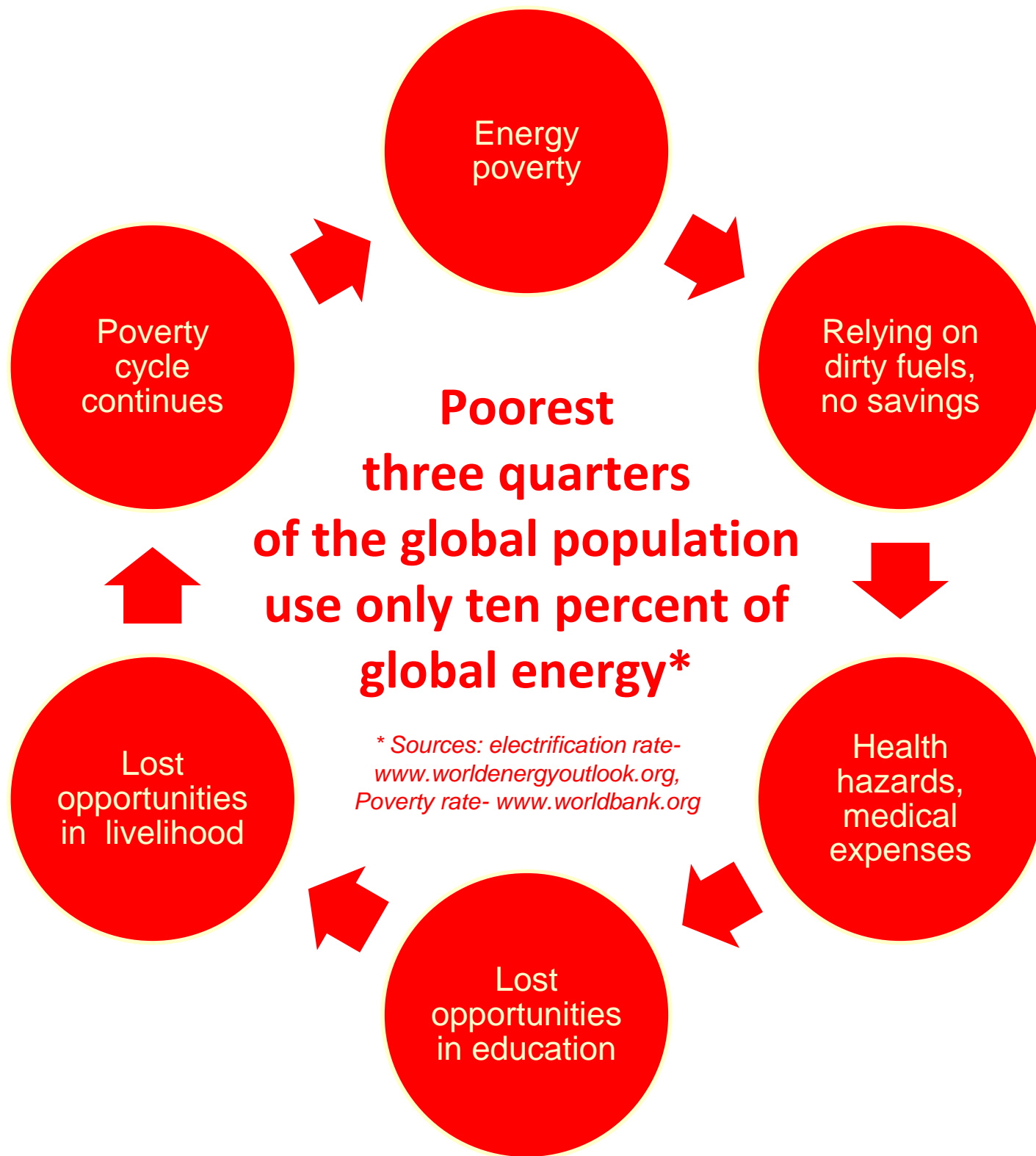
**What is energy poverty?**



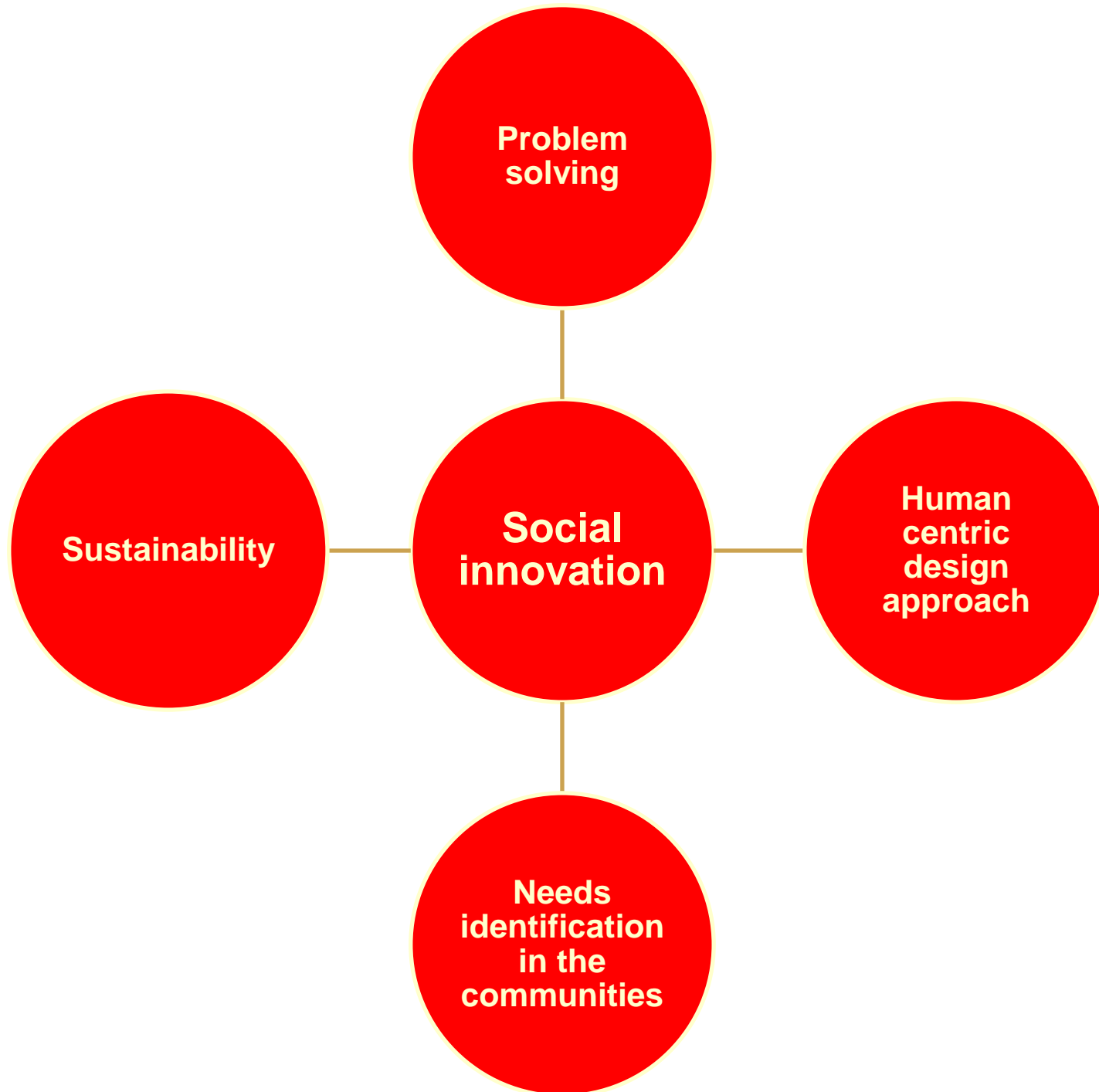






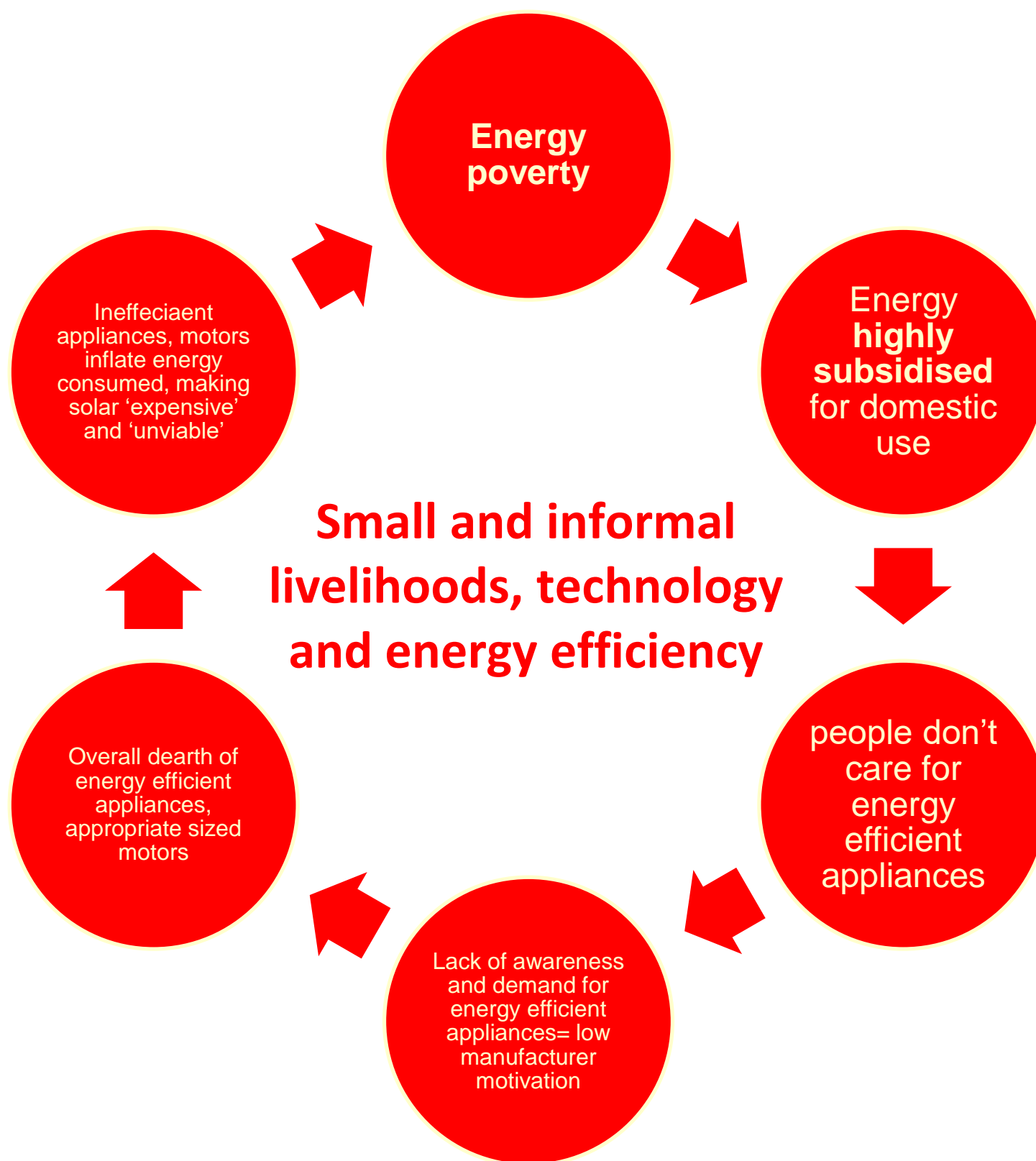






## Small and informal livelihoods, technology and energy efficiency





# Energy and education



# Energy and Health



# HEALTH TECHNOLOGY

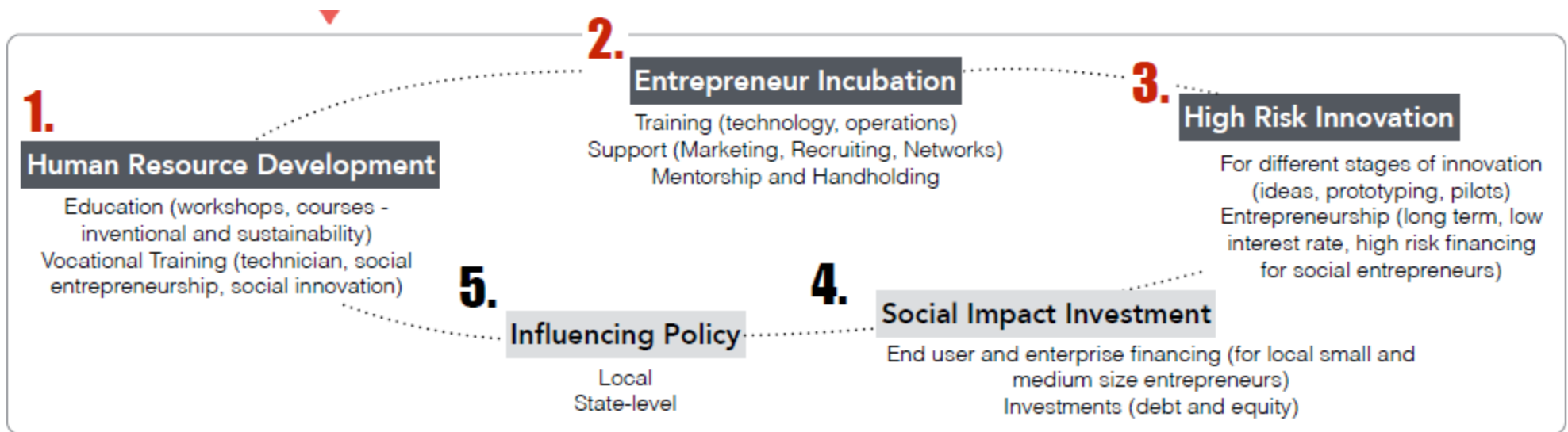


- Efficient medical devices
- Information and Communication Technology
- Telemedicine





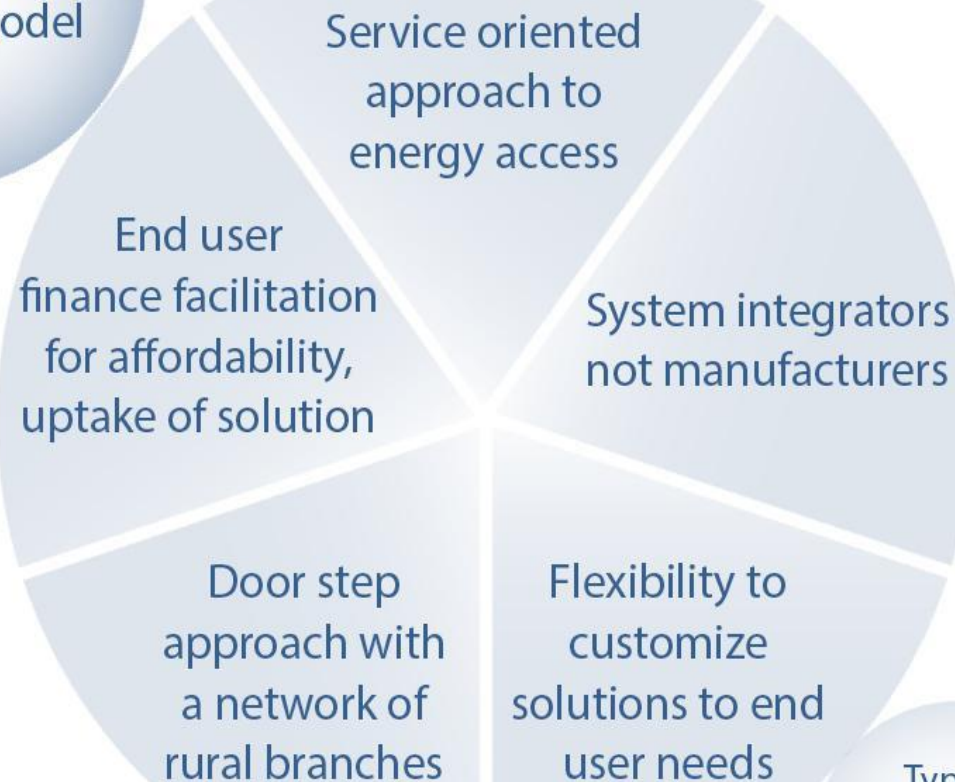
# SELCO Incubation Centre



# SELCO India today



**SELCO's**  
socio-commercial  
business model



Typical system cost:  
**Rs. 7000 to**  
**Rs. 25,000**

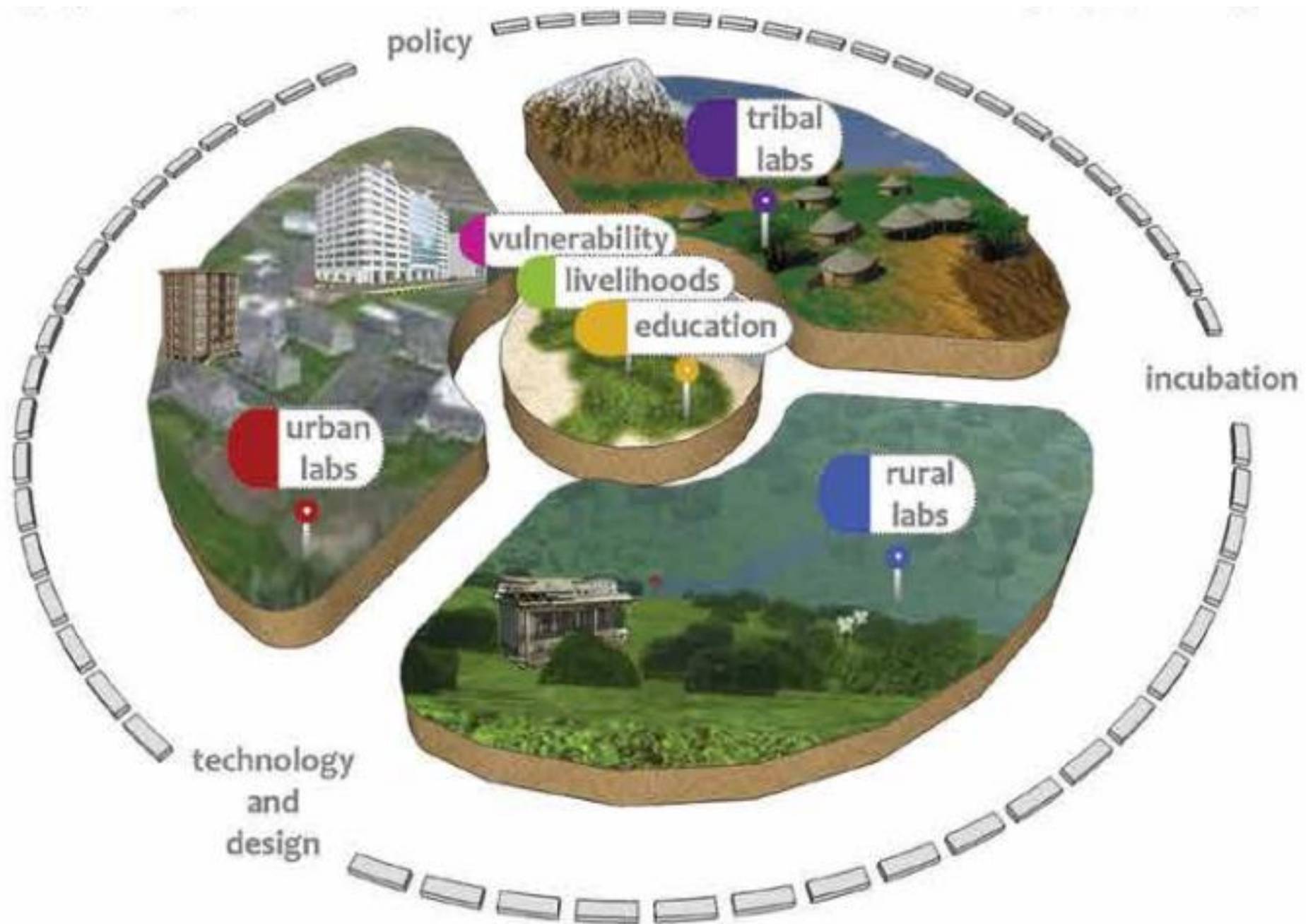
## Key share-holders

Lemelson Foundation  
Good Energies  
Foundation

6 states  
45 Branches  
347 employees



# SELCO Foundation



**MANDATE:**

**-Bridging gaps in the ecosystem,**

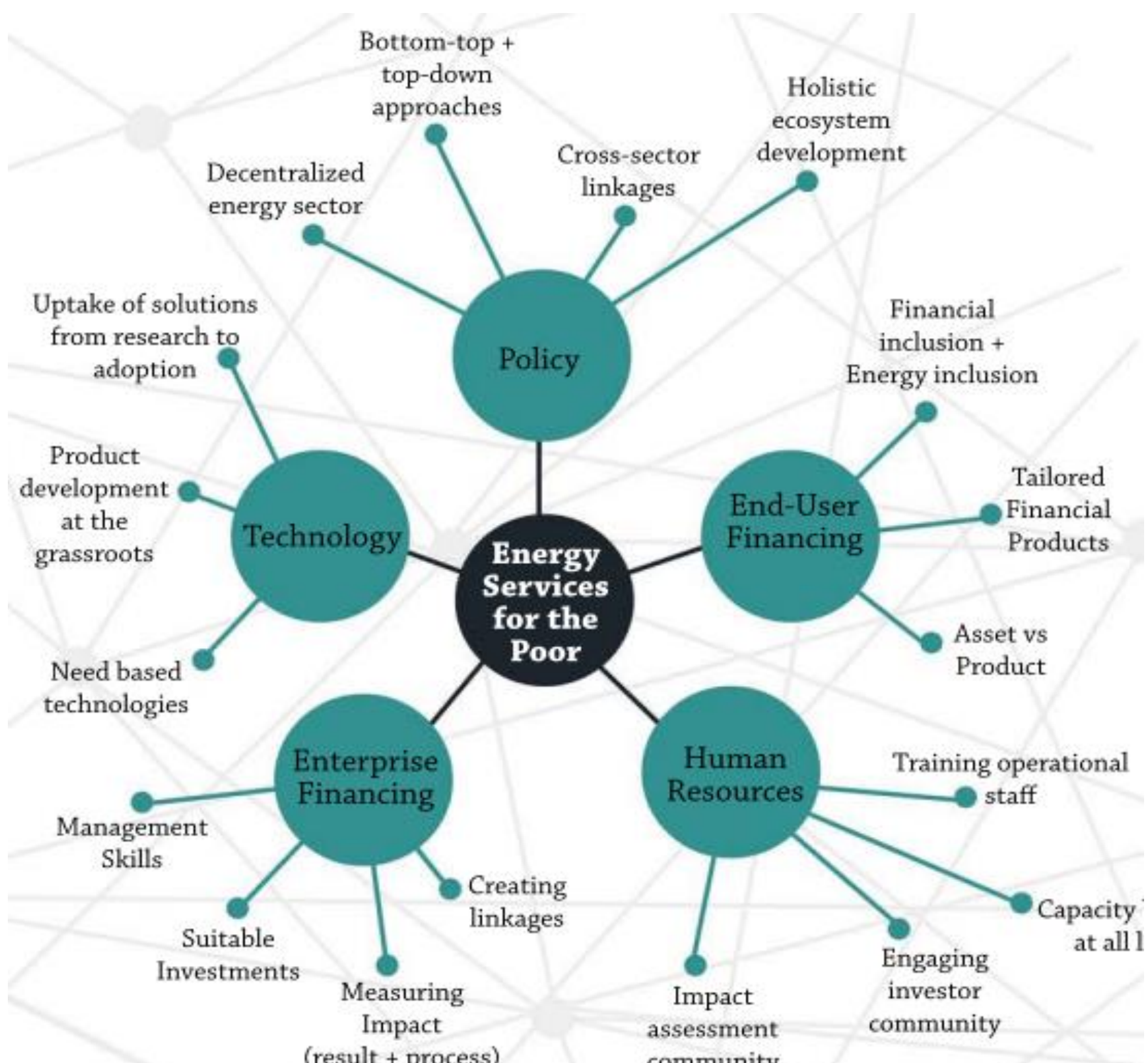
**-Building solutions that are-**

*holistic (social, financial, technical),*

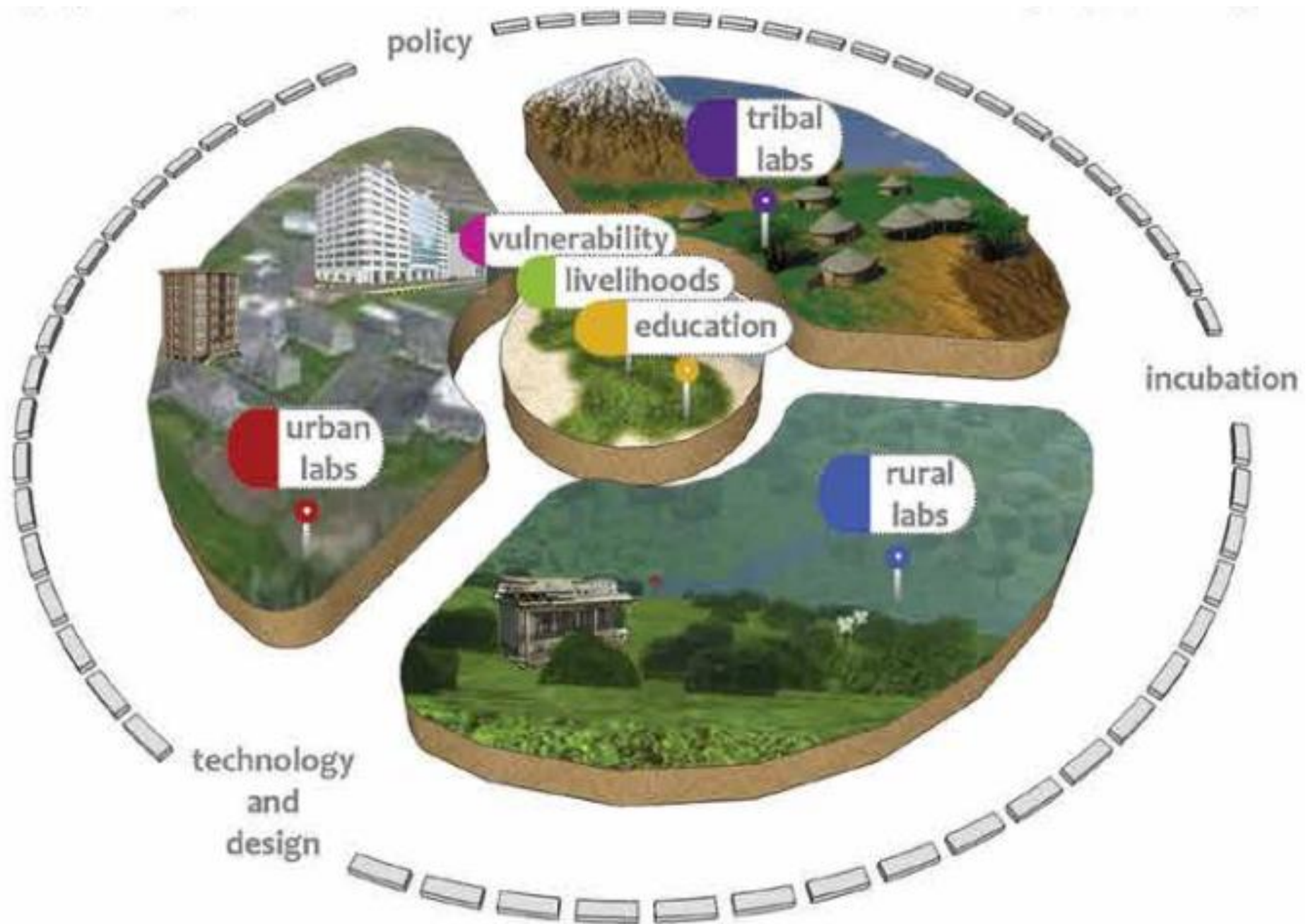
*and sustainable (social, economic, environmental),*

**-addressing heterogeneity of poor segments,**

**-scaling processes through replication**



# SELCO Foundation



# Holistic Solutions



# Addressing heterogeneity of poor segments



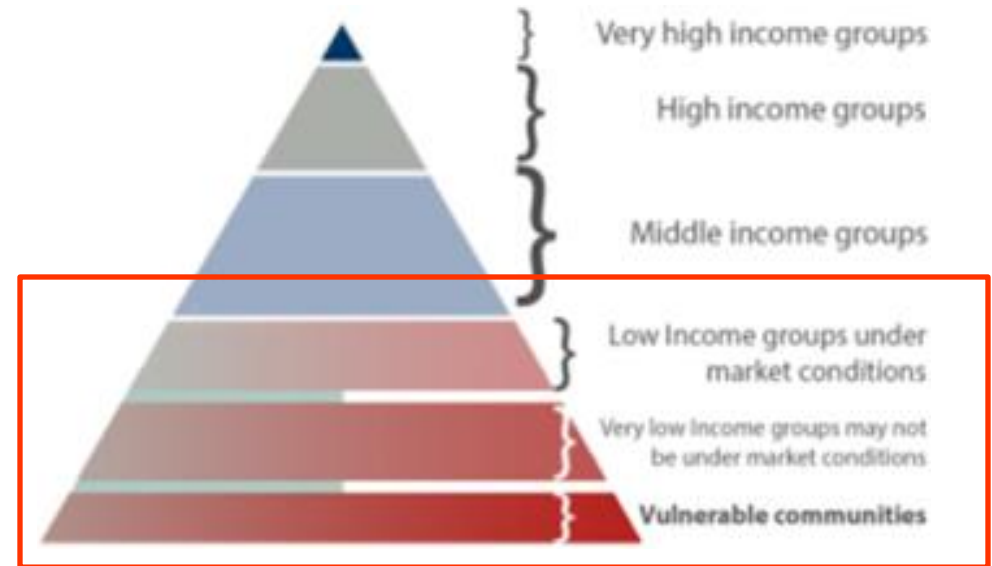
*Examples of low income groups (Established and organized peri urban/ rural villages)*



*Examples of very low income groups (permanent rural/ tribal remote settlements)*



*Examples of vulnerable communities (urban/ peri urban migrant/ nomadic slums, very remote tribal villages)*



Segregation of the underserved communities into **poor, very poor and abject poverty** can be done based on **geography, (urban or rural), culture, type of income generating activities, income patterns (formal or informal), whether migratory or sedentary etc.** Therefore needs and solutions are will be different.

# Scaling through replication



1 ENTREPRENEUR      2 ENTREPRENEURS      1 ENTREPRENEUR      Sewing Cooperative      Production centre      Other livelihoods?





27<sup>th</sup> Aug 2016

Holistic Development



# DEVELOPMENT

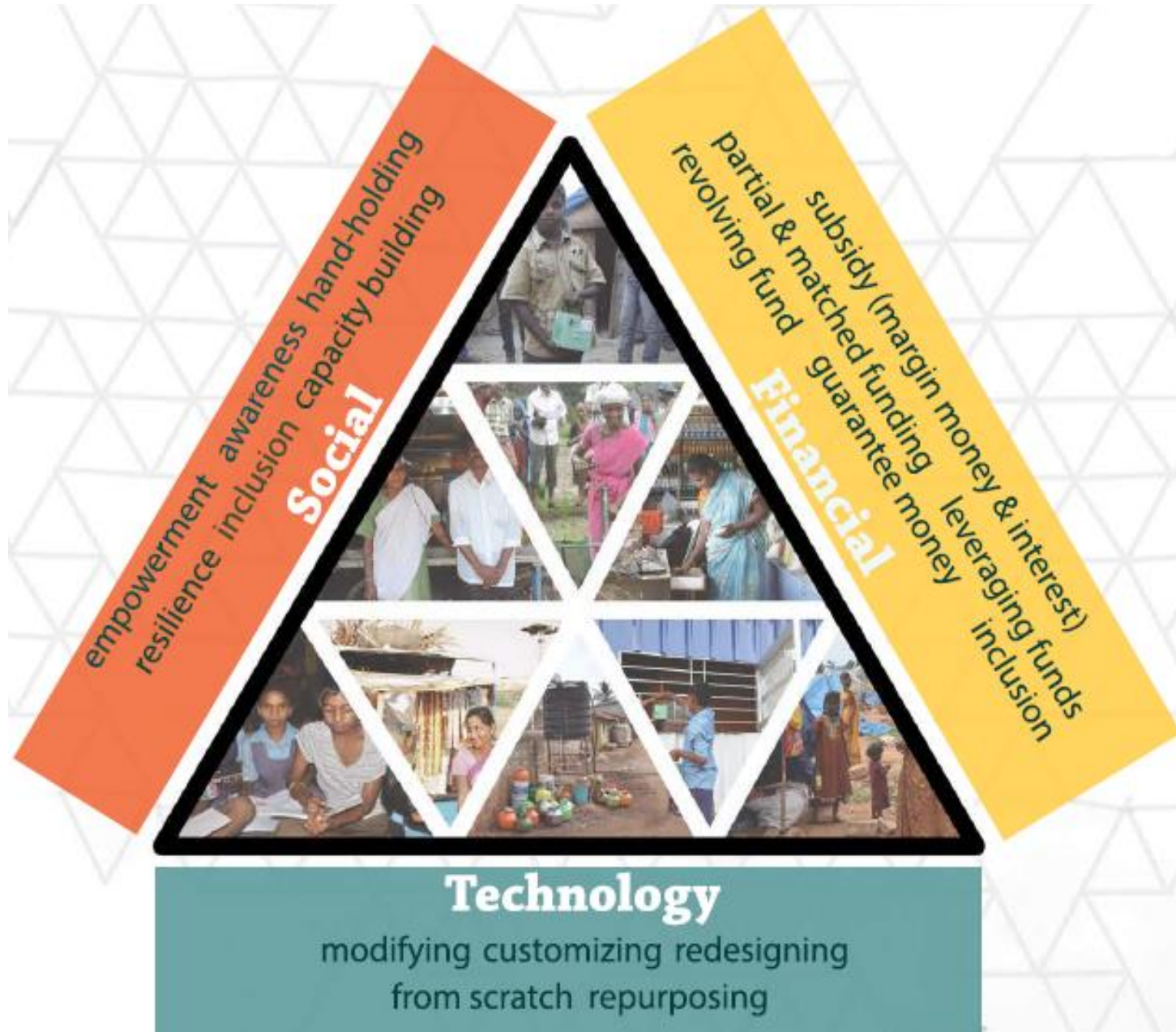


**Vibrant  
Economy**

**Innovation at  
Grassroots**

**Improved  
Human  
Development**

# HOLISTIC DEVELOPMENT



# INTEGRATED ENERGY CENTER



## Core Elements for establishment

- Financial
- Social
- Technological

# QUICK QUESTIONS

The background image shows a rural scene. On the left, there is a building with a thick, thatched roof made of dried palm fronds or similar natural materials. In the foreground and middle ground, there are numerous stacks of large, rounded, reddish-brown terracotta pots or jars. Some are stacked high, while others are arranged in rows. The ground is grassy. In the background, there are green trees and a cloudy sky. The overall scene suggests a traditional pottery-making or storage area in a rural, possibly tropical or subtropical, region.

**What is the critical component of success ?**

**What benefits do you see?**

**What challenges do you see?**

**What more can be innovated in the model ?**

# SHANKAR CASE STUDY

## Financial:

- **Risk guarantee mechanism:** Confidence Building Strategy
- **Flexible Collection Model:** Sustainability
- **Pygmy Mechanism:** Sustainability
- **Margin money subsidy:** Confidence Building Strategy

## Technology:

- **Integrated Energy Center:** Customization, Independence
- **Additional Tools:** A solar powered laptop, mobile charging, soldering iron

## Social:

- **Entrepreneurship**
- **Confidence** : Feedback effect
- **Financial Linkage** : Self Reliance
- **Education and Health** : Spillover effects

# PROCESS FOR SUSTAINABILITY

- Delivery Mechanisms
- Entrepreneurship
- Building trust
- Community Cohesion and commitment
- Intensive Handholding
- Replacement and Servicing
- Awareness and Knowledge Building



# Energy Access and Innovation Challenge



## WHAT is it?

How may we enable energy access to underserved and vulnerable communities in a socially, economically, technologically and environmentally sustainable ?

# Who can participate?

This challenge is open to :

- Students of IIT Kharagpur, to form inter-disciplinary teams.
- The students need to work in teams ranging from 3-5 people.
- Each team **MUST** include at least one student from college/organisation other than IIT



# What to do? (Expected Outcomes)

- Identify a local community whose need becomes the problem statement for the challenge.
- Build a prototype or model of the innovation (preferably a working technology)/Prototype of the service
- Mechanisms on how the end users would be able to afford these systems
- Dissemination model
  - ▣ How would it reach the end users?
  - ▣ What is the ease of access?
  - ▣ What would the service/maintenance process?

# What is in it for you?

- **Experiential learning**  
Use the learning they have received in a practical and innovative platform outside the walls of a class-room.
- **Working across disciplinary boundaries**
- **Social impact**  
innovations that will help emerging economy and have greater return for local issues
- **Pilot potential projects**  
An opportunity to work on the pilot of the potential projects with SELCO incubation.
- **Mentors & Advisors**  
Connect with mentors and advisors who are experts in the field of energy, technology, finance, development sector will guide and propel the ideas being brought by the participants of this competition.

# Timelines

## MONTH 1

- Orientation workshop by SELCO
- Field visit by students
- Ideation & brainstorming
- Knowledge workshop #1 by SELCO

## MONTH 2

- Initial draft proposal by students
- Submission of the draft proposal
- Jury presentation
- Knowledge workshop #2 by SELCO

## MONTH 3

- Final prototyping
- Final presentation to the jury
- Announcement of winners
- Incubation of selected ideas



TRIP TO THE FIELD.....

# Next Steps...

1. Make a visit to any community space at the least 5 kms away from IIT - K
2. Observe, Interact, Listen, Read between the lines..
3. Identify NEED
4. Ideate, critique, argue .....but conclude on the problem statement
5. Again ideate, discuss and develop a concrete potential solution
6. Go back to the field and test
7. Create Initial Draft proposal

# Don't's and Do's

- Empathize don't pity
- Don't alienate them with your clothing, body language or communication
- Don't ask personal questions without taking cognizance of their state of mind
- Do not look at them as a "beneficiary"
- Don't think you are doing a favor to them
- State the purpose of your visit openly
- Put yourself in their shoes at every stage
- Ask questions which are general and related to the challenge
- Look at them as a partner in solution building
- Plan when you go-  
Non-work hours

# For queries...

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