

*LCS-Rnet 9th Annual Meeting / 12-13. September 2017 / Warwick*

*Session 3.1 “Progress towards the energy access Sustainable Development Goal”*

# What can RE contribute to energy access ....and beyond?



**What is the role of practitioners? What are key success factors?**

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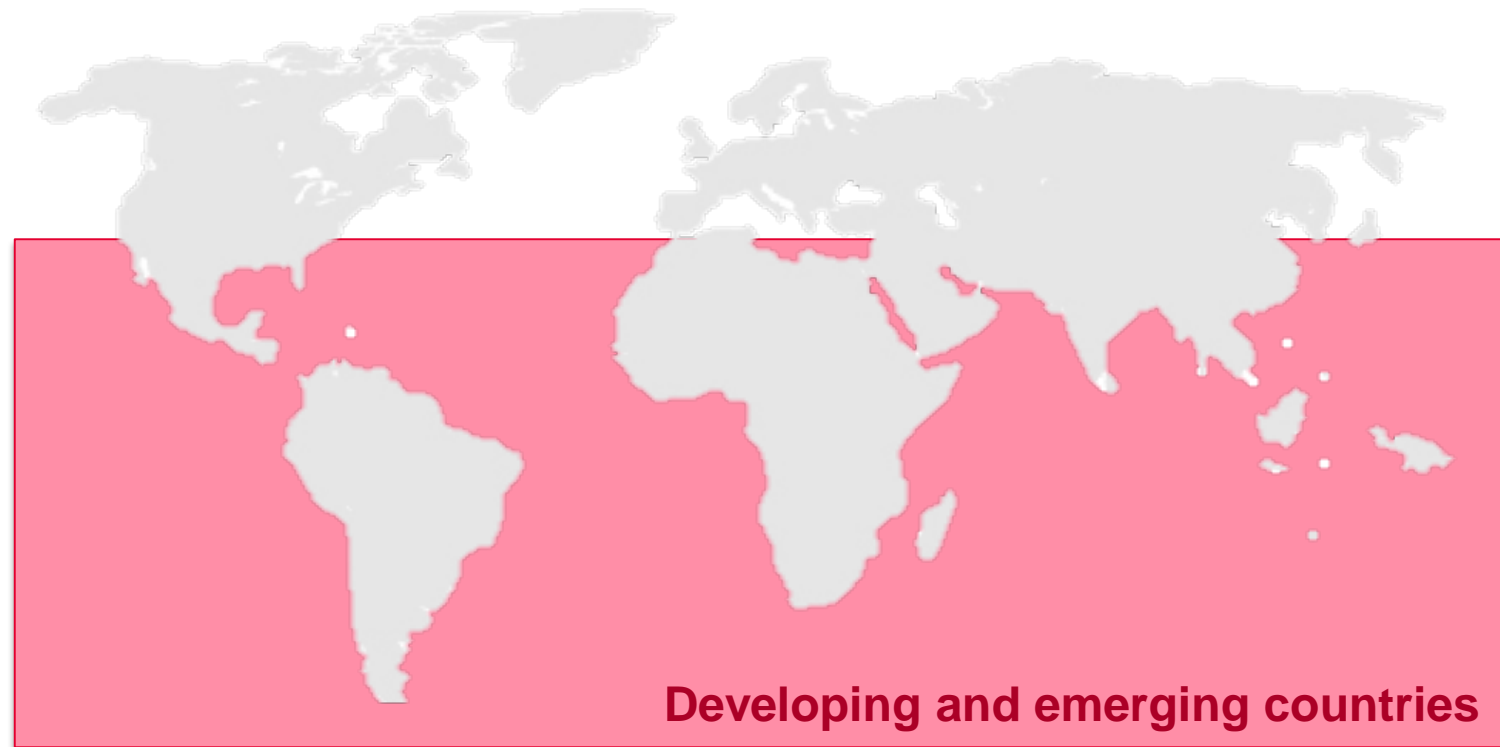
*Wuppertal Institute for Climate, Environment and Energy*

*- Research Group Future Energy and Mobility Structures*

# Outline

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- Background
- Post-Evaluation
- Role of practitioners & Practitioner networks
- Experiences from the Ground



**2.7 billion**

people have no access to clean  
cooking fuels

(38% of global population)

**1.2 billion**

people lack access to  
electricity

(16% of global population)

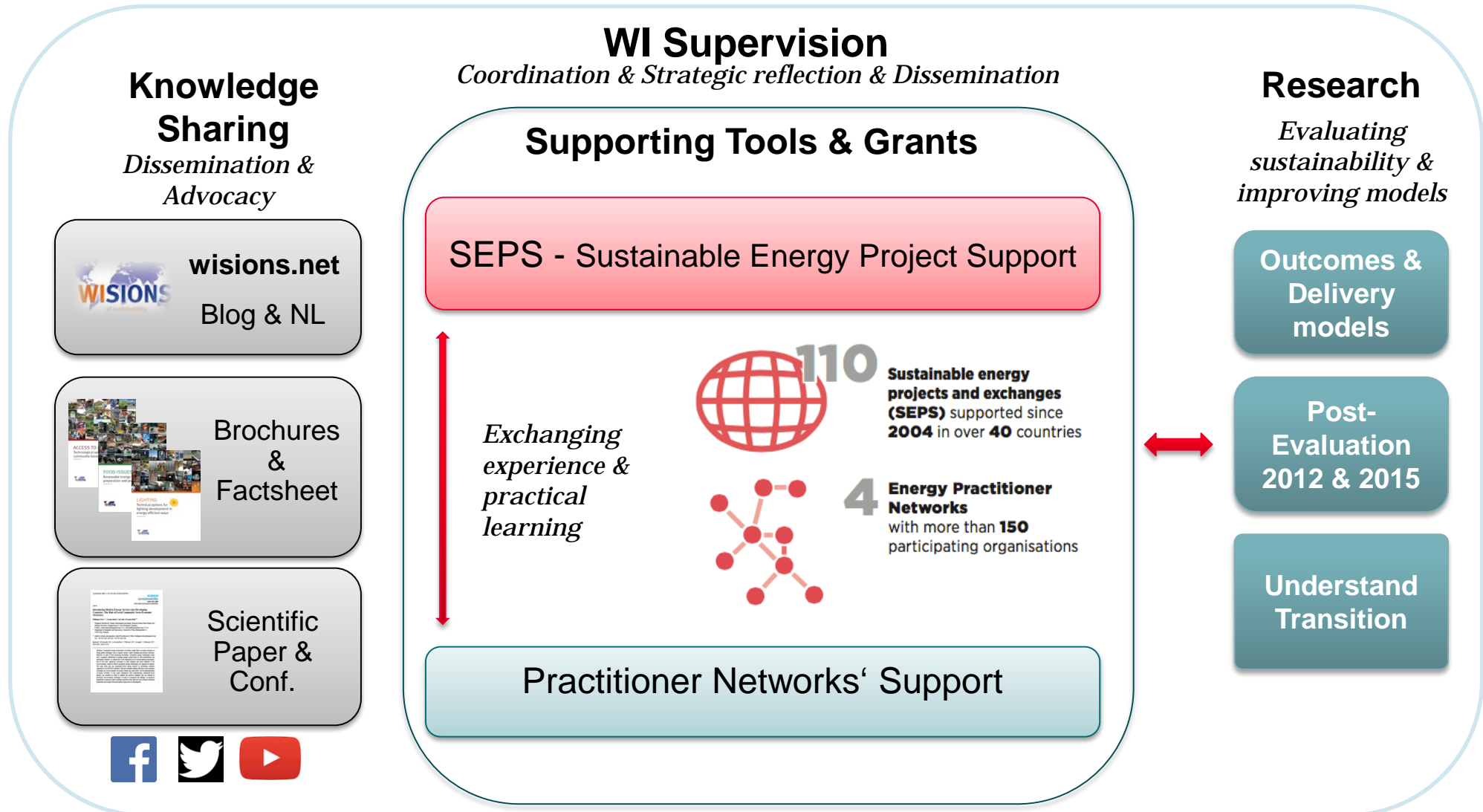
**SDG7**

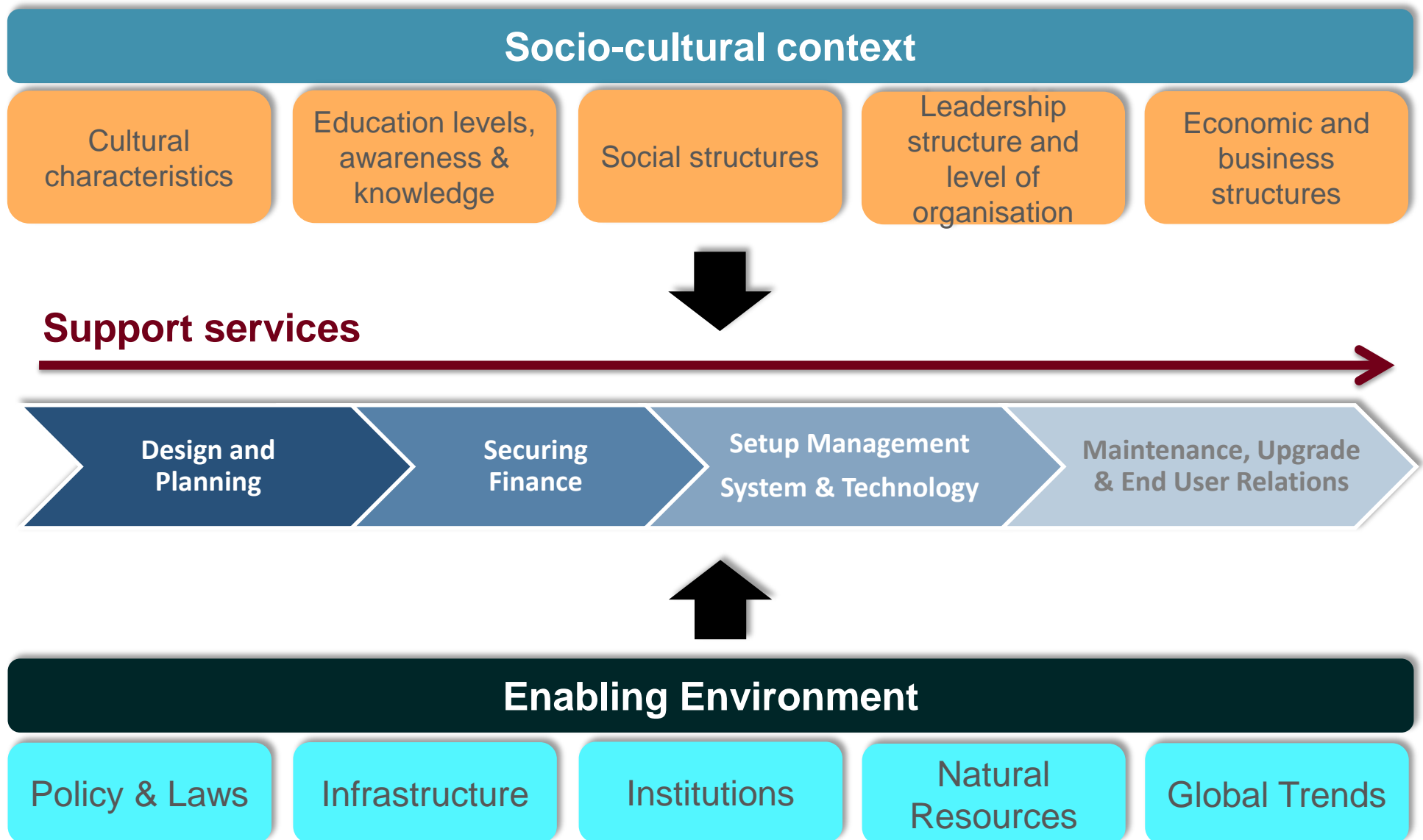
Ensure access to affordable,  
reliable, sustainable and  
modern energy for all  
(SE4ALL 2030)

# What is WISIONS initiative about?

[www.wisions.net](http://www.wisions.net)

- **WISIONS started in 2004** promoting sustainable energy solutions in developing regions (with support from “Stiftung ProEvolution”)
- Main objective of WISIONS is to **make clean energy a default solution for basic energy needs in developing regions, by helping local partners** to identify successes and bring them to scale through regional networks, marketing and demonstration.
- The initiative’s approach is **need-oriented** and to **empower local practitioners**



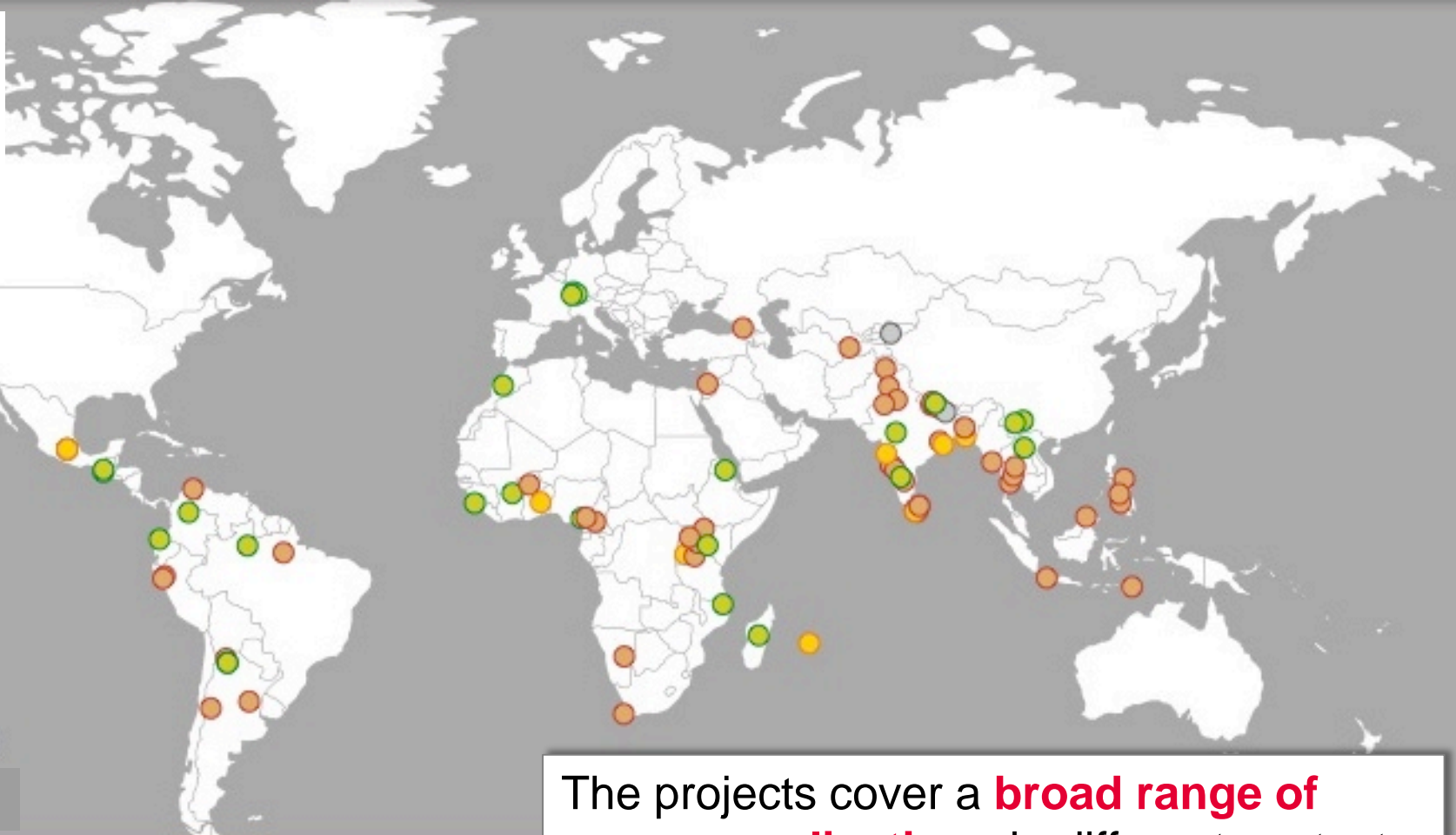


(Based Wilson, Godfrey-Wood & Garside 2012, p9 Bellanca & Garside 2013, p22)

Since 2004 over 110 projects and exchanges have been supported by the SEPS scheme



SEPS ENERGY  
PROJECTS MAP

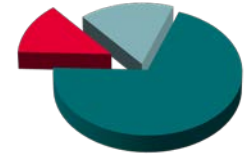


The projects cover a **broad range of energy applications** in different contexts and are located **in over 40 countries**.

# What can RE contribute to SDG7?

Three snapshots from WISIONS initiative work

- **Evidence on mid-term sustainability of projects**
  - Post-evaluation results from 2015
  - Beyond access – How to trigger productive use?
- **S-S Energy Practitioner Networks**
  - Experiences gained in 4 networks focused on NGOs and practitioners in Global South
- **Experiences from the ground**
  - Ecuador case
  - Community-based model in Malaysia

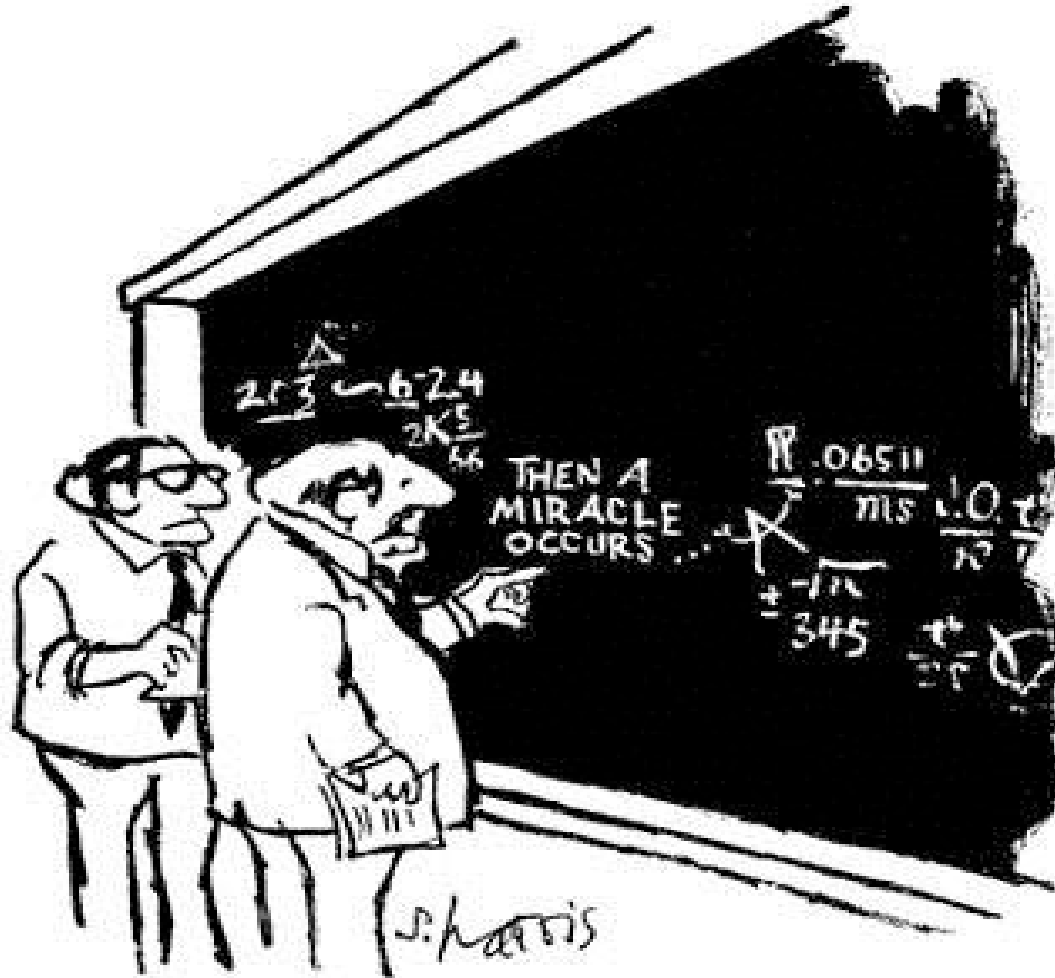




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## Sustainable Development (SDGs)

***„ I think you should be more explicit here in step two“***

(Source: Sydney Harris 1977)

# SEPS Evaluation sample

Evaluation was designed as a semi-structured in-depth survey

Evaluation sample **52**  
**small-scale energy**  
**projects** (2015)

Very good overall  
response rate resulting in  
an **evaluation sample of**  
**30 projects**

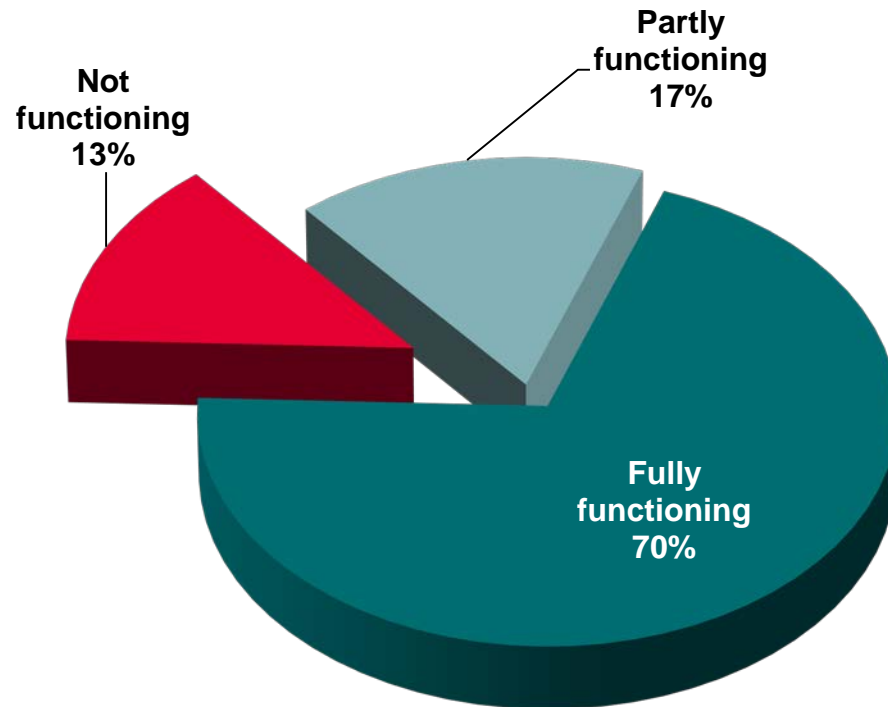
**Cross-sectional evaluation**  
**sample** in terms of **renewable**  
**technologies**, human **needs** and  
**geographical regions**

# Impact Evaluation - results

Evidence on mid-term sustainability

## What ?

### Project Status 2015



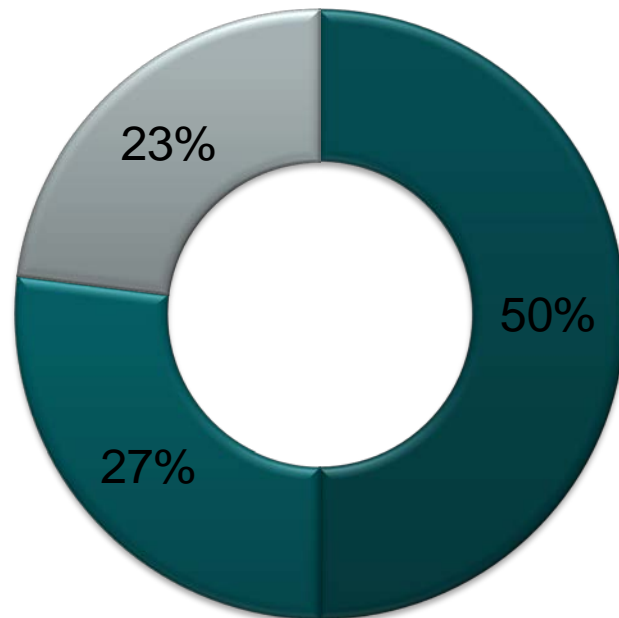
## Why (not)?

- **Flexibility** to adapt to different external and internal challenges
  - **Continuing involvement** of implementing organisation
  - **Trust and reliability**
  - **Knowledge management** and conservation
  - Using existing **community structures**
  - **Sense of ownership**
- 
- ***External influences** like political, institutional and environmental settings*
  - ***Unsuitability** of technology / feedstock*
  - ***Low motivation** of potential users/producers*

Increase economic activities, income and employment

## **Productive use activities ....linked to other SDGs**

- New productive activities
- Improvement of existing productive use
- Energy for consumption



## **People trained & Income increase**

- Additional people trained or employed in 62% of projects
- Income increase in 67% of projects

...2-5 years after project finalisation

# Impact Evaluation...beyond energy access

Contribution to economic development – What is important?

- **Access to energy does not automatically trigger productive use activities** these need to be integrated in the project
- Beneficiaries need training and **knowledge about business opportunities**
- **Market value chain analysis** at the beginning of the project necessary
- Physical and social **access to markets**
- **Entrepreneurial spirit** – Fostering entrepreneurial mindset
- **Financing options** do not only have to be available but **need to be accessible for small-scale entrepreneurs**

→ **Advantage of energy for productive use is not to be left to coincidence!**

**...contribution analysis results to be published soon**

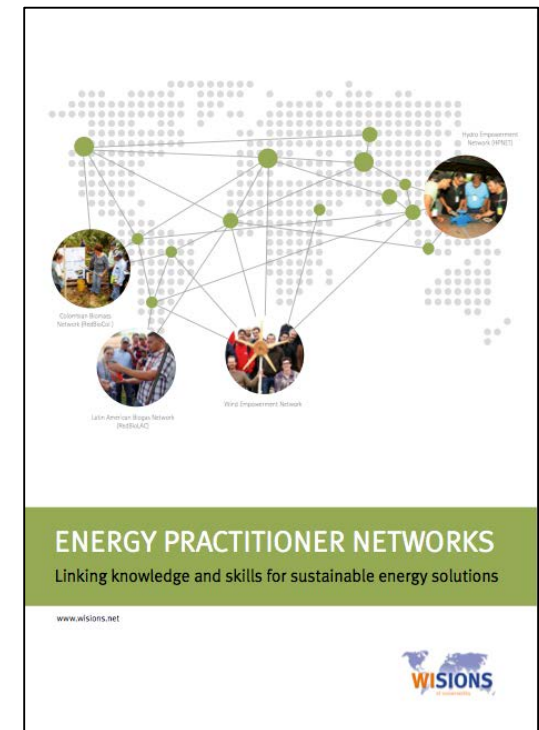
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- **Role of practitioners & Practitioner networks**
- Experiences from the Ground

...the people behind every successful energy project

- **Practitioners & local NGOs are crucial** for transition process sustainable energy path
- **...more than simply providers of technology;**
  - ...good organisers, financial managers, problem solvers, trainers and mediators as well as good technical installers
  - ...often with direct roots to the communities - combine technical know-how and local “indigenous” knowledge

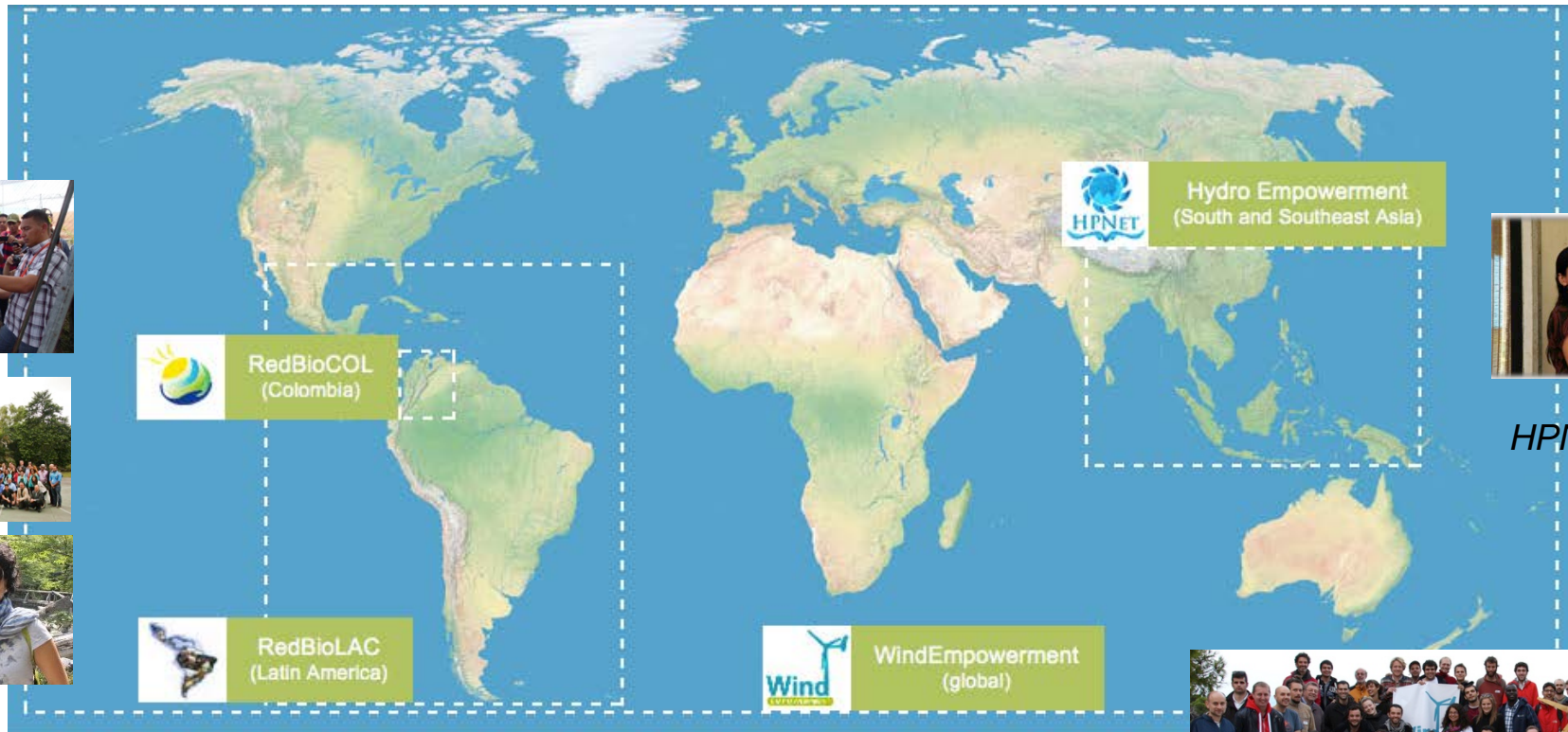




# Practitioner Networks

...acknowledging that projects are not enough

...knowledge exchange within the South is crucial



*HPNetwork*



*WindEmpowerment*

*RedBioLAC &  
RedBioCol*

- Emphasise **joint value creation**
- **Strengthen the capacity** of all members and
- Provide **more options to transform knowledge into policy and practice**



### Exchange activity Concrete Turbine seminar/Sri Lanka

#### → Common issues identified, e.g.:

- # Load controller
- # Grid-integration
- # Financing & Tariffs
- # Standards
- # Acceptance
- # Need for advocacy
- # Productive use
- # → Importance of community organisers



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*“MHP developers’ capacities are limited to that of their **Community Organisers** because **only local change agents can ensure the project is successfully implemented** and sustained with strong community initiative.*

*Even with good technology and ample funding, without strong local change agents micro hydro projects are short-lived.”*

*Hydro Empowerment Network*

## Community-based MHP in Malaysia

### “Integrating Watershed Development in the Ancestral Forests of Ulu Papar” – SEPS Project

#### Location:

3 Villages of Pongobonon,  
Lokogungan and Kalangaan,  
Borneo, Malaysia

#### Technology:

Mini-grid, Micro-hydro

#### Partners involved:

Green Empowerment (GE)  
([www.greenempowerment.org](http://www.greenempowerment.org))  
Tobpinai Ningkokoton Koburuon  
Kampung (Tonibung)

#### Project duration:

06/14 – 12/16  
(original plan until 08/15)

#### Finance:

#### Aim:

- Ensure long-term sustainability of **electricity and water supply via MHP systems**, skill development & protect watershed

#### Activities

- Construction of micro-hydropower and water distribution systems for the three villages, using loc. manufactured turbines
- Planning and implementation of **watershed protection measures through local committees**
- GE/Tonibung technical support and project management roles; one project manager employed by Tonibung remained on-site throughout all phases of the project.
- **Six trainees from villages** in Ulu Papar formed the backbone





...same region, same conditions, same culture  
...but different...

- **Pongobonon:**
  - In theory best conditions due to new road
  - → but led to low motivation for workforce (excavator)
  - Technical challenges
- **Kalangaan:**
  - Inaccessible by vehicle, but good technical conditions
  - extremely motivated community – even helped out in other villages
- **Longkogungan:**
  - Remote location posed significant logistical challenges;
  - Significant challenges due resistance and headman











# CRECER - Improving Cacao Production and Processing & Meeting Cooking Fuel Demand in Ecuador



## Location:

3 communities of Rioverde canton

## Technology:

Geomembrane biogas digesters

(10 à 6m<sup>3</sup>)

Passive solar cacao dryers (8)

## Partners involved:

Green Empowerment (GE)

([www.greenempowerment.org](http://www.greenempowerment.org)) +

CorpoEsmeraldas and FEDETA

## Project duration:

06/2014 - 01/2016

2017 (replication phase)

## Finance:



## Situation:

- Poorest region in Ecuador (74% poverty) – people rely on cacao & **lack access to basic services**
- Many market **cacao beans without post-processing**, losing up to 50% of potential income

## Aim:

- Adoption of biodigesters and solar dryers to **satisfy cooking fuel demands** and improve the yield, quality, and price of cacao crops, paired with **sustainable cacao cultivation training, cultivation & environmental management**

## Activities

- **Needs assessment** in 3 communities via participatory process
- O&M **training** courses & course on sustainable cacao cultivation
- **Workshop** series on gender equity, community involve. & env.
- **Build capacity among organisations** (e.g. cooperatives & farmers' associations)

## Direct Output & Outcome

- 30% reduction in the consumption of LPG for cooking
- Improvements of cacao drying (10% reduction in weight)
- Chemical fertiliser savings (potential for sales of organic fertilisers)
- 300 people benefitted & 100 participated in trainings
- Manual on agriculture good practice & Market assessment

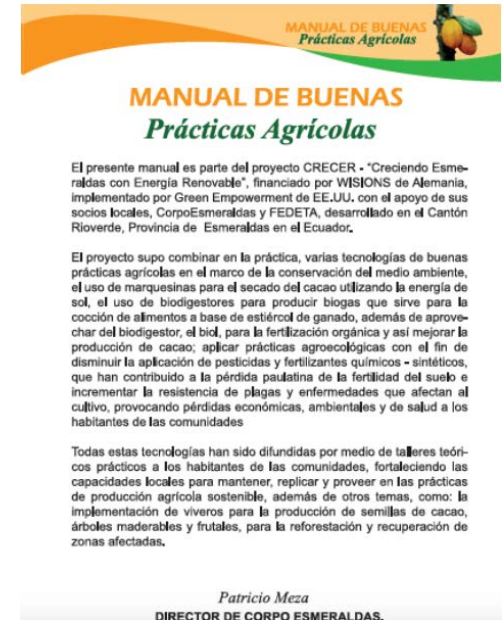
## Replication / Follow-up phase

- Further dissemination & initiate national meetings
- Direct replication – People buy and build biodigesters

## Delivery model

- Local ownership, oversight by a locally-elected committee, and mixed communal/entrepreneurial financial management

→ *holistic approach crucial for success*





## → Award 2016

- Ecuadorian national winner of the Energy Globe award

## → Kick-start of RedBioEC - Network of practitioners

- Meetings in January 2018



## ...coming back

What can RE contribute to SDG...and beyond?

What are the roles of practitioners? Key success factors?

- **RE has high potential to contribute to SDG7, if...**
  - ...sound delivery models are applied
  - ... local practitioners (*non-state actors*) & community structures are involved
  - ...financing models could be interlinked with successful community-management models
- **More interconnection and exchange needed**
  - Between several stakeholders...not leaving local practitioners out
- **...still several challenges ahead**
  - E.g. Finance....capacity....scale

**Thank you very much for your attention !**



For further information please visit  
our websites:

[www.wisions.net](http://www.wisions.net)

[www.wupperinst.org](http://www.wupperinst.org)



WISIONS on Facebook



- (1) How to improve energy access in developing countries and the role of international stakeholders including developing countries in line with the context of SDGs, and
- (2) How to shift (or transit) energy systems in developed countries more affordable, reliable, and sustainable one.

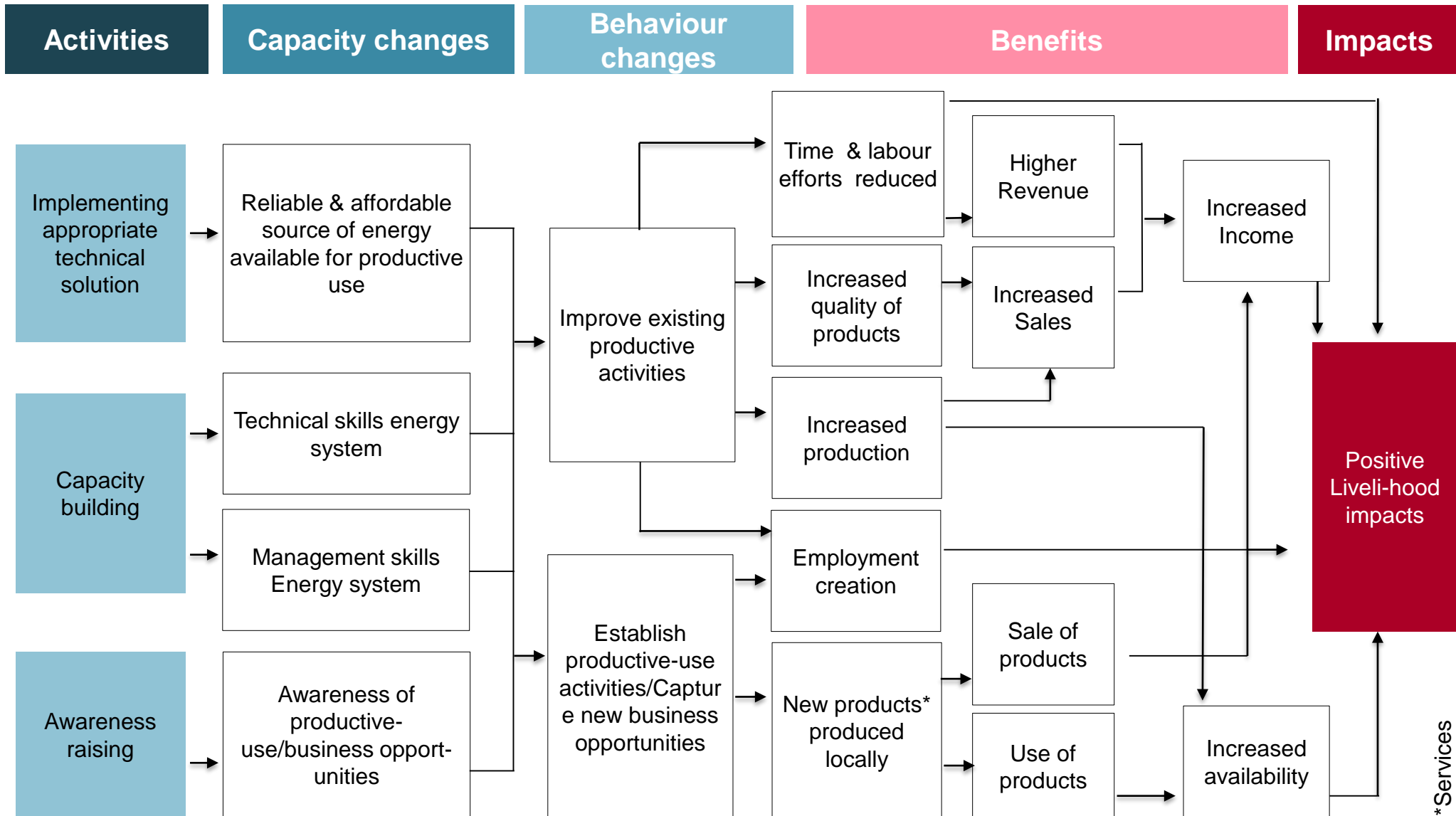
### Session Instruction

- How to improve energy access in developing countries in line with SDGs and the Paris Agreement?
- What is the role of international stakeholders including governments, NGOs and businesses to accelerate improvement of energy access in developing counties?
- How to shift (or transit) energy systems in developed countries more affordable, reliable, and sustainable one?
- How is current status and progress of these activities, and what types of support could be expected by the science and research community?
- How to make spillover effects to rest of Goals in SDGs and other important international agreements/targets such as the Paris Agreements and Sendai Framework for Disaster Risk Reduction.

## Backup

# Impact Evaluation

Example detailed Theory of change “Productive use of energy”





# Evaluation sample

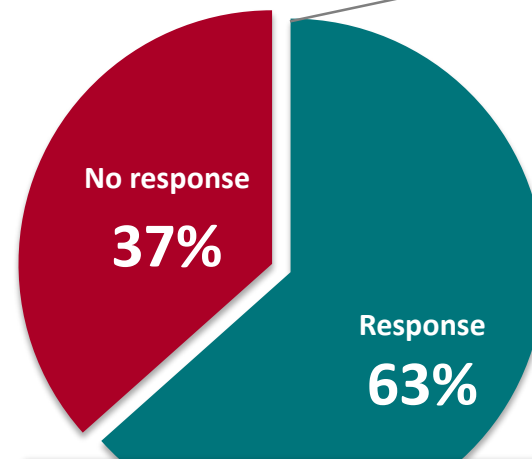
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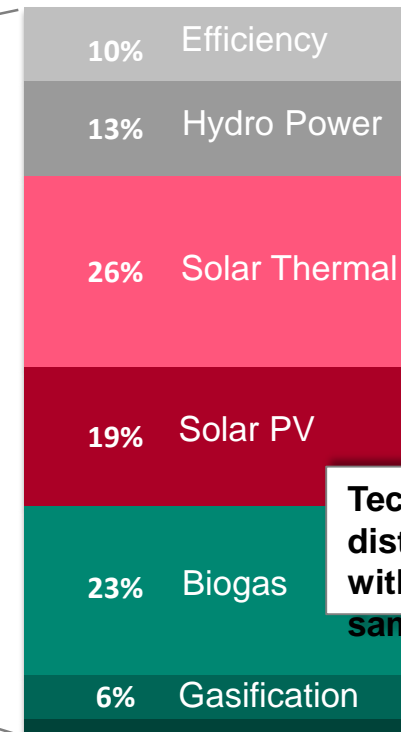
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**Cross-sectional evaluation  
sample** in terms of **renewable  
technologies**, human **needs** and  
**geographical regions**

**Cluster** of  
potential  
**evaluation  
candidates**  
consisted of  
projects from the  
**VISIONS**  
**project cycles**  
in the period  
between **2004**  
**and 2010**



**Evaluation Response rate**



**Technology  
distribution  
within evaluation  
sample**