ETH zürich

NADEL
Center for Development and Cooperation

Impact of Solar Vocational Training

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MAS Policy Evaluation and Applied Statistics
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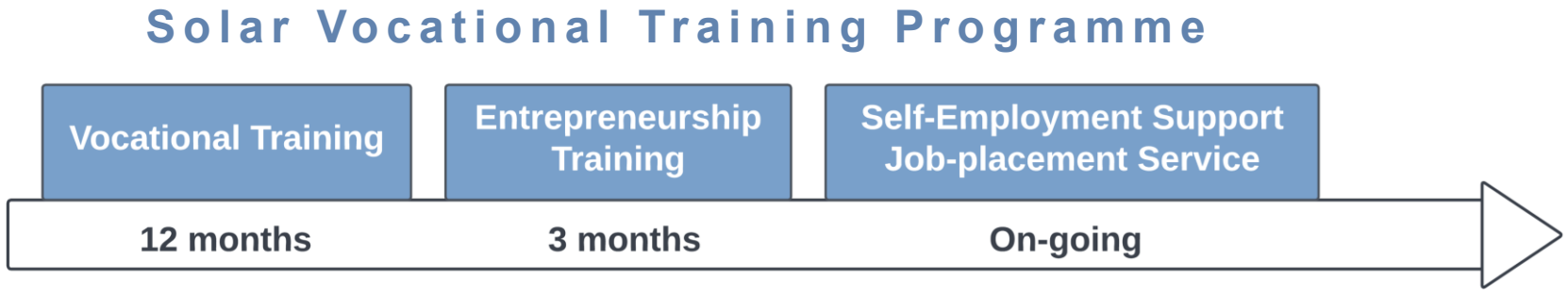
SOLAFRICA

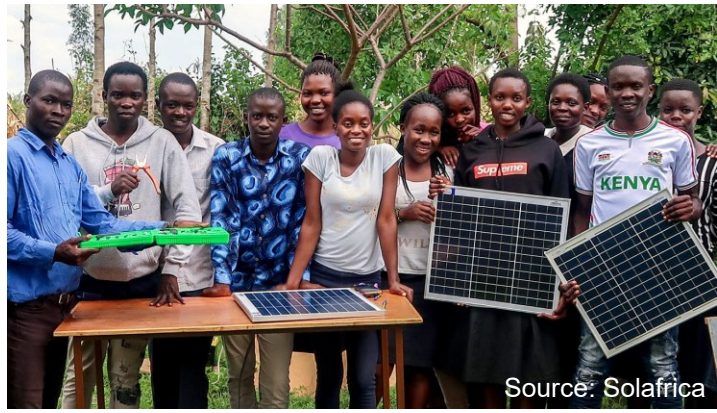
Brief description of project

Solafrica aims to offer solar vocational training to 540 rural youths in the Amhara region of Ethiopia within a period of 5 years

Goals:

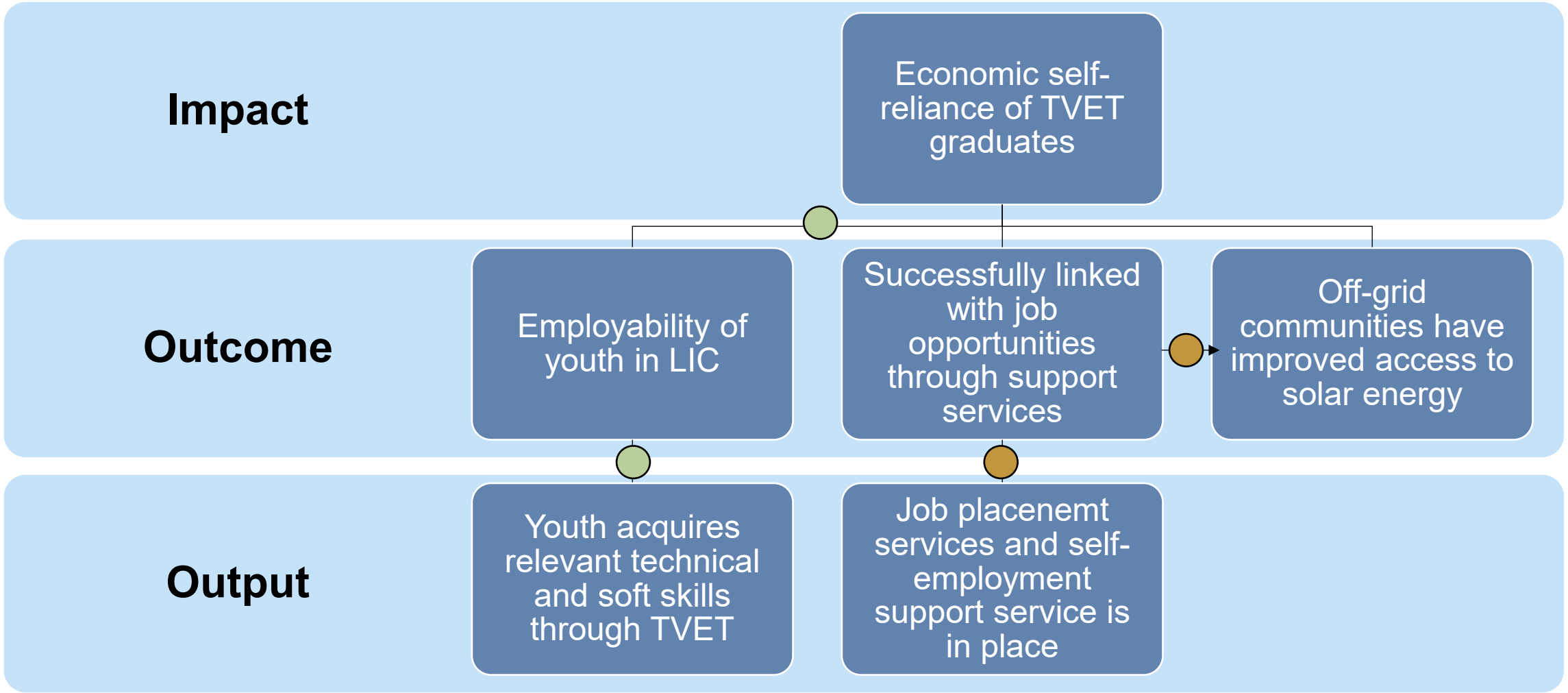
- Improve the employability and economic self-reliance of vulnerable youth
- Increase access to solar energy in rural off-grid households





Source: Solafrica

Previous literature has shown:



Policy impact evaluation questions

Overall policy question

What is the impact of the solar TVET on the livelihood of disadvantaged youths and access to solar energy in rural off-grid households?

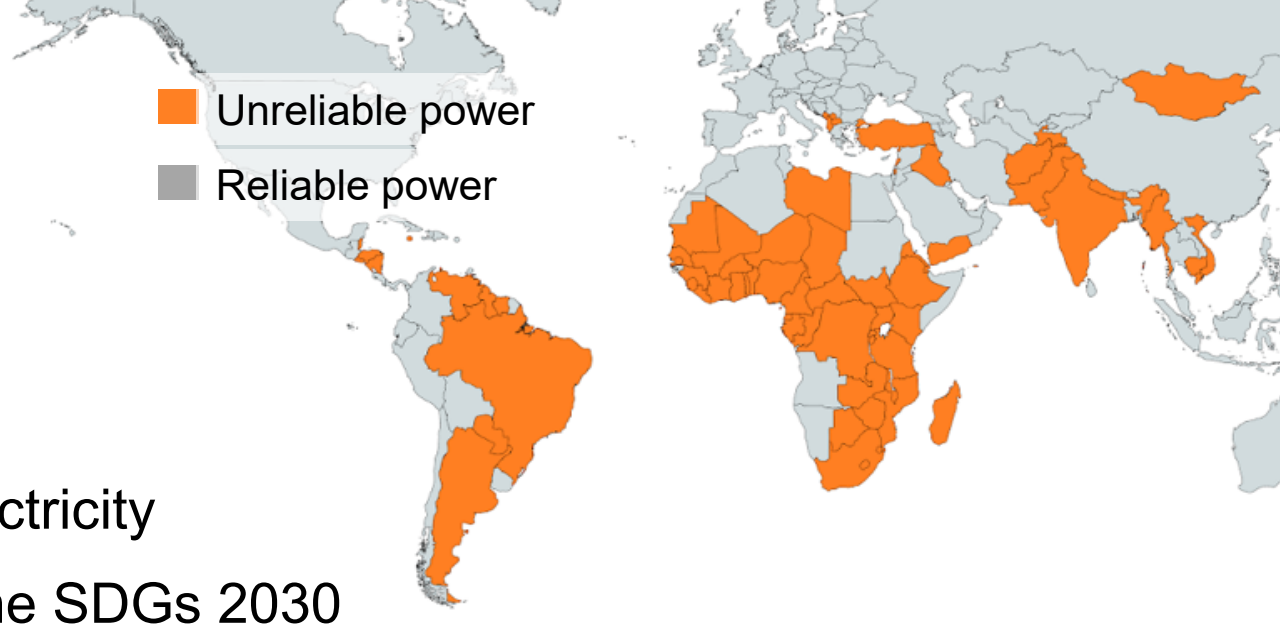
Qualitative design

How do disadvantaged youths gain improved economic self-reliance through participating in the solar TVET programme?

Quantitative design

What is the effect of the solar TVET programme on the solar energy technology uptake in rural off-grid households?

Relevance of the impact study

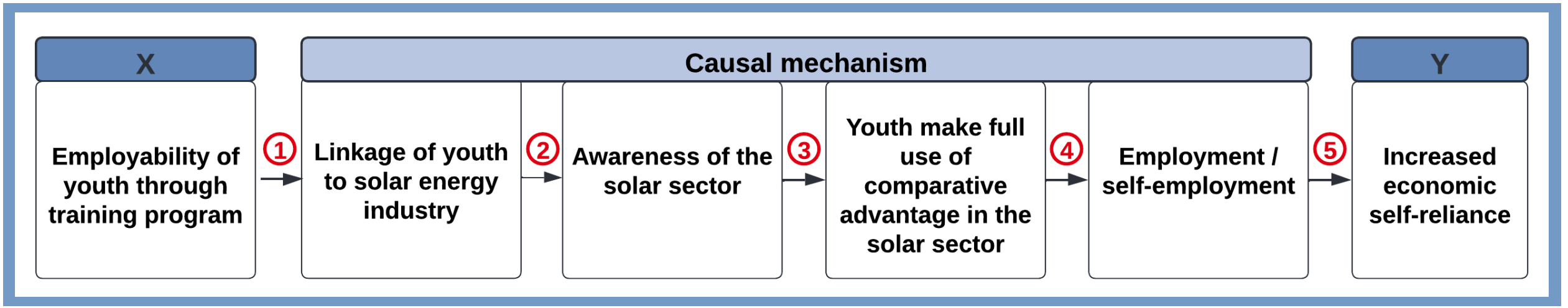


- 3.5 billion people lack access to reliable electricity
- Renewable energy is central to achieving the SDGs 2030
- Household use of traditional fuels -> Health risks & environmental degradation
- Many LIC are located in the tropics with freely available solar energy resources
- The price of solar PV modules declined by 91% over the past 20 years
- In Ethiopia youth unemployment (15-29 years) has reached 28%
- TVET institutions can be major means of technology adaptation and transfer that enhances national growth

Research design - Qualitative method

Main Steps in Process Tracing

- **A** Establish causal mechanism
- **B** Gather evidence for each link
- **C** Test alternative explanation
- **D** Assess evidences (formal tests)
- **E** Draw conclusions

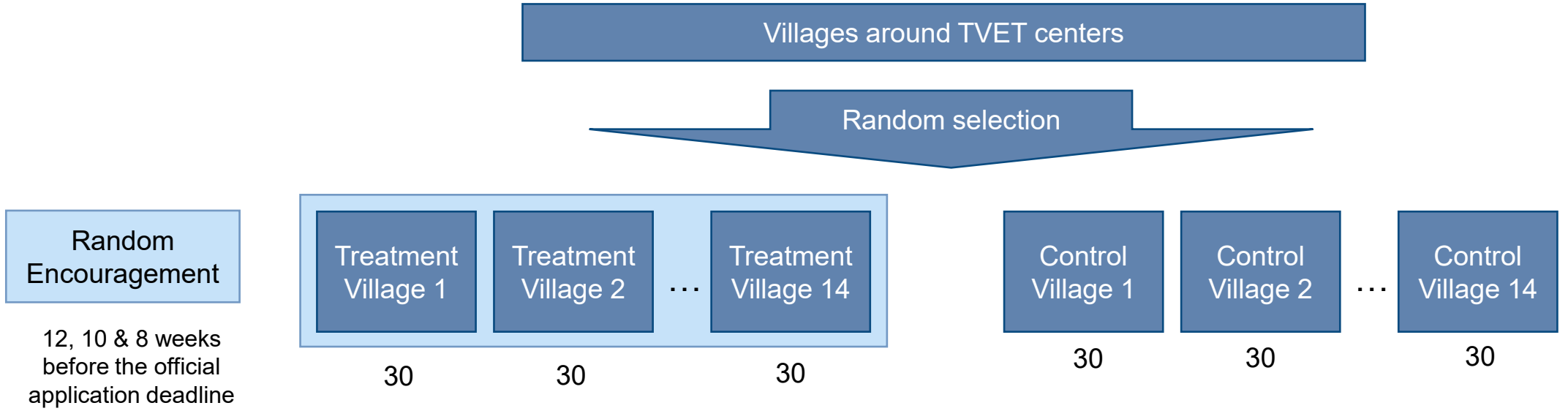


Research Design – Quantitative Method

Methodology: Randomized Control Trial (RCT) with Encouragement

Treatment and Control Group: 14 villages with 30 households each

Survey: 2 years after graduation



Indicators of Impact / Outcome Variables

Post-treatment survey

- Installed large and small photovoltaic systems on or around the house (yes/no)

Data collection

- Random visual inspection in treatment and control village
- Interview households
  - Who installed it?
  - Is it functioning?
  - What do you use it for?

Challenges implementing the impact evaluation

Methodological

- Spill-over effects
- Does encouragement work?
- Timing for data collection

Practical

- Reaction on encouragement (ethical)
- Demand for solar energy?
- Who is the youth?
- Brain-drain?

Appendix: Theory of change