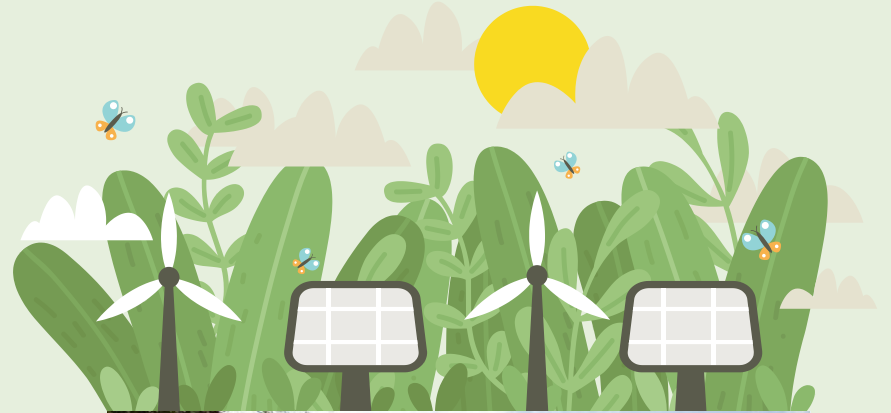


Solar Energy in Sub Saharan Africa

By Carla Ladanyi & Franka Fink
i6252896 & i6254831



Sub Saharan Africa (SSA)



**620
million**

**In Africa lack
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471 million

**In rural areas
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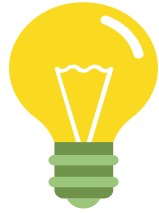


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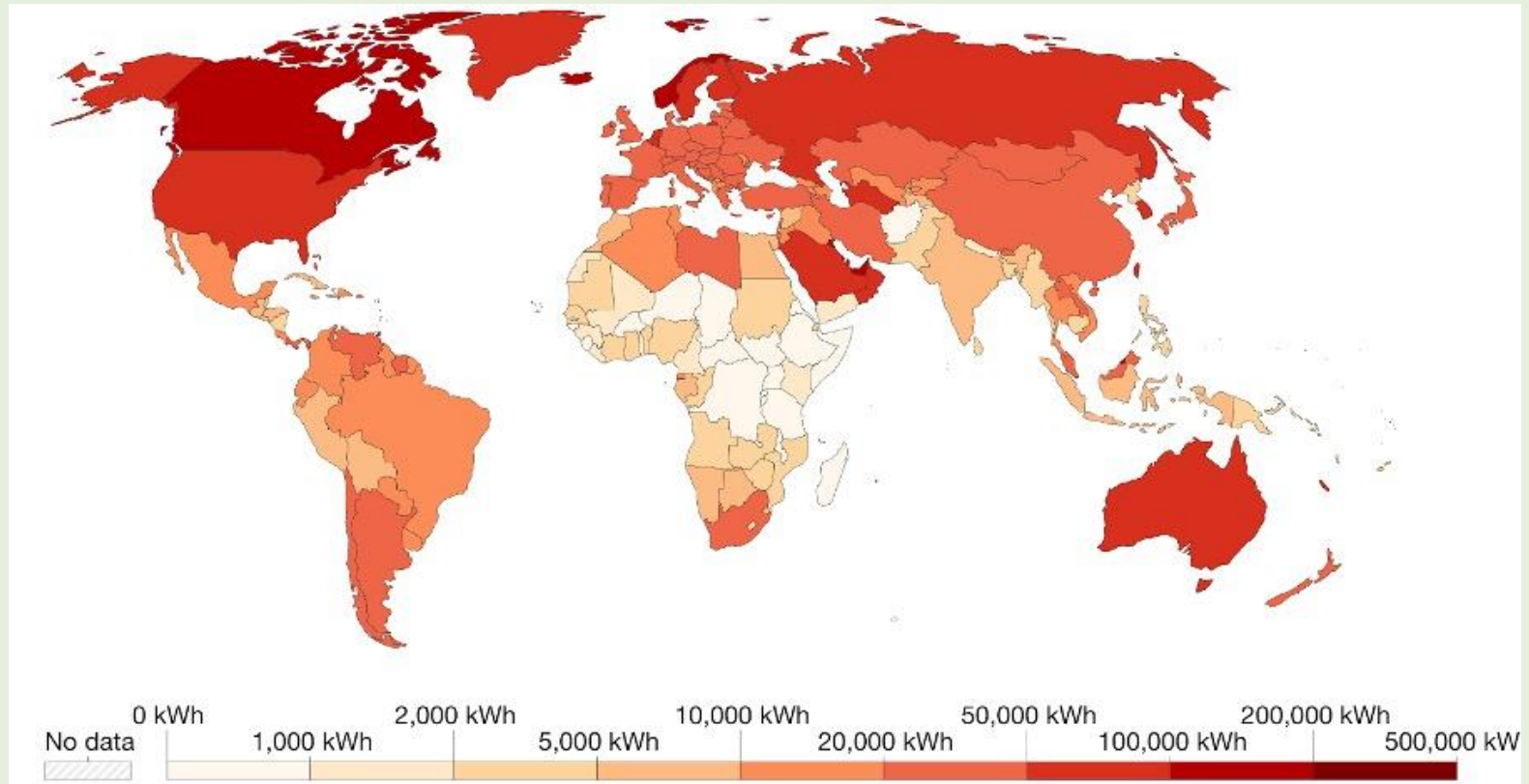


0.6%

**Solar energy
in SSA**



Energy use per Person



Situation in SSA



- Expensive to import fossil fuels
- Exposed to fossil fuel price swings
- Twice as much as people from other parts of the world

Increase in Carbon emissions Climate Change

- Despite having 15% of the world's population, Sub-Saharan Africa contributes only 5% of global greenhouse gas emissions
- 2-4% annual loss in GDP due to shortages
- Population growth = electricity demand is expected to grow by 3%

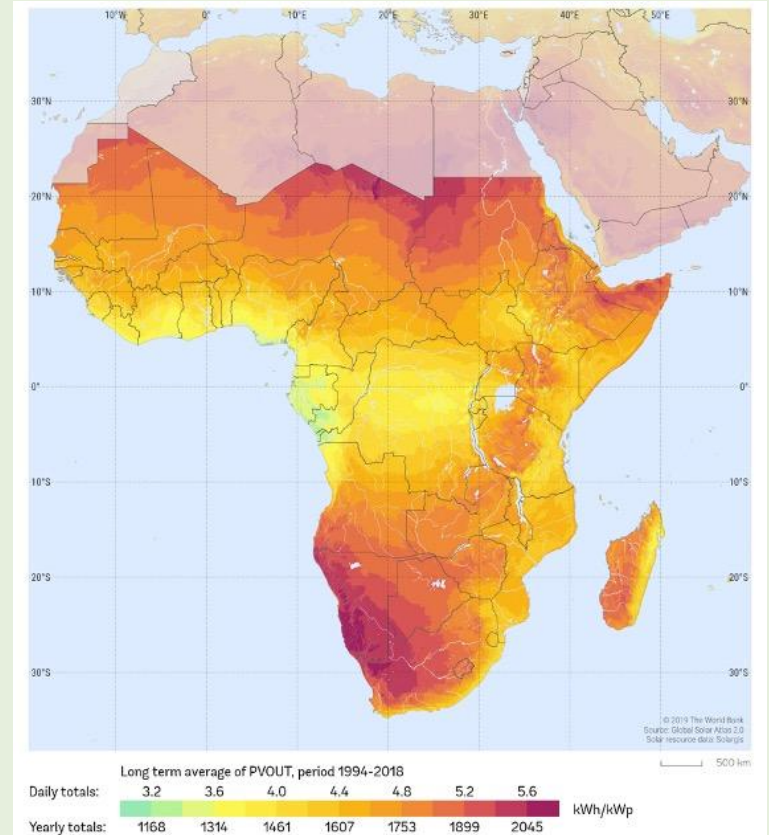
Solar Power in SSA

- **High levels of solar radiation**
Greater than the average worldwide
- **Dezentralised Photovoltaic power - rural areas**
 - Does not require connection to national grid
- **Developing solar energy can help economic growth and job creation**

Potential to contribute to the achievement of SDGs:

- **SDG 7 everyone can access modern, affordable, reliable, and sustainable energy**
- **SDG 13 Climate Change Mitigation**

Photovoltaic Power Potential SSA, 2019



(UN, 2015; Moner Girona et al., 2021; Tomala et al., 2021)

Research Question



How can the **challenges** that **inhibit** the **implementation of Solar Energy** in **Sub Saharan Africa** **be overcome?**



Assessment Methodology



Data classification

To categorise and
summarise the
results of the
literature review

-

categorised
challenges into 4
domains
(social, political,
technical and
financial)

Assessment Methodology

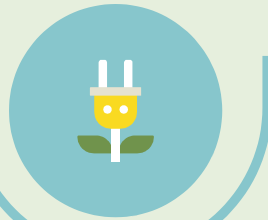


Data classification

To categorise and summarise the results of the literature review

- categorised challenges into 4 domains (social, political, technical and financial)

Process tracing:



- Identify causal relationships
- used in qualitative research
- used to propose an intervention that could solve the challenges in the long run
 - **Education** intervention to overcome the challenges
- evaluates the effectiveness of solutions by tracing the process of applying solutions to identified difficulties and reviewing progress in implementation

Limitations:

- Lack of data
- Difficult to generalise the findings - each country is unique

Model of Structural Challenges

STRUCTURAL CHALLENGES

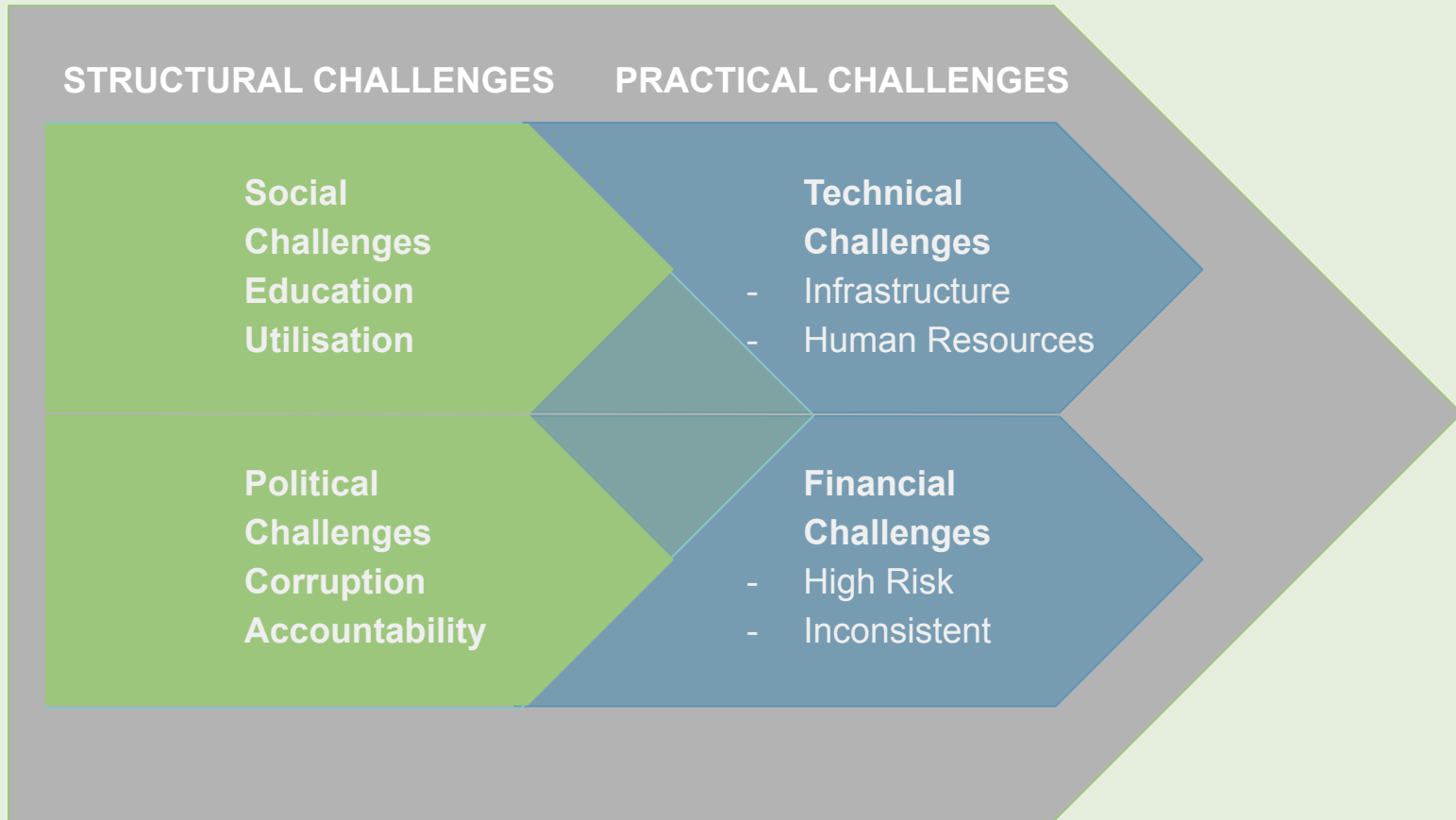
Social Challenges

- Education
- Utilisation

Political Challenges

- Corruption
- Accountability

Model of Practical Challenges



Disclaimer about the model!

- **Oversimplification**
- **Some of the relationships have not been tested for statistical significance**
- **Cannot be directly translated to the development of particular countries**

Education as Intervention:

Goal:

To achieve self-sufficiency and an efficient installation of decentralised Solar energy system in rural areas

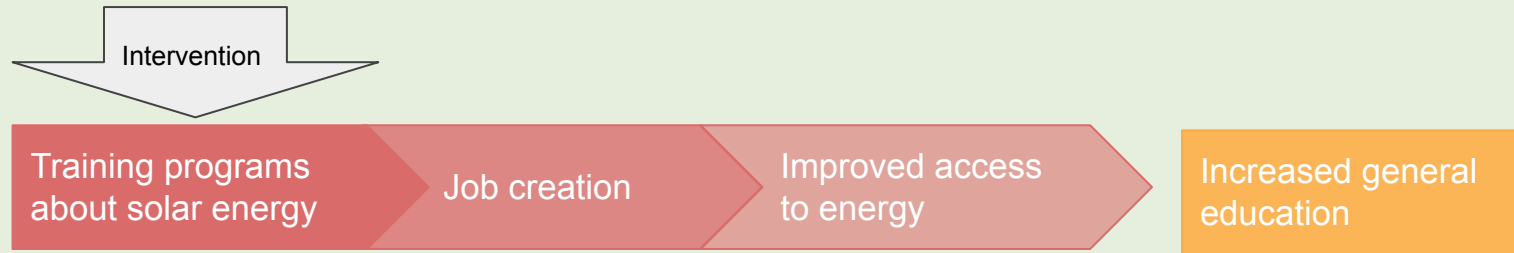
Type of intervention:
Bottom-Up approach



Details about the Intervention

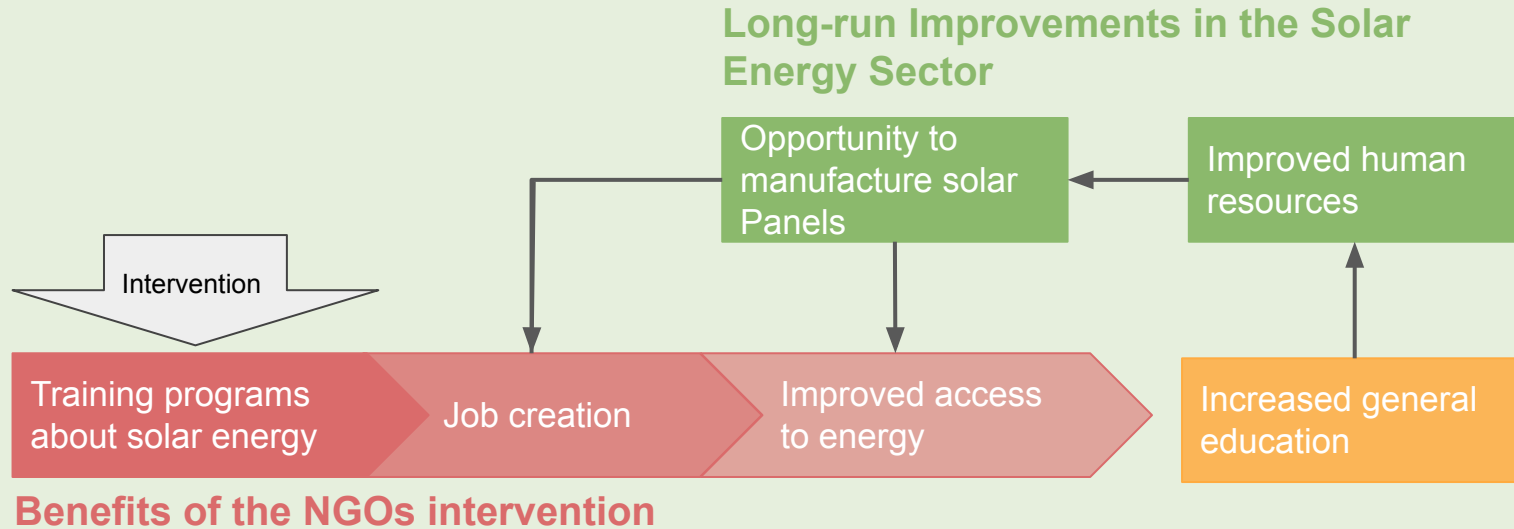


Assessment model of intervention



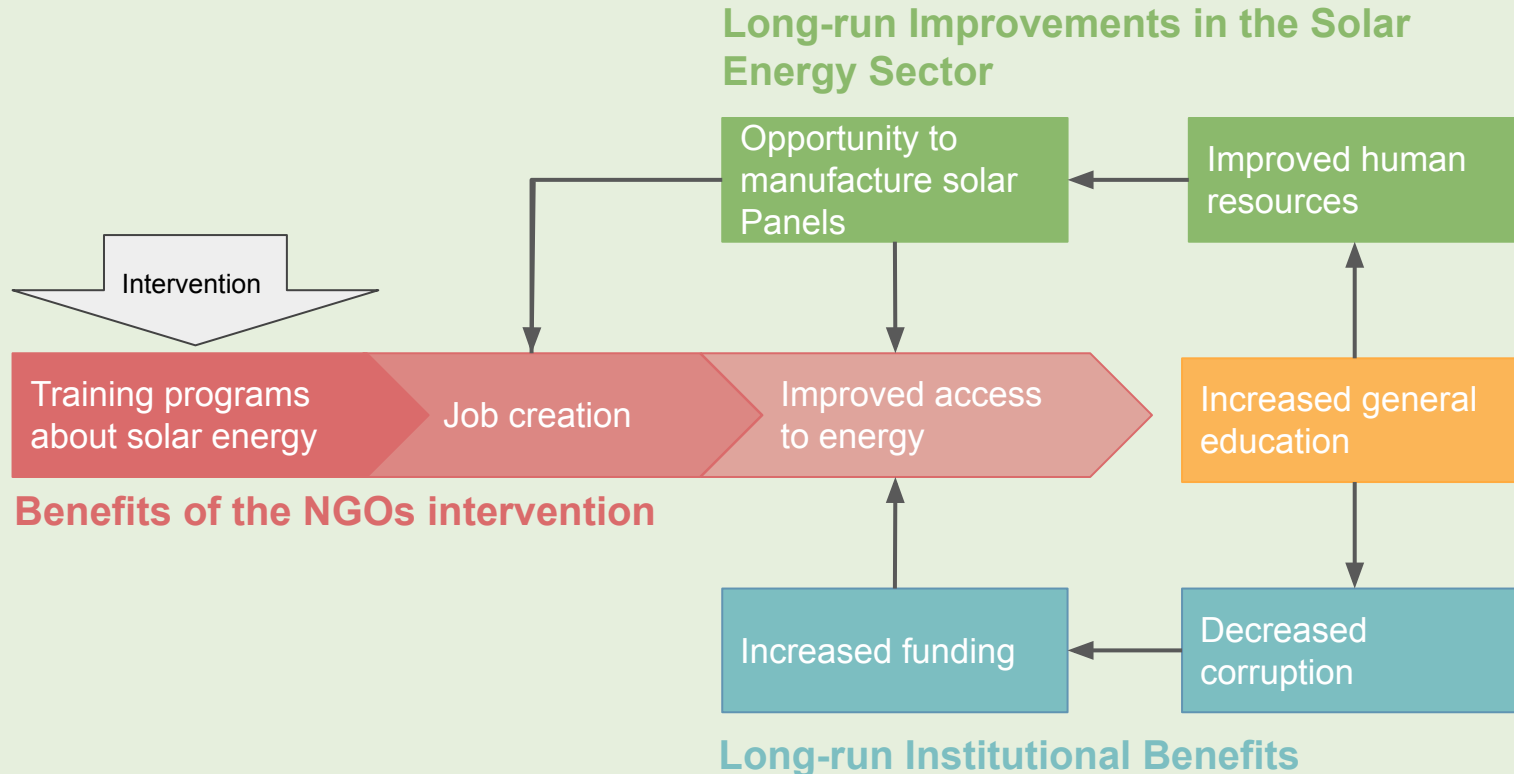
Benefits of the NGOs intervention

Assessment model of intervention

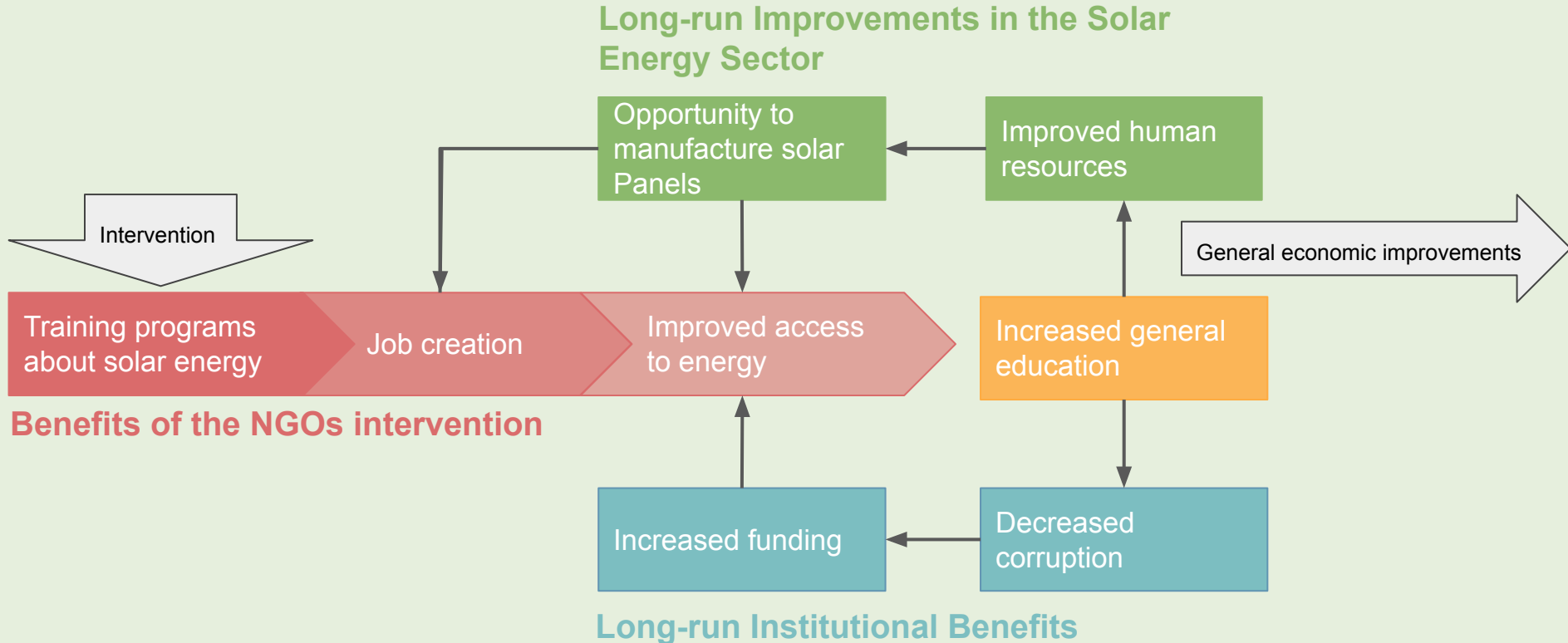


(Mohammed et al. 2013; Bishoge et al. 2020, Chirambo, 2018; Adenle 2020; World Bank, 2021)

Assessment model of intervention



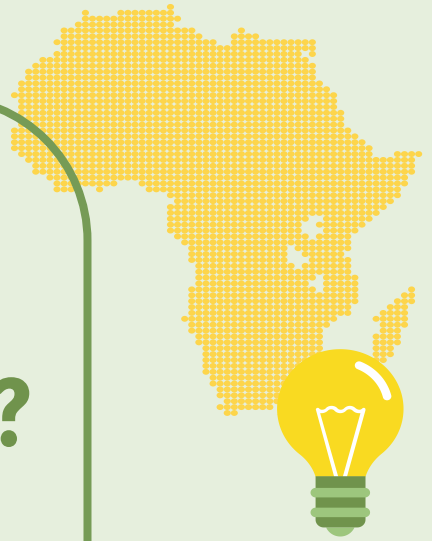
Assessment model of intervention



Thank You for listening!

Do You have any Questions?

**We would be very happy to
get some Feedback from
You!**



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