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SEED Case Studies

switchafrica GREEN

Sahelia Solar

Increasing clean and affordable energy access in rural areas in Burkina Faso

SEED
promoting entrepreneurship for sustainable development

Founding Partners

UN environment

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About SEED

SEED promotes eco-inclusive solutions of small and growing enterprises in support of sustainable development by increasing their organisational resilience in local, national and regional markets and shaping an enabling environment.

SEED was founded by the United Nations Environment Programme (UNEP), the United Nations Development Programme (UNDP) and IUCN (International Union for Conservation of Nature) at the 2002 World Summit on Sustainable Development in Johannesburg and is hosted by adelphi research gGmbH, based in Berlin, Germany.

adelphi research (AR) is a leading think-and-do tank for policy analysis and strategy consulting. The institution offers creative solutions and services regarding global environment and development challenges for policy, business, and civil society communities.

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Authors: Morgan Cardiff, Christine Meyer

For further information please contact Christine Meyer (christine.meyer@seed.uno)

Research, Film & Picture credits: Morgan Cardiff

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About SWITCH Africa Green

The overall objective of SWITCH Africa Green (SAG) is to support 6 countries in Africa to achieve sustainable development by engaging in transition towards an inclusive green economy, based on sustainable consumption and production patterns, while generating growth, creating decent jobs and reducing poverty. The objective will be achieved through support to private sector led inclusive green growth. SAG is implemented by the United Nations Environment Programme with the assistance of the European Union.

Creating innovative so

LOCAL CHALLENGES

Lack of access to clean and reliable energy and its implications in rural Burkina Faso

Electrification rates in Burkina Faso's rural areas are only slightly above 6%, indicating insufficient energy access for rural Burkinabe households. Additionally, 85% of rural households remain reliant on greenhouse gas emitting kerosene and diesel for lighting and power generation.[1] The use of these energy sources contributes significantly to climate change. Renewables contribute less than 1% to the country's energy mix. Moreover, electricity costs are higher than in similar low-income countries, which poses a barrier to increased energy access opportunities in Burkina Faso.[1]

A lack of energy services including illumination, heating, cooling, refrigeration, heat for cooking and access to information and communications technology has profound impacts on well-being and livelihoods of communities. Furthermore, the use of kerosene and indoor pollution significantly contributes to health problems such as tuberculosis and asthma.[2]

Limited access to sustainable energy sources results in the frequent use of local timber and charcoal resources by households for diverse activities such as cooking. The increased demand for wood fuel contributes to deforestation and associated impacts, including desertification and biodiversity loss. High levels of deforestation in Burkina Faso deteriorate soil quality and increase the frequency and intensity of droughts, resulting in lower agricultural yields and food scarcity.

1 UNEP 2013. http://seeds.uno/SSSourceEmissionsReduction
2 Oxfam 2017. https://www.oxfamamerica.org/static/media/files/oxfam-RAEL-energySSA-pt2.pdf
3 UN World Food Programme 2014. http://documents.wfp.org/stellent/groups/public/documents/special_initiatives/WFP265205.pdf

HOW THE BUSINESS WORKS

Sahelia Solar is an eco-inclusive enterprise located in Ouagadougou, the capital of Burkina Faso, and specialises in the design and supply of a range of solar energy systems. Solar energy installations allow customers to access clean, reliable systems, thereby reducing their reliance on the limited and inconsistent national grid. Sahelia Solar operates in three main sectors; residential, commercial and industrial, and offers both pre-pay and pay-as-you-go (PAYG) models. The pre-pay model allows those with financial means to have immediate access to clean, reliable energy systems. The PAYG model is an innovative way to provide a cost-effective and demand-oriented pathway to finance modern energy services in low income communities. The model is designed to offset the initial high costs of system installation. It allows low income or capital-poor customers to pay in instalments.

Sahelia Solar offers solar solutions with hybrid or autonomous systems. The product range comprises solar back-up systems as an alternative energy source for customers who are already connected to the national energy network, solar kits for rural and remote communities who require night-time lighting, and solar hot water systems.

Key Facts:

Location: Ouagadougou, Burkina Faso

Founded: 2012

Workers: 12 (7 full time, 5 casual)

More than 50% of employees are younger than 35 years

olutions to local challenges

Watch how we do it!

> There are many opportunities for off-grid solar energy in Burkina Faso. It is one of the sunniest countries in the world, and the national grid cannot cover the entire country.
>
> *Serge Eloi Ouedraogo, CEO Sahelia Solar*

The power of partnerships

Local organisation

The Fédération Nationale des Groupements NAAM (FNGN) is a rural organisation that promotes self-governance and supports the economic development of local farmers and village communities. It was established in the 1960s and is comprised of over 650,000 members from 5,500 smaller grassroots groups across the country. FNGN relies on the collective actions of members to set up autonomous communities that are self-sufficient, in terms of food, labor and finance. In 2010, FNGN members were beneficiaries of a UNDP program that established multifunctional energy platforms within the communities. These platforms consist of a diesel or hybrid system and various associated tools such as grinding mills, pumps, or welding stations.

In partnership with FNGN, Sahelia Solar aims to upgrade these multifunctional platforms by converting diesel-based systems to solar systems. This conversion eliminates the costs of diesel and reduces the high maintenance fees. Additionally, the shift to a clean energy source allows organisation members to contribute to climate change mitigation and improve air quality.

This partnership will allow FNGN members to access Sahelia Solars' solar energy systems in order to improve the efficiency of FNGN platforms and increase profits to the communities involved. Sahelia Solar will gain access to FNGN's networks and resources, including skilled labour. This enables the Sahelia Solar enterprise to pilot new technologies in rural areas of Burkina Faso. Currently, Sahelia Solar is seeking funding to run a pilot program.

Learn more about the partnership!

International enterprise

SMA Sunbelt Energy is a German company focused on off-grid, hybrid and battery-based solar solutions. SMA supplies Sahelia Solar with reliable technologies required to meet the needs of their customers. The provision of these high-quality products in combination with Sahelia Solars' customer-oriented technical assistance and after-sales services ensure consumer confidence and continued use of the technology. SMA's solid reputation in Africa assists Sahelia Solar to acquire new customers. Furthermore, Sahelia Solar received training and technical assistance from SMA on the installation and use of their products. This has helped Sahelia Solar to improve their service and business operations.

The partnership between SMA and Sahelia Solar provides SMA with the opportunity to develop its business in Burkina Faso and to build its reputation as provider of high quality technologies. To date, Sahelia Solar has installed 15 sites using SMAs' solar energy products.

> Sahelia Solar brings reliable technology and equipment, which establishes confidence between us and our members.
>
> *Harouna Zongo, FNGN*

Discover the partnership with SEED!

> The SEED support through SWITCH Africa Green has given them the management skills and exposure to be able to gain that next level of funding.
>
> *Malick Lingani, SEED Advisor, Burkina Faso*

Creating impact

SOCIAL IMPACT

Sahelia Solar operates around two central social objectives; first, the creation of jobs and employment within the clean energy sector; and second, livelihood improvements for low income customers and communities in remote regions of Burkina Faso.

Sahelia Solar has provided employment and training opportunities for local electrical engineers, administration staff and university interns. These local opportunities provide income and additional skills development in the installation of energy technologies.

The installation and use of diverse solar energy systems provide additional social benefits to target communities, including affordable clean energy, increased availability of night-time lightning and the reduction of air pollution.

Key impacts

- Employment and skills training to 12 employees
- Skills training for 23 local community members
- Practical training for 3 university interns

ECONOMIC IMPACT

Sahelia Solar's main economic objectives include the provision of income for technicians within the clean energy sector and decreased consumer spending on energy through the use of more efficient and cost effective solar and hybrid systems and multifunctional platforms. The reduction, and often elimination, of costs associated with running and maintaining diesel systems allows the community to draw higher profits from their activities and spend these profits on livelihood improvements and other income generating activities.

Key impacts

- Installation of more than 20 commercial solar systems
- Installation of more than 50 residential solar systems
- Secure income for 7 fulltime and 5 casual employees within the clean energy sector
- Sold more than 100 solar kits for remote areas

Sustainable development goals

SDG 3

Good health and wellbeing
Sahelia Solar kits reduce the household use of wood and kerosene and thus contribute to the improvement of indoor air quality, provide an opportunity for children to study at night, and allow people to partake additional income generating activities during the evenings.

SDG 7

Affordable and clean energy
Sahelia Solar uses a pay-as-you-go model that allows low income households to avoid the prohibitive up-front costs of solar energy and benefit from the use of the clean energy source. Renewable energy sources reduce ongoing costs of fuel purchase and technology maintenance.

ENVIRONMENTAL IMPACT

The use of solar energy solutions reduces the local demand for timber and charcoal resources for household activities. The decreased demand for wood products helps to combat deforestation and contributes to soil rehabilitation and biodiversity conservation. Furthermore, the eliminated need for kerosene and diesel to run generators and produce energy supports improvements in air quality and greenhouse gas emissions reductions. The enterprise assists climate change mitigation efforts at the local and national levels by increasing the capacity of solar energy and reducing the national grid's reliance on energy from non-renewable sources.

Key impacts

- Reduce the reliance on wood and charcoal resources
- Mitigate the impacts of climate change by reducing fossil fuel consumption and the land clearing

SDG 11

Sustainable cities and communities
Sahelia Solar identifies and actively promotes opportunities for solar and off-grid micro energy systems to build more sustainable communities. The use of clean energy technology reduces both the urban and rural impacts of wood burning using traditional energy systems.

See how we create impact!

> We have a limited ability in Burkina Faso to reach everyone with energy. With enterprises such as Sahelia Solar we can easily and affordably reach out to these remote areas.
>
> *Malick Lingani, SEED Advisor, Burkina Faso*

FUTURE PLANS

- Raise funds to trial a pilot program with FNGN
- Increase sales and strengthen the sales team
- Develop further the business plan
- Acquire a joint venture to expand services to larger systems

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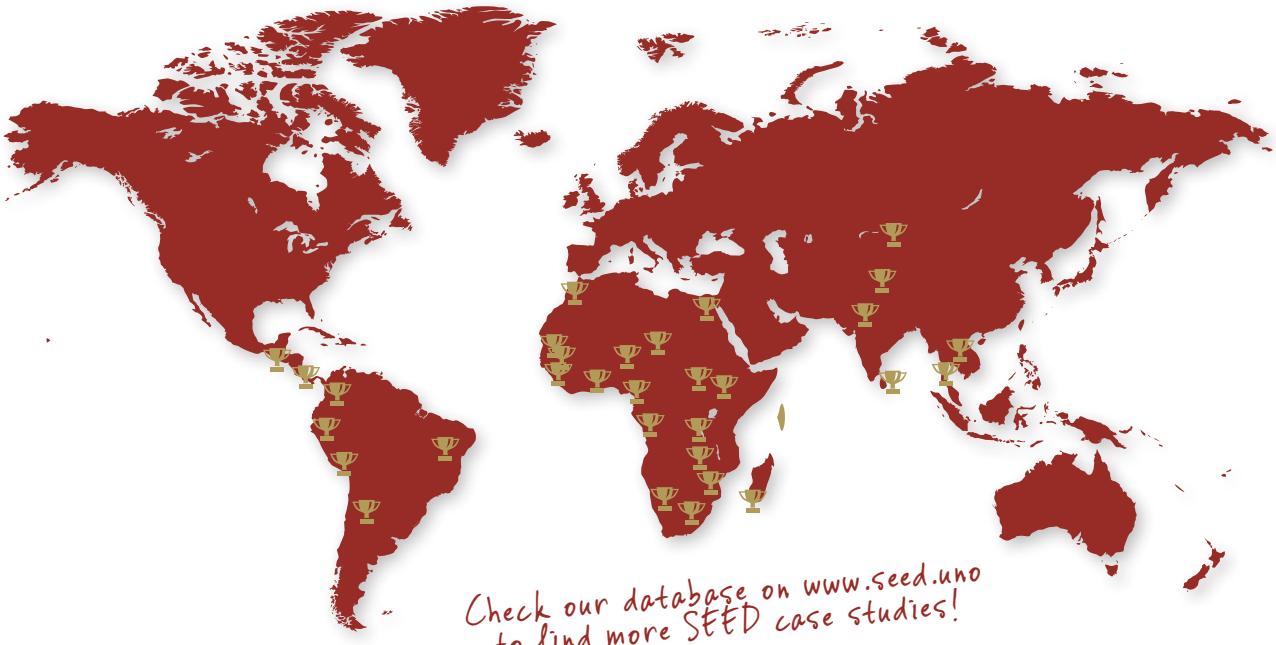
SEED Case Studies Series

Demonstrating Sustainable Development on the Ground through Locally-Driven Eco-Inclusive Enterprises

Eco-inclusive enterprises, also known as green and social enterprises, have a critical role to play in achieving a global Green and Inclusive Economy, tackling the Sustainable Development Goals or implementing the Paris Agreement. By embracing the added values of social improvement and resource management eco-inclusive enterprises that have won a SEED Award are living proof that entrepreneurial partnerships between various stakeholders can create innovative and novel solutions for delivering sustainable development at the grassroots level and be economically sustainable.

Since 2005, SEED has supported over 240 Award Winners in 37 countries. While the value of eco-inclusive enterprises in delivering sustainable development is increasingly recognised and harnessed in the development sphere, there is still very little data available on the triple bottom line impact of these enterprises and their contribution to sustainable development. The SEED Case Studies are designed to help fill that gap by generating insights for policy and decision-makers on the role of green and inclusive enterprises in achieving sustainable development, and on enabling factors that can help them overcome barriers, reach scale and replicate.



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