

Local Solutions Lab

Applying a design-thinking approach to the identification of communities' needs and solutions

A people-centred approach to deliver electricity services hinges on a profound understanding of the needs and opportunities prevalent in target communities. The Clean Technology Hub (CTH), an organisation committed to the incubation of clean technologies in Nigeria, applied an innovative approach to identifying community needs and triggering change. The "Local Solutions Lab" (LSL) concept aims to develop community-driven and bottom-up local solutions for sustainable development through a collaborative deep dive into local challenges and opportunities. This case study describes the concept and its application in Kaduna and Anambra in 2019, as well as some of the impacts it has had since, in particular in the creation of energy-related solutions for businesses.

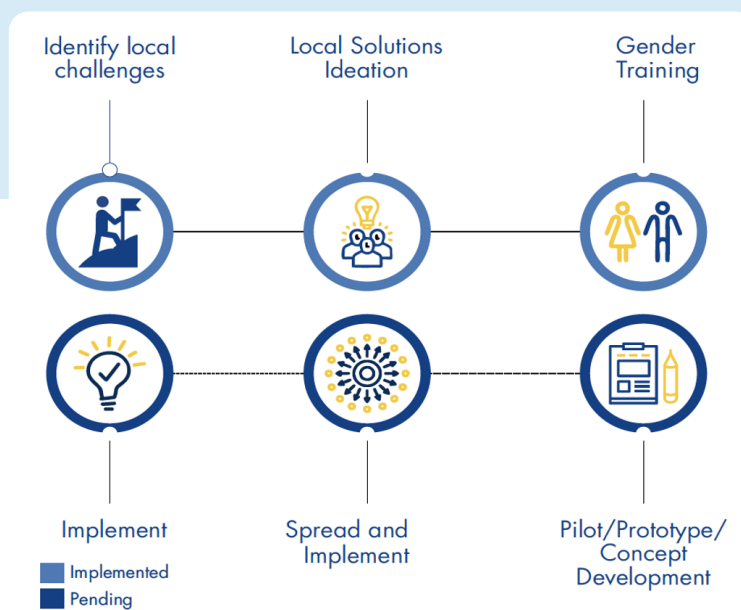


Figure 1. The Local Solutions Lab process. (Source: CTH)

General information

Project name	Local Solutions Lab
Developer	Clean Technology Hub www.cleantechnologyhub.com
Location	Anambra, Kaduna (Nigeria)
Focus dimension	User opportunities and constraints
Type of action	Bottom-up needs assessment
Financing sources	Grant
Technology	N/A

Introduction

Rural communities and local Micro, Small and Medium Enterprises (MSMEs) in Nigeria face different challenges on the path towards achieving sustainable development. However, many times it is not clear where to start “untying the knot of challenges”. Even articulating those challenges systematically poses difficulties. Government interventions are typically non-existent in rural and informal urban settlements, or weak in urban spaces distant from capital cities. Where government projects appear, top-down development strategies from the government often fail to address challenges adequately due to a lack of understanding of local conditions.

Through the organisation of targeted workshops with communities and MSMEs in Anambra and Kaduna States, the [LSL project](#) identified five key challenges in each state, and empowered local target groups to develop local solutions to address each of those challenges. The project received support from the Nigerian office of the [Heinrich Böll Foundation](#)

Run up to Local Solutions Lab

Anambra and Kaduna States, located in the South East and North West of Nigeria, respectively, were selected due to the former’s budding small-scale enterprise ecosystem and local industry presence; while for the latter it was due to its promising agricultural sector and early progress in adopting clean energy solutions.

The first step of the process involved desk research on the local economic activities and socio-economic indices of the two states. In addition,

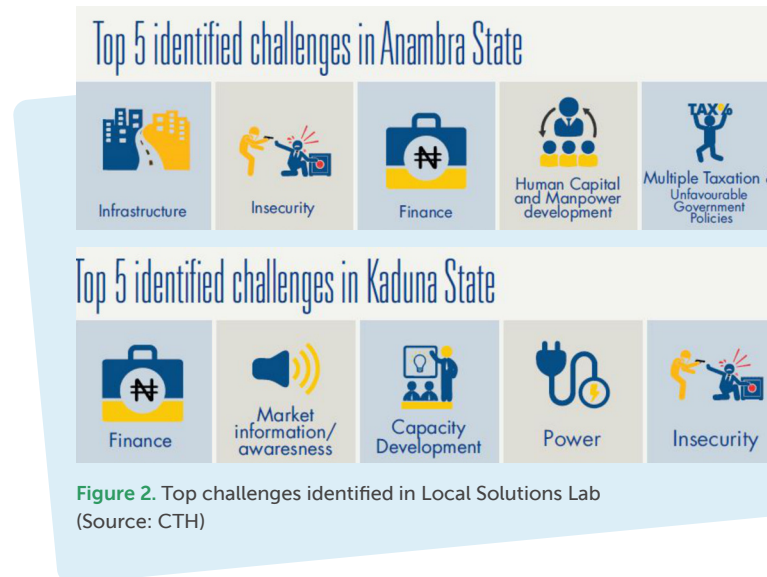


Figure 2. Top challenges identified in Local Solutions Lab (Source: CTH)

different local stakeholder groups were mapped: MSMEs, business associations, civil society actors, communities and key enablers (e.g., government or financial institutions). Furthermore, CTH developed a first overview of local sustainable energy markets as well as solutions already in place.

Engagement with the stakeholders took the form of surveys, one-to-one interviews and group meetings. Thanks to these, the overall picture of the challenges in the states was complemented by local perspectives, and there was a first indication of solutions of high potential as well as key local enablers to facilitate those solutions.

The engagement also served to create awareness regarding the potential of bottom-up needs assessment processes and about the Local Solutions Lab process.

Based on the engagement with local stakeholders, five top challenges were identified in the two states (Figure 2). Each of these challenges were then examined in two “deep-dive” workshops of the Local Solutions Lab.

Local Solutions Lab

In late 2018, CTH convened representatives of local stakeholders from target groups in Kaduna and Anambra. Before entering the collaborative design-thinking process, the first step of the LSL “deep dive” workshops was a joint review of the results available up to then.

Participants were then divided into focus groups to brainstorm on each of the top five challenges previously identified. Each focus group brainstormed:

- The issue itself, i.e., articulation of the local challenge
- Specific impacts of the local challenge
- Ideation of Local Solutions:
 - Brainstorming of new solutions
 - Improvements to existing solutions
 - Integration of gender perspectives and energy issues
- Identification of local key stakeholders involved in each challenge
- Formulation of strategies for cooperation with key stakeholders and local champions
- Goal setting for next steps and timeline



Figure 3. The Local Solutions Lab in Anambra
(Source: CTH)

The solutions identified by the stakeholders were diverse. They included policy solutions such as micro-credit schemes, grants, reliable power provision, tax holidays and subsidies for MSMEs, bespoke technology for productive activities, provision of fertilizers/weed control, access roads and MSME hubs for human capital development. Other solutions implementable by other actors included capacity building, promoting local materials/expertise/labour, support from developmental organizations, technical partnerships, local security networks, and community and multi-sector stakeholder collaboration.

Key figures

- 2 Local Solutions Lab workshops
- 60 participants in Kaduna
- 30 participants in Anambra
- 5 key challenges discussed from a design-thinking approach
- 50% of the participants were women
- 2 follow-up workshops on gender empowerment through clean energy adoption
- 80 women at each gender-energy workshop
- 440 DRE systems rolled out in households and MSMEs as a follow up to the initiative

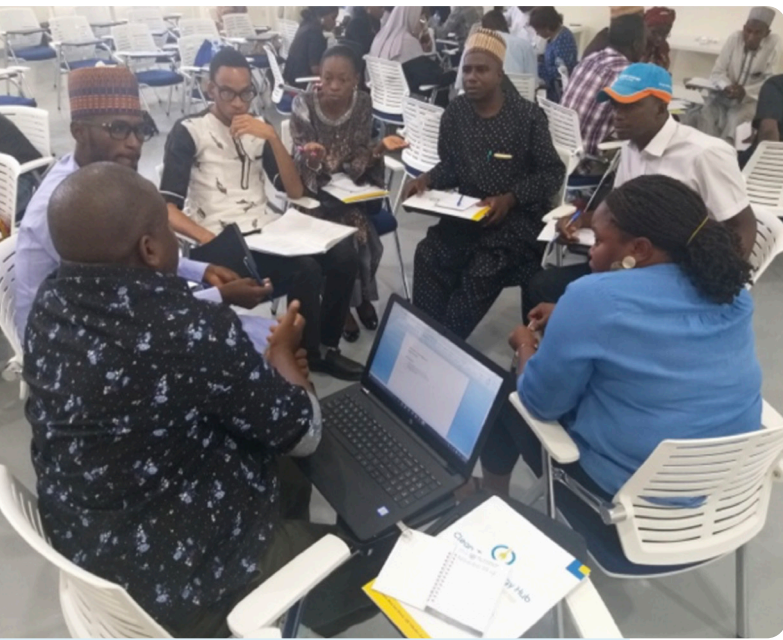


Figure 4. The Local Solutions Lab in Kaduna (Source: CTH)

Stakeholders identified government as a relevant actor for implementing some of the solutions, but also saw roles for financial institutions, civil society, development organizations, community leaders, MSME cooperatives and associations, community groups, capacity development organisations, the private sector and trade unions.

The brainstorm further revealed a complex interconnection of local challenges where, for example, skills gaps (whether found in MSMEs, communities or women) are a barrier to accessing finance. The collaborative exchange of ideas and issues also revealed a strong connection of problems to gender and energy, also known as the 'Gender-Energy Nexus'. In other words, infrastructure, security, skills and capacity building challenges can be overcome with gender empowerment and cost-efficient decentralised renewable energy (DRE) solutions.

For example, a prominent solution identified was that MSMEs in Kaduna could benefit from the introduction of renewable off-grid energy and equipping women with skills to enter the sector.

This improves both the livelihood of women in rural areas by complementing their income and puts them in the position of 'local influencers' who share their experience and help facilitate increased awareness of clean energy.

Taking a holistic view on existing problems in the communities allowed the identification of community-driven local solutions. Women and MSMEs were identified as primary starting points for communities to address local challenges. As a direct result of the LSL, and to address the solutions involving the gender-energy nexus, CTH followed up with female empowerment workshops and DRE training in Abuja and Abia in 2019. The workshops, attended by 80 women, served to develop skills in business management and opportunities to adopt clean energy solutions to start a small business.

As part of the follow up activities, CTH provided local stakeholders with technical support, to ascertain which renewable energy systems (e.g., solar dryers for agriculture or solar powered cold storage systems) suited the identified challenges.



Figure 5. Gender empowerment through clean energy adoption workshop in Abia (Source: CTH)

Impacts following the LSL

The LSL process triggered a number of initiatives. An agricultural cooperative in Kaduna received support to apply solar drying systems into crop processing as well as business training. This led to an increase in their revenues and profit margins, as well as impacting livelihoods in the community as a whole.

A similar impact could be observed in the case of small garment MSMEs. Here, CTH supported the small companies, mostly led by women, to replace diesel generators used to power their mechanical looms with solar systems, and provided business training.

Lastly, the LSL workshops also impacted individual companies. This is the case of a young female microentrepreneur who was supported to kick-start her business through training and access to a solar cooling box. With the resulting increase in her revenues, and with a personalised payment plan, she was able to purchase a second cooling box, paid over a 6-month period.

Replicability

There is an increasing amount of evidence that underlines the importance of taking into account the socio-cultural, economic and political dimensions of the local contexts and communities in which the energy-related intervention should take place (Ockwell et al., 2018; Ulsrud et al., 2015). Community-driven approaches to understand these local contexts increase the acceptance of renewable energy interventions and ensure the successful long-term operation of the energy system by the community. There is great potential to replicate the bottom-up approach pioneered by CTH in the Nigerian energy space (Anietem and Abiodun, 2016). The case of the Local Solutions Lab has shown that a systematic assessment of needs reveals insights into development challenges of specific communities and triggers a number of initiatives, in particular in the context of MSMEs.

The LSL approach can lead to the identification of suitable DRE interventions, which can eventually grow productivity and lead to sustainable development locally.

Key challenges

The key obstacle to conducting a similar process in other regional contexts in Nigeria relates to the lack of awareness around the benefits of bottom-up planning. Moreover, insufficient data coverage can limit the identification of key challenges and key stakeholders in a certain region. Lastly, a comprehensive identification of users' demands for productive activities in communities, MSMEs or individuals (women), in particular related to energy, can be very resource-intensive.

Future outlook

CTH evaluated all identified solutions from the LSL workshops and selected five specific solutions which should be further supported. The next step will involve developing and implementing pilot projects that address each of these five potential solutions, tailored to the local context and taking into consideration the lessons learnt in the Local Solutions Lab.

Lessons learnt

- The use of design thinking as a framework proved successful.
- The role of business training (in particular for women) in following up the process was very important and revealed that awareness about the role of both energy and women in rural community development is underestimated by all participating actors of the workshops.
- Through the help of the design-thinking approach of the Local Solutions Lab a collection of the actual opportunities for DRE solutions and gender empowerment was elaborated.

Further resources

- Find media material by CTH on their YouTube Channel: <https://www.youtube.com/channel/UCKfAJth01cZcFX-RkQmOGnw/videos>
- Watch the video “Women in Energy Leadership”: <https://youtu.be/URe1j6iw2u0>

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Find more information and case studies on the Nigeria Off-grid Solar Knowledge Hub:

https://energypedia.info/wiki/Nigeria_Off-Grid_Solar_Knowledge_Hub

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