



FIELD EXPERIENCES

Can adolescent girls' safe space clubs effectively run solar-powered mobile phone charging stations in rural Sierra Leone?

By Nadia Assad and Sarah Blake

Solar-Powered Mobile Phone Charging Hubs and Adolescent Girls

Access to electricity in rural Sierra Leone is scarce. While data are weak, estimates on the proportion of households having regular access to electricity range from 1 percent to 5 percent. However, along with mobile phones, which are now common even in settings where phone lines never reached, new energy technologies are beginning to fill in where traditional infrastructure is absent. Solar technologies hold promise for expanding access to electricity while offering sustainable alternatives to expensive, nonrenewable sources such as diesel generators for powering lights, phones, tools, and appliances.

International donors, the government, and private companies involved in expanding access to solar technologies often cite the importance of including women as sales agents and consumers. Yet these approaches tend to focus on individual adult women, with limited attention to either the potential for cooperative uses of technology or to adolescents' potential roles as either energy consumers or future professionals. At the same time, adolescent girls' "safe space" programs are a common form of NGO



Restless Development volunteers with members of the girls' safe space club (2017).

programming in Sierra Leone. Such programs center on organizing groups of 15 to 30 girls who meet two to three times per week with a young woman mentor, who, in turn, facilitates participatory learning activities. These activities focus on basic life skills, specifically health education, and provide a place for girls to develop supportive relationships with mentors and peers. Safe space clubs also have untapped potential to serve as platforms for girls to build a broad range of economic and social assets.

Recognizing that there is important learning to be done in connecting adolescent girls' clubs and solar technologies, the Population Council conducted a pilot project, starting in 2016, which sought to:



Fatmata, a girls' club member, connects a customer's phone to charge.

- Demonstrate that a girls' safe space club could operate and maintain solar technologies with relatively minimal guidance and oversight.
- Explore whether a solar charging hub could serve as a source of collective income and savings for girls' club members.

In addition, the Council provided insights on:

- The potential of this activity to build girls' social assets, such as cooperation and problem-solving.
- The roles that important adults, such as NGO staff, mentors, and community members should play for this kind of business to be successful.

Project Overview

In 2016, Restless Development introduced a youth engagement project in more than 40 communities in two districts. A cohort of volunteers receiving stipends, recruited throughout Sierra Leone, were placed in a set of “hub” communities and oversaw community-based activities meant to support adolescent health and well-being in three nearby “spoke” communities. These volunteers conducted various community-engagement activities with adolescents and adults in communities, and acted as first-line supervisors for mentors, who were recruited from the community and responsible for managing the safe space clubs.

This project model presented a promising basis for introducing the solar technology pilot, as it reflected both flexibility and a high level of engagement, with two community volunteers and a mentor contributing to the management of a new, but ongoing, girls' safe space club. Restless identified the pilot community: a “hub” village more than an hour's drive from the district's main town. The girls' club was comprised of 15 girls, ages 12 to 17, and had a designated meeting space that they alone controlled: an unused classroom that the community's school principal, Mr. Conteh, had reserved for their use.

Once the pilot community was selected, a Council consultant implemented the introduction of the solar charging station. The consultant developed a girl-friendly user manual, with pictures of girls using each component of the system, and led trainings on how to use the system. In addition, when components of the system broke, she coordinated necessary repairs and technical support from the project's technology partner, EnergenWAO. In addition, the Council also documented observations, holding regular status checks with NGO staff, mentors, community members, and girls.

During the implementation period, the structure and management of the girls' safe space club changed dramatically; just a few months after the system was installed, the Restless project was unexpectedly halted, and the volunteers withdrew from the community.

This left Mr. Conteh alone in providing support for the girls and the solar charging hub, and though they were encouraged to continue meeting at the school, without the Restless program the club's mentor had no formal support, training, supervision, or remuneration. As a result, she struggled to maintain the full scope of life skills and financial literacy activities offered by the initial program. After she dropped out entirely, Mr. Conteh appointed a teacher from the school (Mr. X) to supervise the girls and their business.

Later, the Council, with support from the Friends of the Sierra Leone Adolescent Girls Network (FoSLAGN), helped to facilitate a revival of the club and to expand pilot activities with two local NGOs. STEM Women, a Freetown-based NGO working to promote Science, Technology, Engineering, and Mathematics (STEM) learning, provided stipends for two mentors. PROTECT SL, an NGO with several safe space programs in the district, also provided basic life skills content training to the new mentors, trained them, and facilitated cross-learning. PROTECT also partnered with STEM Women and the Council to introduce a solar technology pilot in a girls' club in the main district town. As with the first pilot, the Council's consultant provided training for the girls' club in managing the solar charging system and coordinated with STEM Women and PROTECT to monitor the project. That pilot, although planned for a year, ran for just six months because the main safe spaces program, too, lost funding, and, absent a community champion like Mr. Conteh, the club simply disbanded.

Economic Asset-Building: From Earning Money to Managing a Business

A central question for the pilot was whether introducing a solar-powered phone charging hub would provide girls with a chance to cooperatively develop economic assets: the money that phone charging generated itself, and also the skills to earn, save, and manage money, and sustain a competitive business. While there was no formal curriculum on managing the solar charging business, the Council's consultant, Mr. Conteh, and the community mentors facilitated learning and problem-solving sessions to support the girls' club in managing their business.

Community Agreements

Prior to installing the solar charging system, Restless, the Council, and the pilot community's chief all participated in a public signing ceremony formalizing agreement of their commitment to support the girls' club and their new business. This built on an existing agreement between Restless and community leaders for the project as a whole, and included commitments from the community to ensure that the girls would have sole control over the system and its pricing structure, and commitments from the NGOs to provide technical oversight and support to club members and their mentor.

During that second phase of the project, representatives of the school that hosted the club also signed on to an agreement to support the girls' business.

These sessions served as a public notice of the project's intentions, promoted transparency among partners, and provided an opportunity to inform community members about the project and the purpose and activities associated with the girls' club.

Staying Competitive: Before opening their business, the girls' club proposed SLL1,000 (approximately US\$0.10) as the charging price. In a consultation to see what people were willing to pay, some community stakeholders tried to contest this price and suggested that the girls charge phones for SLL500. The stakeholders claimed that the lower price was necessary because it was cheaper than the closest competitor. The girls were not convinced of this idea and made a point that generator-powered stations in nearby communities were charging SLL1,500, which was more expensive than what they were asking before finalizing the SLL1,000 price. In the second community, the girls' club introduced a discount program, offering two for the price of one charging on select days, and the original club also introduced discounts later in the project to maintain customer loyalty.

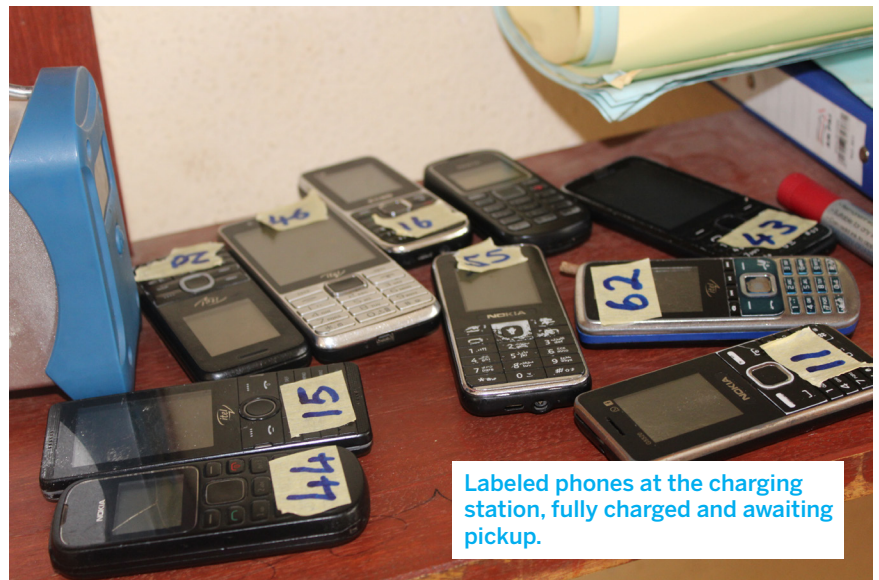
Earnings: Girls reported that they most often charged 15 phones each day, generating SLL15,000, although the number fluctuated between 11 and 22. During the first eight months of the project, the first hub earned SLL735,000. While earnings in later periods both fluctuated and became harder to track as contact

with the club became irregular, demand remained and the hub consistently attracted customers from the host and neighboring community, along with students and teachers.

Group Savings: At the beginning of the project, the Restless volunteers and girls contracted a local carpenter to build a lockable wooden box to serve as a cash bank. During the initial implementation period, the female Restless volunteer held the keys. Later, one mentor stored the box and the other held the key. Throughout, the girls consistently deposited earnings into the box, and decided as a group on what to do with the funds, something they did relatively infrequently, demonstrating their shared commitment to savings.

Managing Money and Joint Decision-Making: Before they opened their business, the girls decided that any decisions about how to use the money earned from the system would need to be unanimous, and they stuck with that commitment. These funds were used to purchase shared resources for the club, such as cups and a bucket for drinking water, repairs to the clubhouse door, and replacement charging cords for the hub.

In addition to purchasing shared resources, club members periodically distributed funds among individual members. In the first year, on opening the savings box to find that they had earned SLL735,000 (approximately US\$80) in eight months, the girls decided to use their shared earnings to support 13 out of the 15 members who were taking the national exam (BECE) needed to graduate from Junior Secondary School to Senior Secondary School. The 13 exam-takers each received SLL55,000 to help with transportation to the exam and refreshments, which was otherwise a long and tiring walk away. The girls also determined that the two girls who were not taking the exams should receive SLL10,000 each as a gesture of appreciation for their work running the station while the others were taking the exam. In 2019, the two club members taking the exam split SLL120,000, demonstrating the ongoing value of this approach.



Labeled phones at the charging station, fully charged and awaiting pickup.

Strengthening Social Assets: Cooperative Planning, Management, and Problem-Solving

Beyond access to money and goods, the project gave girls a chance to develop social assets,¹ such as trusted relationships, critical thinking skills, and self-efficacy; such assets align with the broader aims of safe spaces programming, which provides nonformal learning on topics related to health and well-being and provides a girls-only space to play games, study, or discuss issues with peers and young adult mentors.

Cooperation and Trust: At the beginning of the project, club members unanimously agreed that for any money to be taken out of the savings box, every girl in the club would have to agree to the purpose of the withdrawal. Once an agreement is reached, the amount needed and the agreed-upon purpose of the money is written on a piece of paper. Each member signs it to confirm their consent and these signed pages are deposited into the box. This helped build trust among members, fostering a sense of transparency and shared responsibility in decision-making throughout the project.

Effective Scheduling and Sustained Commitment: The girls recognized that the most efficient way to manage the system would be to set a schedule where responsibility rotated among members: two members per day managed the system, with supervision from a mentor. Charging hours were limited to daylight hours

¹ For more information on assets, see: www.popcouncil.org/news/what-are-assets.

before and after school to accommodate girls' chores and concerns about staying out after dark.

Confidence and Problem-Solving: Over the course of the project, girls' club members demonstrated growing confidence in their abilities to manage the technology and the club itself, and to maintain a schedule that was reasonable and fair for each member. For example, after an initial panic over what turned out to be a detached charging cord, the club members grew more confident operating and checking the system for problems and describing problems and the steps they had taken to verify them. They further cooperated in defining and posting a set of rules and regulations for themselves and their customers, which they posted in the clubhouse.

Additional Benefits for Students and the School

Along with the opportunity for girls' club members, the fact that the girls' club met and managed their charging hub in a school carried benefits for others. Having the charging hub on the school's campus meant that all of the students had a safe and reliable place to charge phones. In addition, because the hubs come equipped with additional lights, the school classroom was available after school hours, which helped to support additional exam preparation sessions for both girls and boys.

Learning from the Solar Charging Hub Pilot: Questions and Answers

Throughout the course of the pilot, the Council encountered a common set of questions about the distinct features of introducing solar technology as an element of girls' safe space programming. Various experiences from this pilot provided answers:

1. What role should adults play in supporting a girls' club and a girl-run business?

Mr. Conteh: Community Champion. While the first community was not chosen specifically because of the presence of a local girls' club champion, throughout the duration of the project the school's principal, Mr. Conteh, proved a critical presence. He was an avid supporter of the club at his school, and when the

original NGO left he stepped in to supervise the girls and assist as much as he could, designating teachers to support the club's business. He ensured that the girls continue with all the structures they had developed and became the keeper of the keys to the savings box, which he later handed over to the two local mentors once the girls had selected them. Mr. Conteh's commitment went far beyond the commitment stated in the community agreements, although the act of signing on and agreeing to support the girls' business likely helped to motivate other community elders to sustain their support throughout the project.

Donors and NGOs: Consistent, Long-Term Support for Girls' Clubs. For reasons unrelated to the solar charging pilot, Restless's overall program halted three months into the pilot period. As a result, the volunteers who held the main oversight responsibility withdrew. This left the girls and their system without the supervision and support the volunteers were providing. Later, a similar scenario unfolded in the second community: when grant funding for the club ended earlier than expected, the mentor was left to essentially fend for herself. With no organization supervising or supporting the club, and no new content or learning activities, the club effectively disbanded. Then, the mentor struggled to motivate the girls to continue to take part in the charging business. Eventually, she contracted two young men as "security" to guard the system, but after this proved ineffective and the girls stopped participating in the business, the mentor's family expressed concern for her safety in managing the system since it was housed in an unused school classroom. So she moved it to her home and managed the system on her own.

Mr. X: The Potential for "Supervision" to Become a Takeover. A few months after Restless's exit, a Council visit to the club revealed major changes to the business: Mr. X, who had been asked to supervise and assist the girls, had clearly taken primary control. For example, the posted rules governing the use and management of the system/club had been changed and now described Mr. X as the sole operator of the system, restricting the girls from managing their charging hub. Mr. X also held the key to the space, and the girls were only allowed access when he was available. The girls also reported that their average daily income had dropped from SLL15,000 to SLL5,000, though they had not seen a major decline in use. In short, though the girls did not directly report



Girls' club members singing and dancing in the safe space.

it, we observed that Mr. X had completely taken over, managing the business, controlling access to the space, and holding much of the profit.

2. What about breakage and theft?

Breakage: A few months after the Restless volunteers left, girls on shift noticed that the battery unit was not charging; remembering their training, they hesitated to connect phones to the system. The (male) teacher assigned to assist them encouraged them to go ahead, assuring them that the unit would eventually start charging. The girls connected the phones and headed to class. Upon return to their clubhouse, the girls found the battery unit completely drained. They then checked the power cable, which was fitted properly. After the girls followed the manual's steps for conducting a basic check of the system, it became clear that the equipment required more in-depth inspection.

Mr. Conteh contacted the Council's consultant once it was clear that the system was not working. In response, a Council-EnergenWAO team traveled from Freetown to the community, equipped with both the equipment necessary to check the battery status and a replacement battery. After proper assessment of the battery unit, EnergenWAO determined that the unit needed to be repaired, with multiple components replaced. Since this could only be done at EnergenWAO's head office, and the system was under warranty, EnergenWAO installed the replacement battery. The girls, together with some teachers,

received an additional training in the use of the system and were reminded that it was safer for the system not to be used if the battery is below 40 percent.

Theft: One day in mid-2018, the girls arrived for a usual day of charging and soon realized that their battery unit was not charging. They decided to go through their usual checks for mechanical errors, but when they stepped outside to take steps involving the panel, they realized the panel had been stolen from where it was mounted on the roof of the building. They promptly reported this to Mr. Conteh. A few months later, EnergenWAO donated a replacement system, which was installed with brackets to prevent future theft.

3. Why do girls need a club? Can't they just run a business?

Life Skills Content and Trained Mentors: While the business and income-generating potential continued to keep girls interested in the project for several months after the original NGO left, it was clear from the Mr. X experience that the girls still needed the support of a mentor to ensure that they would not be taken advantage of. In the second community, the end of the NGO's program also signaled an end to the business, as girls simply stopped attending. Even as the club project was revived, the girls' motivation to take part waned in the absence of new learning activities or materials. Despite the income-generating potential of the system, it was not a sufficient enough draw for girls or their families to make attending the system a priority.

In addition to the content and structure that the club offered, the fact that it engaged a cross-section of girls was also important to maintain continuity of the business over two years. Under the original project, the club was made up of 15 girls, ages 12 to 17, who were enrolled in Junior Secondary School. Like many communities in Sierra Leone, there is no Senior Secondary School in or near the community, so in order to attend Senior Secondary School they have to leave their community to attend school, typically for the full school year. As a result, after the first year, with a majority of the girls (13) graduating from Junior Secondary School, just two original club members were left to manage the business, with no support for recruiting new club members.

While the two girls who remained in the community recruited a friend to support them, these three girls had limited ability to manage on their own. As the youngest club members, the two remaining girls had never been solely responsible for managing the system without support from older girls before. Because they had chores and studies to attend to, could not afford to manage the system every day, and did not feel comfortable tending to the system alone after 5:30, they had to drastically reduce opening hours. This set up the situation that eventually allowed for Mr. X to take over. However, later, when given the prospect of reviving the club, the three girls were eager to take part in recruiting both new members and a mentor and helped to not only recruit an additional 15 girls from across multiple grade levels but to train their peers in managing the system.

Finally, the business depended on having a secure, structurally sound place to install the solar charging hub. This meant that the girls' club needed to maintain exclusive control over their meeting space. It was also essential for that space to be secure for girls—along with the technology. While this did not always require adult supervision, regular adult presence was important for girls and their parents to feel comfortable, and for attracting business from other school adolescents.

Conclusion and Recommendations for Future Programming

Despite the challenges that the girls' clubs encountered with decisions, technology failures, and isolated mentors leaving them with limited support, the overall

experience from the two communities suggest that solar charging hubs constitute an encouraging potential anchor for both hands-on skills-building for community-based girls clubs, and for developing collective business models. To enhance the impact and ensure that there is continuity in the program's design, future programs should:

- Provide general support to a girls' club, and introduce collective solar businesses in settings where NGOs can commit to work in the community for at least two years to ensure that the business can become a functional learning and income-generating addition to safe-space clubs. While many girls' programs in Sierra Leone run for short periods, of perhaps a year, the longer duration will help: establish—and meet—expectations that the girls' club is a fixture in the community; provide sufficient time for girls' businesses to earn money; and enable the first cohort to hand off responsibilities to a younger group of girls.
- Use and expand community agreement, and identify multiple adult community representatives, including women from the community, to serve as support for the girls and their business and take part in technical trainings.
- Secure a reliable space that girls alone can control to house charging hubs.
- Integrate lessons on financial literacy and technology management throughout the project, so that girls can simultaneously build and apply skills.
- Plan for materials to break and/or be stolen by ensuring that girls' clubs and community mentors: understand equipment warranties that may entitle them to multiyear support for replacement parts; know how to access maintenance and repair services; and develop agreements to ensure that a stolen panel can be replaced, either through shared purchasing by the club, community, and NGO sponsor, or by the NGO sponsor alone.
- Expand the program to include younger girls who may take over once club members transition out or leave the community, and establish links to additional skill-building and training activities for mentors and/or older girls who remain in the community to learn repair and maintenance of solar technologies, assess market dynamics, and manage revenue and spending.

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Photo credits: Nadia Assad.

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The Population Council's Community of Practice helps strengthen the capacity of different actors to design, implement, and evaluate effective, scalable programs that build the health, social, economic, and cognitive assets of adolescent girls.

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