



## Concept Note

### Improving Learning: One light at a time



#### **CONTEXT**

Sierra Leone is one of the countries with the weakest energy infrastructure as only 26 percent of the population has access to electricity<sup>1</sup>, which is even below the Sub-Saharan average of 30 percent<sup>2</sup>. Energy consumption is largely dominated by biomass sourced from fuelwood<sup>3</sup>. This infrastructural gap has impacts across various sectors: education, health, productivity, labor market, incomes, climate, and the overall economy.

For education specifically, this has impact on learning outcomes, as the lack of electricity contributes to a non-conducive learning environment. In addition, it also limits the time children can give to their studies. Due to the lack of electricity, children are forced to wake up early in the morning at sunrise and complete their homework<sup>4</sup>. This limits their ability to learn and perform academically, thereby contributing to lower levels of human capital development.

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<sup>1</sup> [Access to electricity \(% of population\) - Sierra Leone | Data \(worldbank.org\)](https://data.worldbank.org/indicator/YS.EC.ZS?locations=SS)

<sup>2</sup> [More than 270,000 Sierra Leoneans to Get Better Access to Electricity \(worldbank.org\)](https://www.worldbank.org/en/news/press-release/2022/07/27/more-than-270000-sierra-leoneans-to-get-better-access-to-electricity)

<sup>3</sup> [Sierra Leone - Energy Infrastructure \(trade.gov\)](https://www.trade.gov/sierra-leone-energy-infrastructure)

<sup>4</sup> Focus Group Discussion with Head Teachers, Pujehun District, World Food Programme, April 2023



## **WFP SCHOOL FEEDING PROGRAMME**

WFP-led School Feeding Programme in Sierra Leone is operational in 5 of the 16 districts: Bonthe, Kambia, Karene, Kenema and Pujehun, with a coverage of approximately over 210,000 beneficiaries, across 1,031 government and government-assisted schools.

WFP provides four food commodities<sup>5</sup> to schools that are cooked into a meal and supplemented by voluntary support<sup>6</sup> from the community. This incentivizes school attendance and improves education outcomes, as well as the health and nutrition of children by providing 1/3<sup>rd</sup> of their daily caloric needs.

In select schools, a Home-Grown School Feeding (HGSF) model is followed, which is premised on supporting local production for local consumption. In these schools, one of the four commodities<sup>7</sup> is procured locally from smallholder farmers and schools are given an additional cash transfer<sup>8</sup> to purchase fresh vegetables from local farmers. This not only improves dietary diversity for the children but also provides smallholder farmers, one of the most vulnerable groups, access to a predictable market and income generating opportunities.

## **IMPLEMENTATION**

While the School Feeding Programme is designed to incentivize education, it is not the only factor that contributes to the improvement of education outcomes. The enabling environment plays a critical role in the learning quality.

### **Overview**

Unite to Light offers two products: Solar Lights and Solar Chargers. Following an informal needs assessment<sup>9</sup>, it has been determined that the usage and beneficiary will differ by product type.

- **Solar Chargers:** Head Teachers would benefit the most from Solar Charges, that will also support the implementation of the School Feeding Programme.

Under the programme, the Head Teacher is responsible for managing overall implementation, including monitoring and reporting. WFP is in the process of automating part of the data collection, by rolling out a USSD-model of monitoring<sup>10</sup> to collect data against different indicators (attendance, food/cash consumption etc.). Under this model, the Head Teacher, on a periodic basis, will use their mobile phones and input quantitative information related to school feeding activity through a USSD

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<sup>5</sup> Rice, Pulses, Oil and Salt (162 g per child per day)

<sup>6</sup> Provision of condiments, firewood, school cooks etc. by the community and overall management by Head Teachers and school Management Committee (SMC)

<sup>7</sup> Rice

<sup>8</sup> 0.5 SLE per child per day

<sup>9</sup> Focus Group Discussion, 9 Head Teachers, Pujehun, April 2023

<sup>10</sup> Unstructured Supplementary Service Data (USSD) monitoring model requires the use of a mobile phone and GSM network coverage. The user will type in a set code and send to the service provider. Against that code, a set of short questions will be generated one by one (e.g., School Name, daily attendance, daily food consumption etc.), and the user can input their answers. These answers are electronically collated through the server of the service provider.



system-based survey form. This information will be transmitted back to the WFP via service provider established API<sup>11</sup>, where it will be collated and used for reporting purposes.

One of the main challenges with this approach is that due to the lack of electricity in remote areas, the Head Teachers cannot keep their phones charged. Every couple of days, they pay a bike driver to take their phones to the nearest village (with generators) a few miles away, charge them and return some days later. This exercise is both time and cost inefficient: Head Teachers not only lose phone access for a few days but also must pay SLE 40 per trip<sup>12</sup> (approx. SLE 320 or USD 16 per month).

Solar Chargers will not only reduce cost for them, but also improve coordination and reporting for the School Feeding Programme.

- **Solar Lights:** The students would benefit most from the Solar Lights, as it would greatly increase the time they can spend on their homework and learning, beyond daylight hours. This would especially be helpful during examination season. Building on the concept of regular libraries, students can access these lights through the 'light library' model, whereby instead of checking out books from a library, they can borrow solar lights, that they can take home and use to study. This would contribute to the improvement of learning outcomes.

### **Accountability Mechanism**

- **Solar Chargers:** The Head Teachers will be provided the chargers with the caveat that the assistance is conditional upon submission of monitoring reports. Failure to submit monitoring inputs for three consecutive reporting periods will lead to a suspension of this assistance and the solar charger will be taken back and re-distributed to other schools. In addition, it will also be made clear that the chargers are assigned at the school level, and not to individuals, therefore in case of any staff relocations, the charger will be handed over to new staff.
- **Solar Lights:** The Head Teacher will have overall responsibility of the solar lights, including charging, storage, distribution, and tracking. The devices will be stored in a safe box, with a lock and key, that the Head Teacher will have. Similar to a library register, there will also be a register, that will monitor the distribution and track the return of devices. WFP will provide the tracking tools.

The number of lights per school, will depend on enrolment figures; each school will be given one light per 5 children.

To check out the light, the students will have to put down a deposit of SLE 10<sup>13</sup>, that will be refunded when they return the light. This will serve as an accountability measure. Each child will only be able to keep the light for a maximum number of 3 days at a time, and not more than 9 days per month. This will ensure that the lights are not monopolized by a few, and every child has a chance to access it.

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<sup>11</sup> Application Programming Interface

<sup>12</sup> Approximate figures

<sup>13</sup> USD 0.5



A potential challenge is expected during the rainy season (June-September), where charging the solar light may require additional time. Incidentally, this coincides with examination season (June-July) for schools.

### **Monitoring and Evaluation**

WFP has an existing monitoring system in place; process monitoring is conducted for all School Feeding schools. This can be amended to include monitoring of the process/usage of solar lights and chargers.

At the end of the academic year, a study can also be conducted to evaluate the impact, benefits, and challenges of the approach. The impact can be measured either through evaluating the change in pass-rates by grade or through evaluation of the change in test scores<sup>14</sup> (if feasible). The evaluation approach will be determined following discussions with Head Teachers on readily available data.

### **Geographical Coverage and Requirements**

WFP proposes to undertake this pilot in two districts: Bonthe and Kenema. Bonthe is a district that has significant infrastructural gaps, and hard-to-reach areas, making it the ideal place for this pilot. Selecting two chiefdoms in Kenema will provide an opportunity to conduct a robust analysis on the geo-based impact variance.

District	Chiefdom	Schools	Students <sup>15</sup>	Solar Chargers (1 per school)	Solar Lights (1 per 5 children)
Bonthe	Yawbeko	10	-	10	-
	Nongoba Bullom	12	2,084	12	417
	Kwamebai Krim	8	1,078	8	216
	Bendu Cha	4	598	4	120
	Bum	30	-	30	-
	Dema	6	1,189	6	238
	Imperri	52	-	52	-
	Kpanda Kemo	13	-	13	-
	Sittia	8	1,367	8	273
	Sogbeni	16	-	16	-
Kenema	Wandor	14	3,758	14	752
	Tunkia	27		27	-
<b>Total</b>		<b>200</b>	<b>10,074</b>	<b>200</b>	<b>2016</b>

52 schools will get one solar charger (handed over to Head Teacher) each and one solar light per five children, benefiting over 10,000 children. 148 schools will receive only one solar charger each to widen monitoring coverage and reporting.

<sup>14</sup> This approach is dependent upon availability of test records

<sup>15</sup> This number is likely to vary in the new academic year, based on enrolment numbers