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Save the Children Niger

Solar lamps – Endline Survey



Survey period: Dec/08/2016 to Dec/09/2016

Donation venue: Base de Diffa, Niger

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1. Socio-demographic characteristics of the Solar Lamps beneficiaries:

The Region of Diffa is an area very weakened by armed conflict since 2012. In addition to this tricky situation, a massive movement of population, fleeing the armed conflict between the army and the Boko Haram group in Northern Nigeria, has been observed since May 2013. The situation turned out to be drastically aggravated by the repetitive attacks of Boko Haram within the Niger territory since February 2015, along with the occupation of the Bosso city, that occurred during the month of June 2016. Additionally to the security crisis, the region has experienced serious cyclical droughts, which consequently resulted in generating a vicious cycle of poverty among the autochthonous populations. The security situation remains unstable despite significant improvements achieved towards the end of 2016, through the fight against the nebula Boko Haram. Furthermore, as per the results of the agro-silvo-pastoral campaign in 2015-2016, the region of Diffa became the poorest one of the country, in consideration of the ongoing conflict which has prevented many farmers to exploit their fields.

Three (3) sites of internally displaced persons have been selected for the targeting of beneficiaries. These are the sites of refugees of Gagam (75 beneficiaries), Boudourie (75 beneficiaries) and Garin Wanzam (100 beneficiaries). All these groups of displaced persons and refugees live in tents settled in camps of fortunes in the open air.

The main criteria for the selection of 250 households' beneficiaries of the solar lamps have made the following groups to be prioritized:

- ✓ Displaced households or hosts with children attending school;
- ✓ Households headed by a woman.

60% of the targeted households are led by a man, against 40% headed by a woman. The age of heads of households' beneficiaries varies between 30 and 70 years, with an average age of approximately 49 years. In addition, 65% of heads of households' beneficiaries are utterly illiterate, 30% have a primary educational level and 5% have reported having a secondary level. The average size of these households is nine (9) individuals. The average number of children less than five years is two (2) and that of the children from 6 to 18 years of age is four (4).

Table 1: Distribution of household beneficiaries by level of education

Level of Education (formal schooling)	Number of students	Percentage (%)
None	13	65%
Primary	6	30%
Secondary	1	5%
Arab-teaching school	0	0%

2. Data Collection Methodology.

- Sample

In accordance with the donor's request, a sample of twenty (20) beneficiaries was involved in the survey. The sample was distributed proportionally to the number of beneficiaries at each site. A simple random draw was carried out at each site from the exhaustive list of beneficiaries by calculating the drawing step. The same sample of the initial survey has to be considered for the final survey. Of the 20 beneficiaries sampled, 16 were located as to their whereabouts, and got interviewed for the final survey; and four (4) absentees were consequently replaced, including one (1) in Garin Wanzam and three (3) in Gagam. This explains the change observed in terms of the socio-demographic characteristics of the beneficiaries.

Table 2: Distribution of sample by site

Site	Total number of beneficiaries	sample	No drawing of lots
Boudouri	75	6	12
Gagam	75	6	12
Garin Wanzam	100	8	12
Total	250	20	

- Collection team

The collection team consists of the MEAL Protection Officer, the MEAL Food Security and Livelihood (FSL) Manager and the Assistant to the Protection Officer of the Diffa field office, Niger.



- **Training of data collection teams**

A translation of the questionnaire was done into French, and subsequently digitized on to the Kobotoolbox software to allow a mobile data collection system. A debriefing on the questionnaire was done with the collection team before the field trip.

- **Duration of the data collection**

The data collection was carried out over two days, in Boudouri and in an area portion of Garin Wazan (12/09/2016) over the first day and in Gagam thereafter, while the second part of the Garin Wazam zone was covered on the second day (12/09/2016).

- **Data analysis**

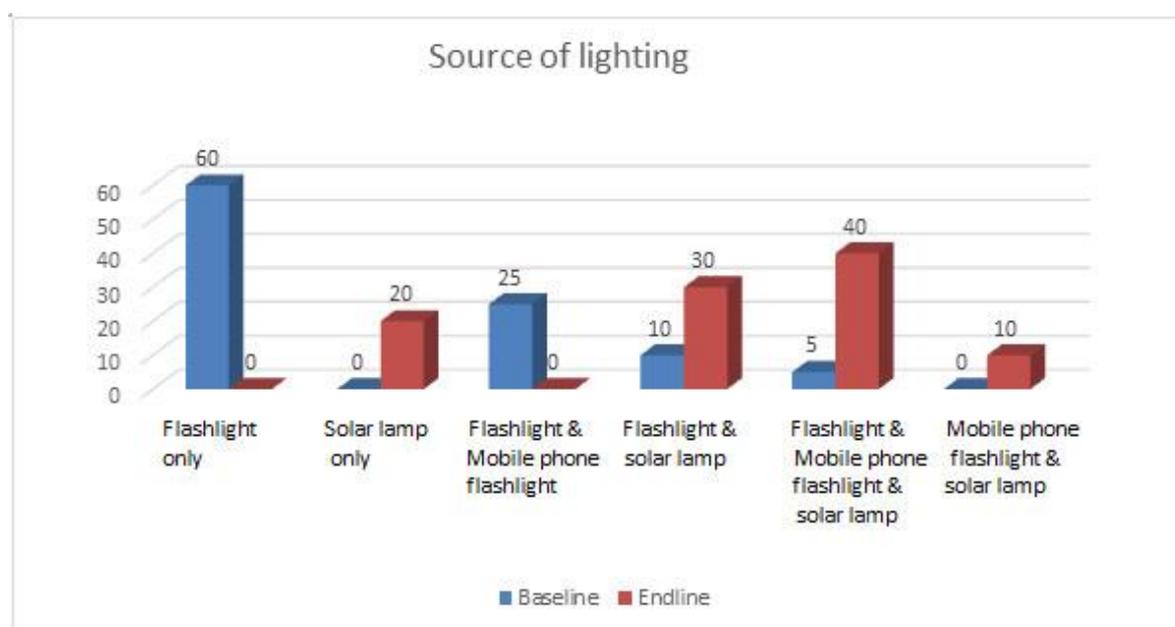
The analytical processing was done by using an Excel spreadsheet, and Word was used further down the line for the drafting of the narrative report.

3. Sources of lighting used before and after distribution

All beneficiaries interviewed (100%) were still in possession of their "Little Sun" solar lamp by the time of the final survey. Most of the beneficiaries interviewed were able to promptly exhibit their solar lamp to us when they were informed about the purpose of our visit as being in connection with that object.

The graph below shows that, at the time of the initial survey, a large proportion of beneficiaries (60%) used flashlight as a source of lighting, 25% used both flashlight and mobile phone flashlight. Significant changes have been observed two months after the distribution of solar lamps. As a matter of fact, one (1) of the beneficiaries interviewed out of five (5) claimed to be only using solar lamps as an exclusive source of lighting. Furthermore, 30% reported using concomitantly battery and solar powered lamps, there are also 40% of users that can be broken down by type of lighting source: i.e., flashlight, mobile phone flashlight and solar lamps.

Chart 1: Sources of lighting used before and after the distribution of solar lamps



80% of the beneficiaries surveyed use at least two sources of lighting. For this reason, beneficiaries were asked to specify the source of lighting they use the most. The table below shows that 60% of the beneficiaries reported having solar lamp as their main source of lighting. 30% still use flashlight as their main source of lighting compared to only 10% who use the mobile phone flashlight as their main source of lighting.

In general, households have set their favorite for the solar lamp as for children school studies and women home delivery, while male household heads use flashlight for other needs. Let it be noted that only a single lamp has been provided to each household comprising more than 7 individuals on average.

Table 3: Distribution of beneficiaries polled about the type of most used source of lighting

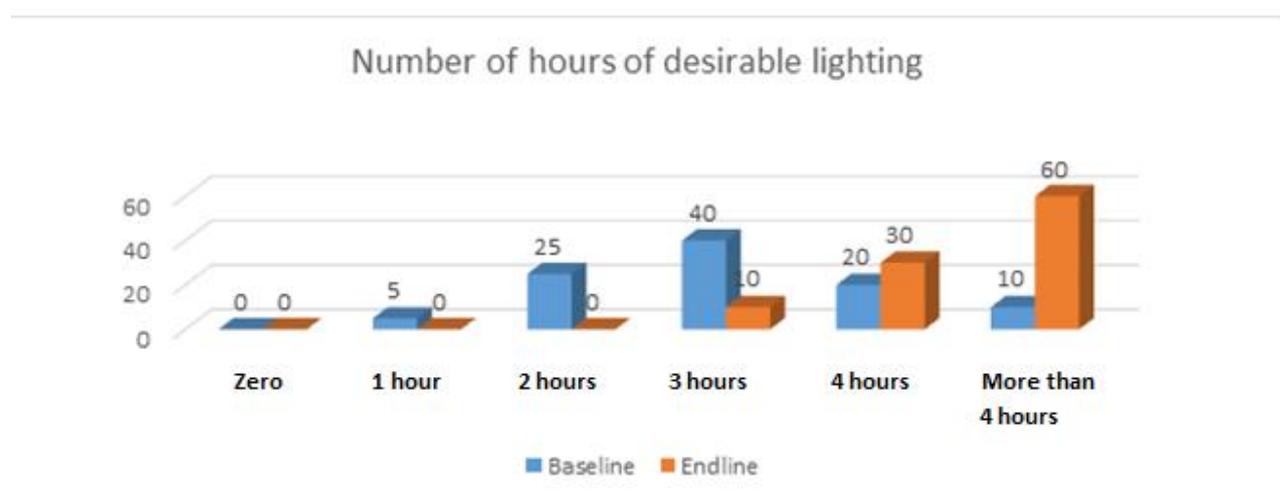
Most used Source of Lighting	Users population	Percentage (%)
Solar Lamps	12	60
Mobile phone flashlight	2	10
Flashlight	6	30
Grand Total	20	100

The graph below shows that the number of hours of lighting required has changed a great deal through the survey from the initial to the final one. In the primary survey, 40% of respondents said to be in needed of three (3) hours of lighting per night, 25% wanted two (2) hours of lighting, 20% four (4) hours of lighting, And only 10% wanted a lamplight duration of more than four (4) hours by night.

Two months after the distribution of the solar lamps, 60% of the beneficiaries wished to have more than four (4) hours of lighting per night; 30% for four (4) hours and 10% for three (3) hours. The demand for increase in the number of lighting hours duration seems to have occurred following the distribution of the solar lamps. The security situation and the state of emergency restrictions over the region are causing people to join home early by sunset, around 7:30 pm. So to speak, the only leisure left to seize remain to get back home so as to chat between family members until late hour. Given that most terrorist attacks are conducted overnight, lighting becomes a source of security for this community.

Moreover, apart from the insufficient number of hours of lighting being pointed out, the general usage made of the lamplight seems to bring about the same advantage for all the beneficiaries. More importantly, as regards the exploitation of whatever source of lighting, the targeting is focused on school children, in 80% of the cases, the use of lamplight for the purpose of serving school studies by night keeps popping up through the responses of households. Similarly, the "lamplight for work" slogan being specific to the matrons can also be observed in 25% of the cases.

Figure 2: Number of desirable hours of lighting before and after the distribution of solar lights



4. Impact of solar lamps on beneficiaries

4.1. Feedback of beneficiaries on the solar lamps in consideration of their user-friendliness and robustness

95% of the beneficiaries claim that solar lamps are very easy to use, versus only 5% who says that they find them to be somehow easy to use. Furthermore, the beneficiaries assert unanimously that these solar lamps are reliable in terms of their user-friendliness and robustness.

4.2. Economic and Social Impacts

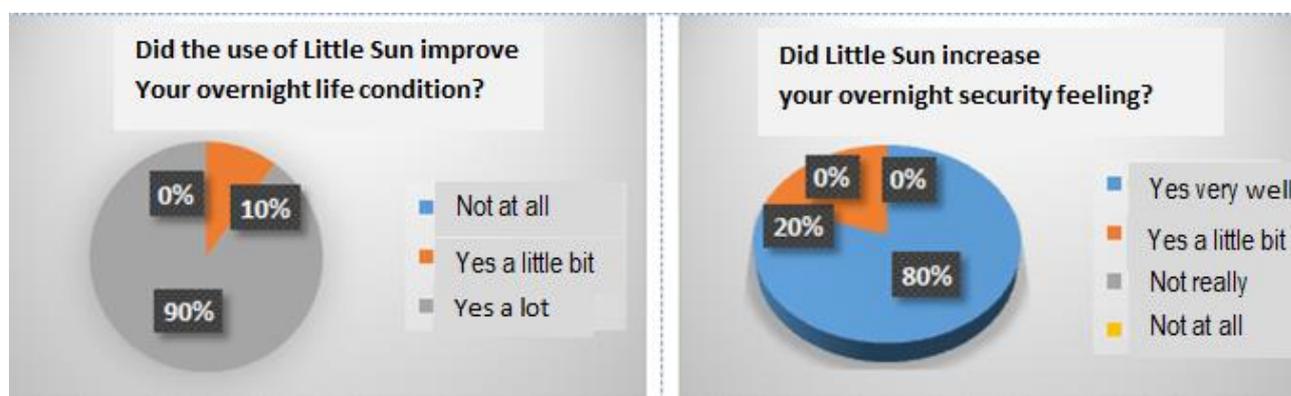
All beneficiaries surveyed (100%) say they spend less money for domestic lighting purposes since they started using the "Little Sun" solar lamp. The money saved thereby is then spent either in food or in children education or both.

The graphs below show that nine (9) beneficiaries surveyed out of ten (10) (90% of beneficiaries do believe that the "Little Sun" solar lamp has greatly improved their living conditions overnight, compared to 10% who say their living conditions have increased only a little bit. As a reminder, at the time of the initial survey, 85% of beneficiaries said they could only hardly feel safe overnight. In the final survey, 80% of the survey respondents said their security feeling at night rose positively, against 20% who say their feeling as to security conditions have increased just a bit.

In line with the same logic, 80% of beneficiaries claim to be feeling happier, and with a great feeling of existential proudness today than before the acquisition of the Little Sun solar lamp. However, it's worth noting that 5% of the beneficiaries do uphold the contrary of those who pretend being happy owing to the solar lamp which did not bring about any noticeable change in their normal way of living.

Moreover, 60% of the beneficiaries of solar lamps suffered a lot of jealousy feelings from the people around them because of them owning the solar lamp, versus 35% who suffered just a little; on the other hand, 5% of the beneficiaries claim to have not really suffered any kind of jealousy from other people not benefiting from the solar lamps.

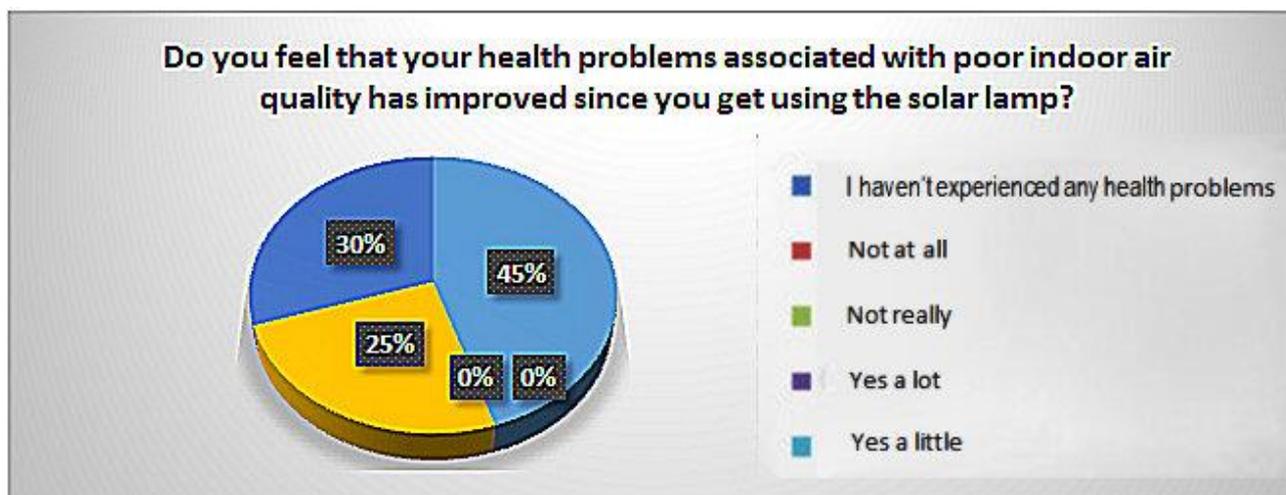
Figure 3: Living conditions and the feeling of security of the beneficiaries overnight



4.3. Impacts of Solar Lamps on Health

In the process of the baseline survey, four (4) interviewed beneficiaries out of five (5) reported suffering health problems due to poor indoor air quality (specifically as a result of smoke emanating from the consumption of wood). Of these, 68.75% reported experiencing the manifestation of pathologic symptoms such as headache, respiratory disorders and inflammatory affection of eyes. During the final survey, beneficiaries were asked if they have observed improvements since they started using the solar lamp. The chart below shows that 30% of the beneficiaries experienced kind of slight improvements, while 25% claim feeling a huge improvement in relation to the qualitative change of the poor indoor air affecting their health.

Figure 4: improvements related to the Beneficiaries' health

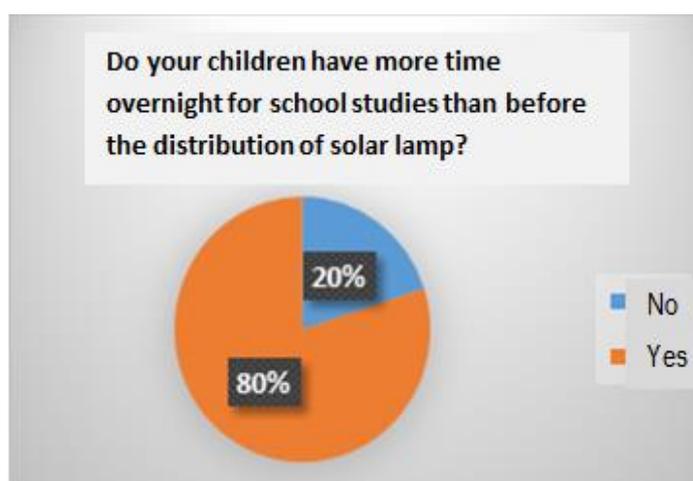


4.4. Impacts of the lamps on children's education

One of the household targeting criteria was the existence of school children within the family members. Therefore, we sought to know whether the household's use of a solar lamp was benefiting the children as regards to their ability to devote more time to school studies.

Figure 5: Increase in children's school study time at night as a result of provision solar lamps equipment

The graph below shows that, for 80% of the beneficiaries, their children can study longer at night thanks to the solar lamp. Most of these children (87%) do study an hour more than before on average.



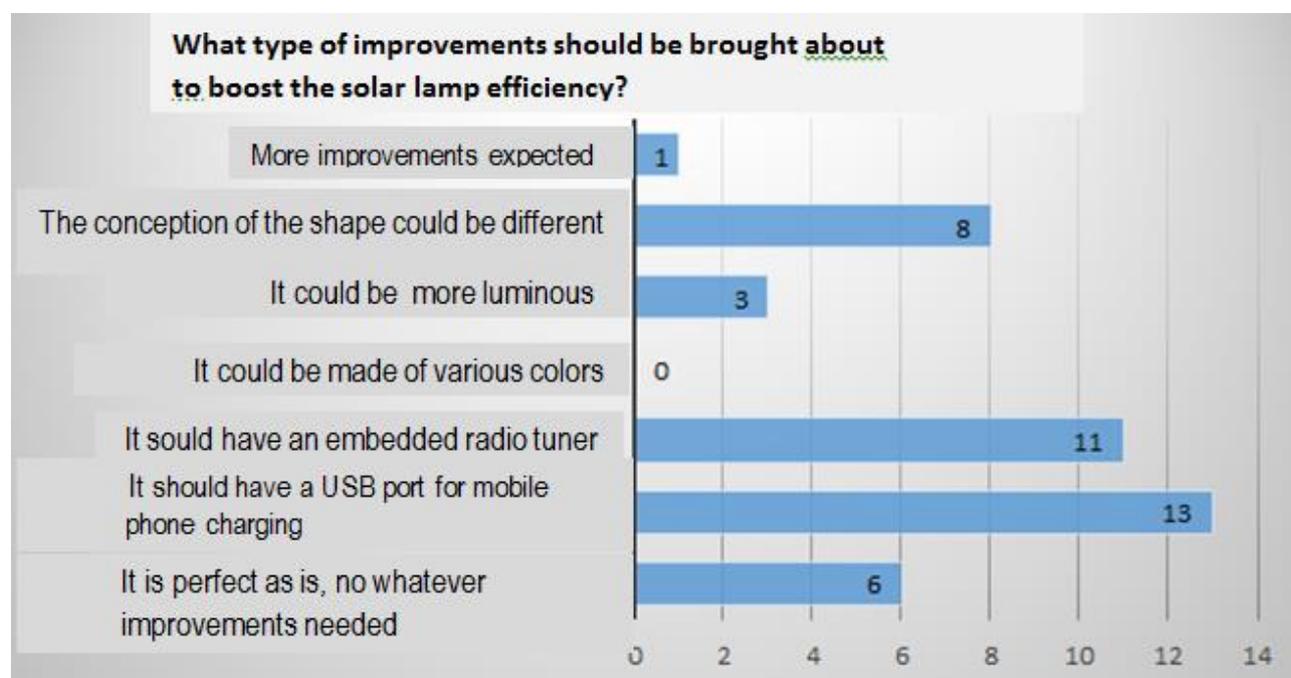
In addition, as mentioned above, all beneficiaries surveyed (100%) say the money saved thanks to the use of solar lamps is spent either in food or in children education or both.

4.5. Desirable improvements needed by the beneficiaries

All beneficiaries are also willing to recommend the "Little Sun" solar lamp to their friends and relatives. This positive feedback is probably explained by the fact that 85% of beneficiaries are fully satisfied with the use of the "Little Sun" solar lamp versus only 15% who claim to be somehow satisfied

However, when analyzing the desirable improvements as requested by the beneficiaries, it can be noticed that those improvements are basically related to 2 major aspects as follows; **a USB port for mobile phone charging and an integrated radio tuner on the "Little Sun" solar lamp.** More than half of the beneficiaries surveyed requested these two improvements. It should also be noted that 8 beneficiaries wanted a different shape/design. On the other hand, it appears that the color of the "Little Sun" solar lamp is of little importance to most of the beneficiaries considered as a whole.

Figure 6: Desirable improvements needed by the beneficiaries



Conclusion

It should be remembered that this pilot project of solar lamp distribution came up in a very hard context, especially as the targeted communities were undergoing an outbreak of terrorists' armed attacks, mostly by night. The main targets are predominantly women and children, who fled the area of Yebi and Bosso.

It appears clear that these 250 solar lamps donation in favor of the displaced or host households at the three (3) sites of Gagam, Garin Dogo and Boudouri has been an event which improved the living conditions of the beneficiaries. This statement is evidenced by the comparison between the results obtained during the initial investigation and those of the final one.

There has been indeed a behavior change in terms of the availability of lighting source for the household. Before the donation, most households used common flashlights as their primary lighting source, with obvious resulting expenses in connection to the purchase of batteries for which, 25% of the community members have to spend between 500 and 1000 CFA francs and the remaining portion of 75% less than 500 CFA francs per week. Today, thanks to the donation, most households use the solar lamp as their main source of lighting. They do not spend or spend less to buy batteries. The surplus of income saved is invested in the food stuffs or children' school education. It is probably the fact of not incurring expenses at all, or either having to spend less for accessing lighting that resulted in the increased in number of lighting hours desirable by household. According to these beneficiaries, solar lamps are very practical and easy to handle.

Moreover, the solar lamp beneficiaries themselves claimed to be safer at night, happier and more proud after the donation. In addition, with targeting focused on school children in need of protection, the donation allowed children to study longer at night.

The beneficiaries finally expressed their gratefulness for the donation, and wished to see its benefit impact extended to all displaced households, The latest statistics of the Regional Directorate of the Civil Registry of Diffa (DREC) report **241 065**, of which **121 320** internally displaced persons, along with **150,386** refugees and **14,359** returnees, or **34,438** households. Despite this pilot project's support for solar lamp

donation/distribution, the need to see the level of the donation widely increased, for the purpose of targeting more beneficiaries, is still being expressed by the community, due to the fact that only a single lamp is allocated per household of seven (7) members. The imposed state of emergency also compels people to only have to regroup between family members for discussion and for creating a common force of protection against possible attacks, murders and fires