



# LIGHT UP THE PHILIPPINES

## IMPACT ASSESSMENT

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## Executive Summary

We connected 408 d.light solar lights with some of the poorest communities in Oriental Mindoro, in the rural Philippines, working with our local partner, the Gelacio I. Yason Foundation Family Farm School Inc (GIYF-FFS). In this region, 80 percent of households have no access to electricity. These off-grid communities are keen to switch from kerosene and candles to a brighter, cheaper, and cleaner light source. In towns the electricity supply is expensive and unreliable, further driving demand for solar lights.

GIYF-FFS received the solar lights in March and April 2012, and sold them through their office, sales agents, product stalls, and during regular family visits. Customers were given the option to pay in installments, but all opted to pay in full at the time of purchase. GIYF-FFS staff who bought solar lights could elect to deduct installments from their salary.

Emily McQualter, a Kopernik fellow conducted an impact assessment of this project. She worked with GIYF-FFS to survey solar light users over one week in June 2012. At that time, 165 d.light solar lights had been sold. Of the 82 people surveyed, 25 lived in off-grid households.

The solar lights have made an immediate and tangible impact on people's lives. Of the people surveyed, 82 percent use the solar light every day, and a further 9 percent say they use it almost every day.

In households without access to electricity:

- **80 percent have stopped using kerosene for lighting**, while the other 20 percent only use a kerosene lamp to supplement their solar light, and
- **People have reduced their spending on lighting fuel by more than 50 percent** on average.

In households with access to electricity:

- Solar lights have **completely replaced** kerosene, candles and flashlights as the primary back-up lighting source, and

- People are **saving an average of US\$13.11** a month on electricity, kerosene and candles.

Across all households, the d.light solar lights have prompted greater productivity at night, particularly in off-grid communities. They allowed income generating activities to continue at night, as well as the opportunity for children to study after dark. They are also safer, as the reduced use of kerosene and candles has reduced the risk of fire. Overall, customers were very satisfied with their d.light solar light purchase.

To maximise the impact of future phases of the project, this research suggests the need to:

- Expand distribution to more remote communities, as the solar lights have the greatest impact in off-grid households, and
- Offer a price discount to off-grid communities, as the d.light solar lights may be too expensive for the average off-grid household.



*Teacher Jai surveyed solar light users in June 2012*

## Project Background

### Project Objective

Kopernik partnered with Gelacio I. Yason Foundation Family Farm School Inc. (GIYF-FFS) to make low cost, high quality solar lighting available to some of the poorest communities in Oriental Mindoro in the Philippines. GIYF-FFS developed this project, which they called the Social Enterprise Environmental Technologies (SEET) project, to both serve the community and to address the financial needs of the organization. At Kopernik this project is called Light Up The Philippines. The purpose of the impact assessment was to:

- 1) Develop a clear understanding of the status and needs of the customers,
- 2) Determine if the solar products are having a positive impact on the customers' lives, and

The impact assessment consisted of a comprehensive household survey of 82 customers who had purchased d.light solar lights, followed by analysis of the data collected.

### Snapshot of Location

*Figure 1. Map of the Philippines*



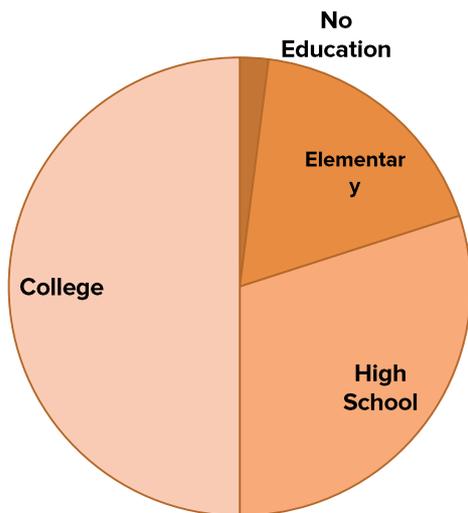
*Figure 2. Map of Oriental Mindoro*



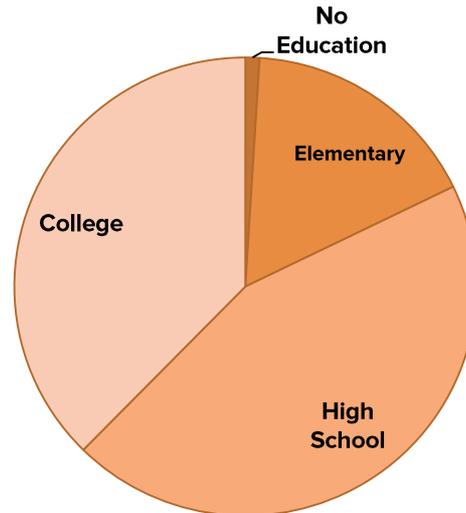
**Household and respondent characteristics**

Women made up 90 percent of the d.light solar light customers surveyed. Over 50 percent of these women had attended college. The following is a breakdown of the highest education level achieved by the respondents split by gender.

*Figure 3. Respondent's Education (Female)*



*Figure 4. Respondent's Education (Male)*



The average number of people living in the surveyed households was eight, which included children and dependents. Most households had children attending school, either elementary, high school or college.

**Employment & Income**

Among the respondents, households were primarily engaged in work associated with agriculture (61%), followed by teaching (18%), and sales, ranging from crops and produce to small-scale convenience stores (11%).

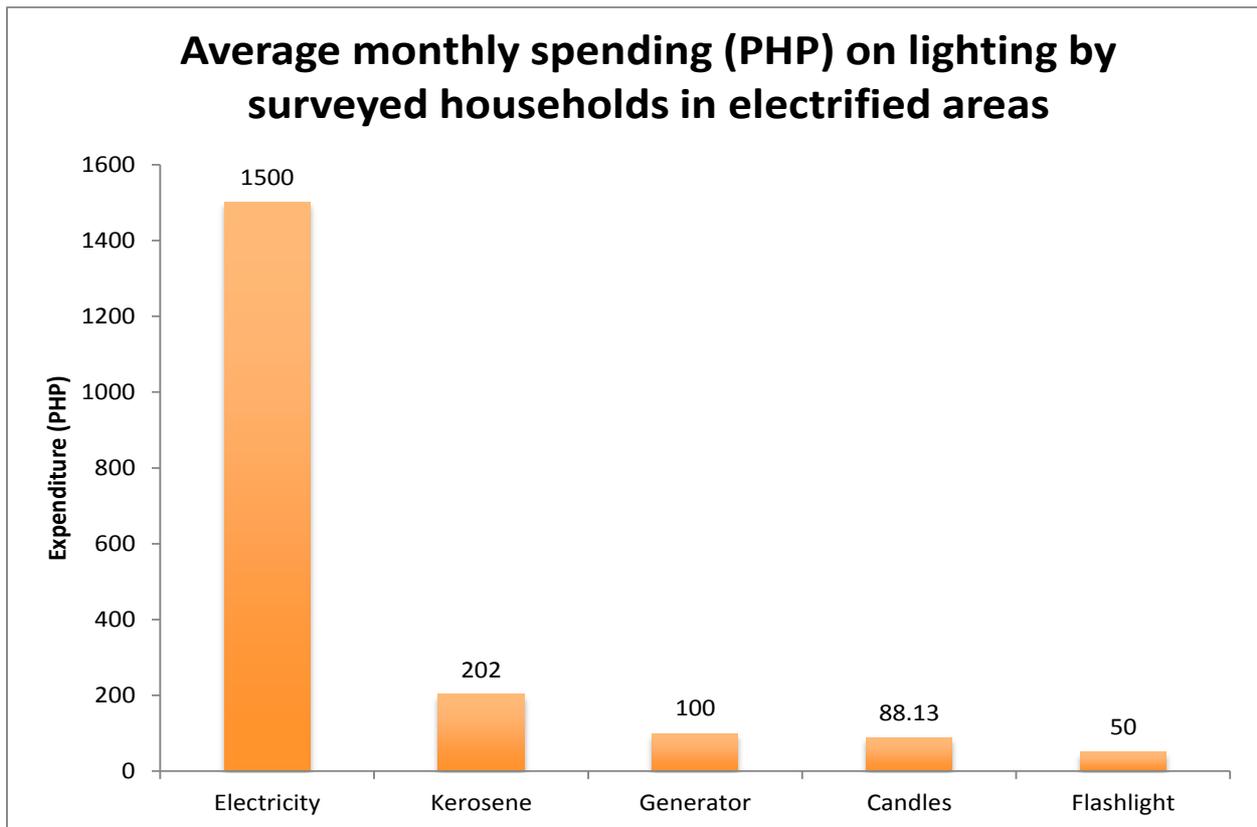
The monthly income of respondents ranged from PHP 1,000 (US\$24) to PHP 100,000 (US\$2,382) per month. There was a significant difference in monthly income between people living in off-grid communities and people living in electrified areas. The average income of the respondents living in the electrified areas was nearly seven times greater than the average income of those living in the off-grid areas.

## Common Practices Related to Technologies

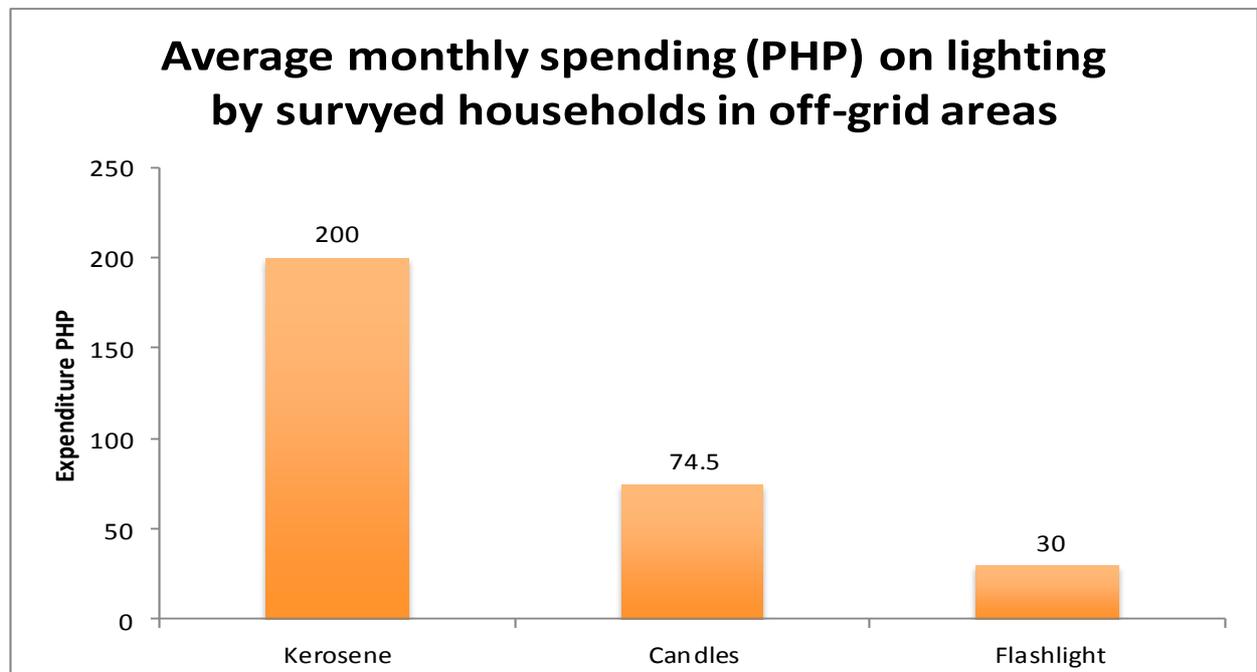
Seventy percent of respondents lived in electrified areas. Of those, all families used other sources of lighting such as kerosene (75%), candles (30%), flashlights (89%) or generators (1%) to supplement their electricity use, usually during brownouts which occur regularly. Respondents who lived in off-grid communities all used kerosene for lighting, while many also used candles (80%) and some used flashlights (30%). In electrified areas, respondents used mains-powered lighting for approximately five to six hours per night, and in off-grid communities, kerosene lamps were used for four to five hours per night.

Respondents from electrified households said they used alternatives to mains-powered lighting largely during brownouts (80%), and while cooking at night (30%). Respondents from off-grid households said they used kerosene for household lighting at night (100%) and flashlights for walking outside (30%). Respondents in electrified housing said that power shortages were their biggest concern (90%), followed by the high cost of electricity (75%) and the potential fire risk from kerosene or candles (63%). Respondents from off-grid households cited that the quality of light from kerosene and candles was their biggest concern (87%), followed by cost of kerosene (82%) and risk of fire (78%).

Respondents in electrified areas spent an average of PHP 1,500 (US\$36) per month on electricity. They also spent an average of PHP 202 (US\$4.82) on kerosene, PHP 88 (US\$2.11) on candles, PHP 50 (US\$1.19) on flashlight batteries and PHP 100 (US\$2.38) on generators (Figure 5). In off-grid communities the average monthly expenditure on kerosene was PHP 200.00 (US\$4.76), candles PHP 75 (US\$1.78) and flashlight batteries PHP 30 (US\$0.75), (Figure 6).



**Figure 5.** Average monthly spending (PHP) on lighting by surveyed households in electrified areas



**Figure 6.** Average monthly spending (PHP) on lighting by surveyed households in off-grid areas

## Our Local Partner: GIYF-FFS

Founded in 2001, GIYF-FFS is a private, non-profit alternative secondary school located in San Mariano, Roxas, Oriental Mindoro, the Philippines (see Figures 1 & 2). GIYF-FFS implements its mission through an education system rooted in holistic youth formation, sustainable and organic agriculture, community organising, enterprise development and natural health principles, which are aligned with the United Nations Millennium Development Goal for poverty alleviation.

GIYF-FFS works to alleviate poverty through a holistic approach to rural development in a way that empowers students and communities to play a responsible role in development, different aspects of community life, and in interacting with their natural environment. It is manifested in the intervention strategies that use an integrated approach to education which not only enrich theory with practice, it distinguishes them from traditional schools in the country. GIYF-FFS' program components include: Integral Youth Formation, Sustainable Agriculture (SA), Cooperative Development/Community Organizing, Integrative Health Care Systems and Enterprise Development.

One of the four pillars of a Family Farm School is an alternating home-school cycle, involving families in the education of their students and developing them to be responsible and productive members of the community. Within the Federation of the Family Farm Schools in the Philippines (PHILFEFFARS), GIYF-FFS is regarded as the most progressive alternative school.

### **Light Up The Philippines**

Light Up The Philippines is a project established in partnership with GIYF-FFS to make d.light solar lights available to communities in Oriental Mindoro. The project objectives are to provide high quality, affordable lighting and phone charging products to both electrified and off-grid communities in Oriental Mindoro. The project is rooted in the belief that energy access is one of the key building blocks of economic development and the first step to alleviate energy poverty. Light Up The Philippines aims to help low income families break

their dependence on inefficient, expensive and harmful light sources by giving them cleaner and cheaper options. The project sets out to be GIYF-FFS' first large-scale social enterprise, as part of the institution's poverty alleviation strategy.

The funds generated from the sale of the first shipment of lights will be used to purchase additional units and to expand the business into other communities and sectors. This will enable members of the community to develop income-generating opportunities, provide longer and better illumination for studying, extend productive hours in the home, reduce indoor air pollution and greenhouse gas emissions, as well as offer many cost-saving benefits from the reduced consumption of kerosene, candles and batteries for flashlights.

The GIYF-FFS High School program serves students from very low income families and provides education for minimal fees. The school relies on donations and fundraising for survival. Light Up The Philippines offers an opportunity for the school to raise funds for its lasting operations and community development programs.

### **Previous Initiative to Address the Absence of Electricity**

Based on poverty mapping conducted by the Peace and Equity Foundation (PEF) in 2006, in collaboration with Oriental Mindoro NGO/PO Network (ORNET), Bulalacao and Mansalay (see Figure 2) were identified as having the highest percentage of off-grid households. In Bulalacao, 84 percent of households are not connected to the grid followed by Mansalay at 71 percent, Bansud at 55 percent, Bongabong at 53 percent and Pola at 51 percent. Despite Oriental Mindoro's provincial government having an electrification program, the existing lines do not reach some 80% of households.

GIYF-FFS was an active project partner in the ORNET Solar Lantern Project, completed in March 2012, which offered 200 solar lanterns to off-grid households in Oriental Mindoro. The success of that project was limited by the high price of the solar lanterns, a high rate of default on loan obligations by customers who chose to pay in instalments, and poor after-sales service.

Learning from that project, GIYF-FFS aims to provide solar lights to off-grid communities and provide alternative clean energy sources to electrified communities, at a locally appropriate price, with efficient after-sales services in place.

## **Project Implementation**

### **The Technology**

The d.light S250 solar light is a white LED light equipped with an external solar panel that can also charge mobile phones. It has four brightness settings and can provide from eight to 100 hours of light after each full charge, depending on the brightness required. The product description from the manufacturer indicates that the lantern has a lifetime of five years or more when handled properly.

The d.light S10 is a high-quality solar LED lantern which offers a bright and durable replacement for kerosene lanterns. It provides even space lighting for the home, workplace, or on the go. It can function as a general light source or serve as a primary task light. Its solar panel is integrated into the lantern itself. When fully charged, it provides between four and eight hours of light depending on the brightness setting. The product's lifespan averages three years.

### **Distribution mechanism, pricing & payment**

In March and April 2012, GIYF-FFS received a total of 408 units of d.light solar lights from Kopernik (144 units of d.light S250 and 264 units of d.light S10). They set a retail price for the lights that would allow them to establish a sustainable social enterprise: PHP 1,000 for the d.light S10 (US\$23.82\*) and PHP 2,000 (US\$47.64) for the d.light S250. GIYF-FFS sold the solar lights through their office, sales agents, product stalls and during the GIYF-FFS family visits. During the first phase of the project, GIYF-FFS offered a 10 percent discount as a special promotional offer. GIYF-FFS has also implemented a marketing strategy of giving customers a 20 percent discount when buying a second d.light.

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\* Please note exchange rate 1 USD = 41.9810 PHP (<http://www.xe.com>, July 28<sup>th</sup>, 2012). This rate will be used throughout the report.

To make the d.light solar lights affordable and accessible, GIYF-FFS developed three payment options for customers:

1. Cash – People pay upfront. Most customers have purchased lights using this method.
2. Salary Deduction – available for staff members of GIYF-FFS. The staff members receive their solar light, and every month they contribute between PHP 250 (US\$6) – PHP 500 (US\$12) until it is paid in full.
3. Savings Scheme – Customers can order a d.light product and each month make a payment to GIYF-FFS for the d.light. To date no one has chosen this option.

At the time the impact assessment survey was conducted, a total of 165 units (88 d.light S10 and 77 d.light S250) had been sold.

## **Impact Assessment**

### **Process & Methodology**

Over one week (11 - 16 June 2012), 82 d.light solar light customers were surveyed for this impact assessment. Before conducting the survey, the questionnaire was field-tested with three respondents and the final survey questionnaire was then refined based on their feedback. After finishing the interviews and collating the data, Microsoft Excel was utilized to analyse the data<sup>†</sup>.

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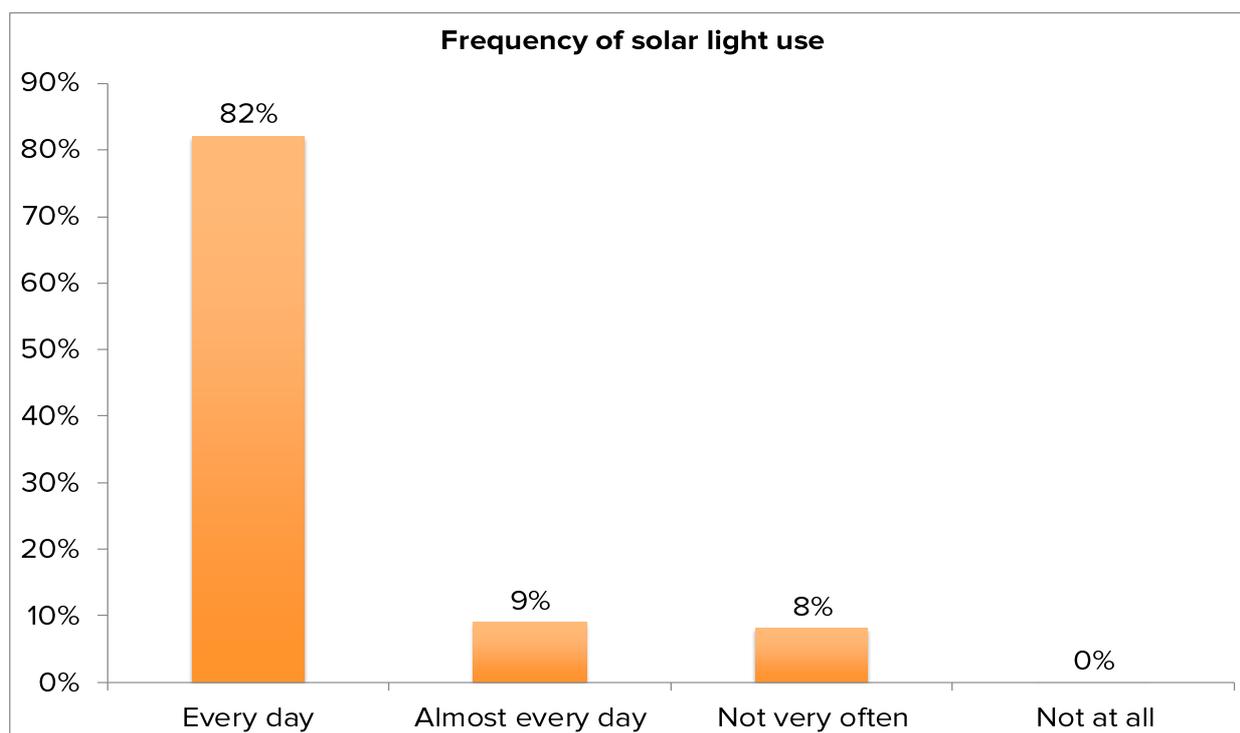
<sup>† †</sup> A confidence interval with  $\alpha=0.10$  was created for results that dealt with binomial proportions and Student's T-statistic to provide an outlook that is more reflective of the overall population.



*Emily interviews Maricel Diado about her d.light S10 purchase*

## Results of Impact Assessment

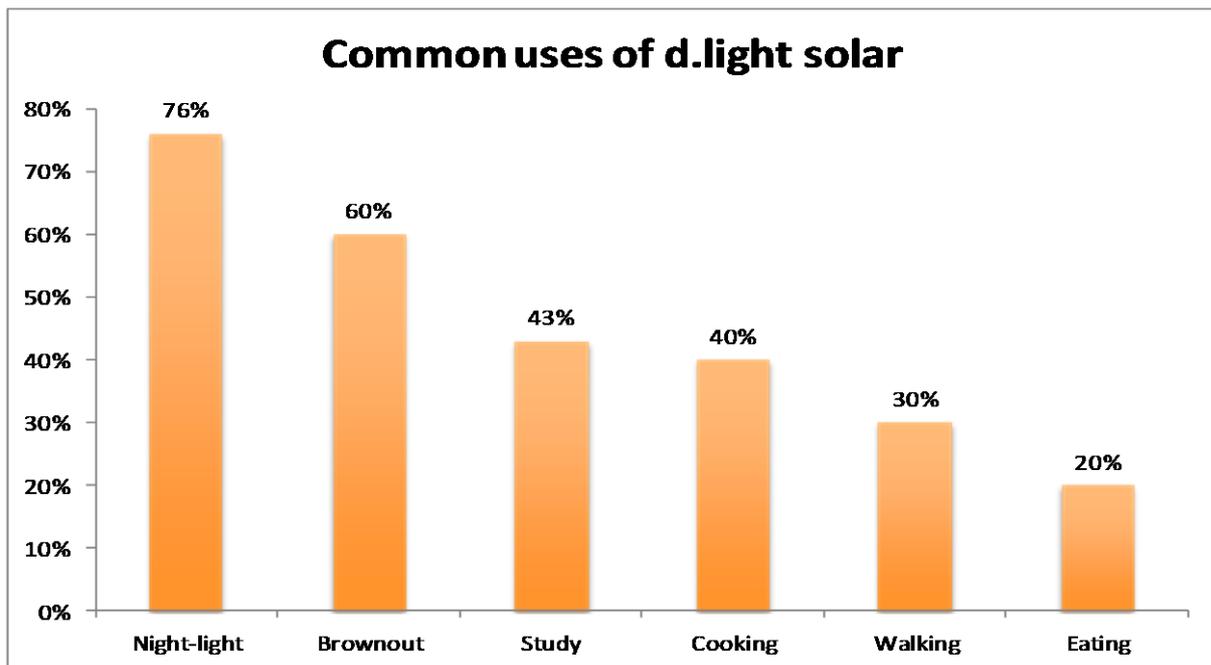
When asked what factors have led people to buy d.light respondents in electrified areas, users reported that they bought the product to save money, as an alternative lighting source during power shortages and to use as a night light while sleeping. In off-grid communities, the primary reason for buying the d.light was to provide a safe alternative form of lighting that would save them money. Eighty-two percent of all respondents (both in electrified and off-grid areas) said that they used the d.light solar S10 or S250 every day, 9 percent cited that they used the product almost every day and 8 percent said not very often (Figure 7).



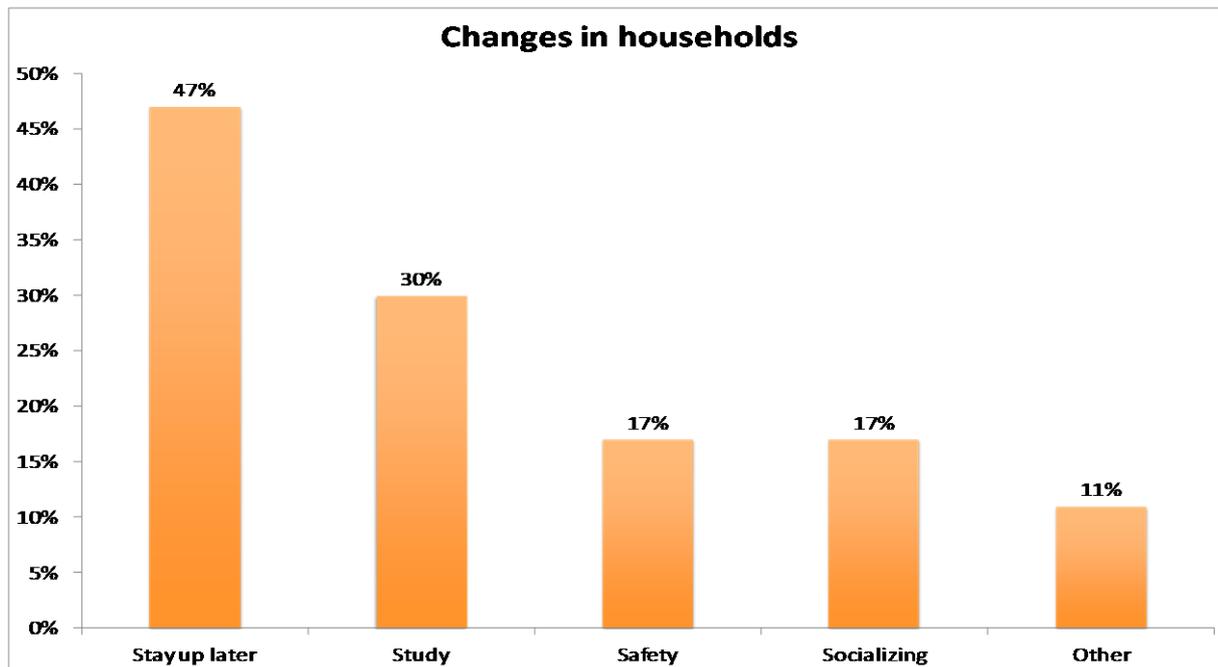
**Figure 7.** How often respondents use their d.light solar light

Respondents most commonly used their solar light as a night-light (76%), followed by use in emergencies ie brownouts (60%). Other uses included studying, walking at night, cooking and eating (Figure 8).

The most common changes noted by respondents in regards to their households after the purchase of a d.light solar light, included staying up later to work, children being able to study at night, feelings of safety, saving money and socializing at night (Figure 9).



*Figure 8. Common uses of d.light solar*



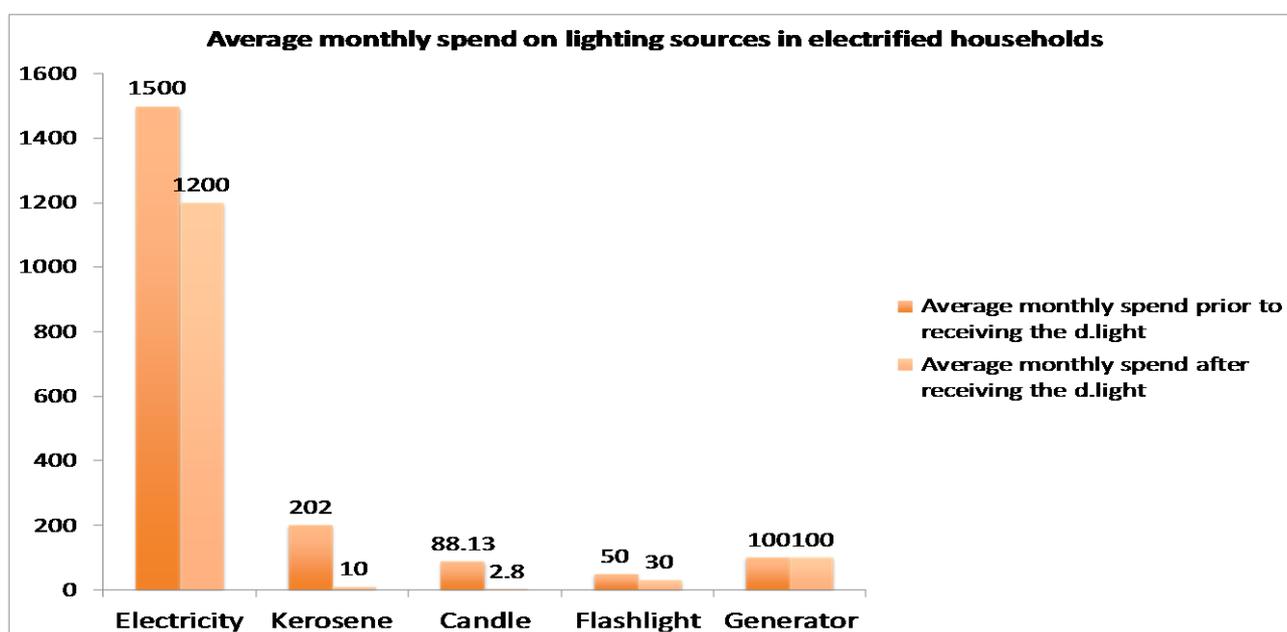
*Figure 9. Most common changes in households after the purchase of d.light solar.*

Only 50 percent of respondents that had purchased the d.light S250 had used the cell phone-charging feature. Ninety percent of those respondents who had used the cell phone charging capability were from off-grid communities.

Of those respondents who lived in electrified communities, 100% of them continued to use electricity after the purchase of the d.light. However, 99% of respondents stopped using kerosene, candles and flashlights after their purchase of the d.light. In the off-grid communities, 80% of respondents stopped using kerosene, but a few still used it as a lighting source in other rooms of their house or kept it in case the solar light ran out of charge.

In electrified communities, respondents cited that they were saving money on their electricity bills (an average of PHP 300.00, US\$7 a month). These savings along with the money saved from ceasing use of kerosene and candles roughly equaled PHP 550 (US\$13) a month (Figure 10).

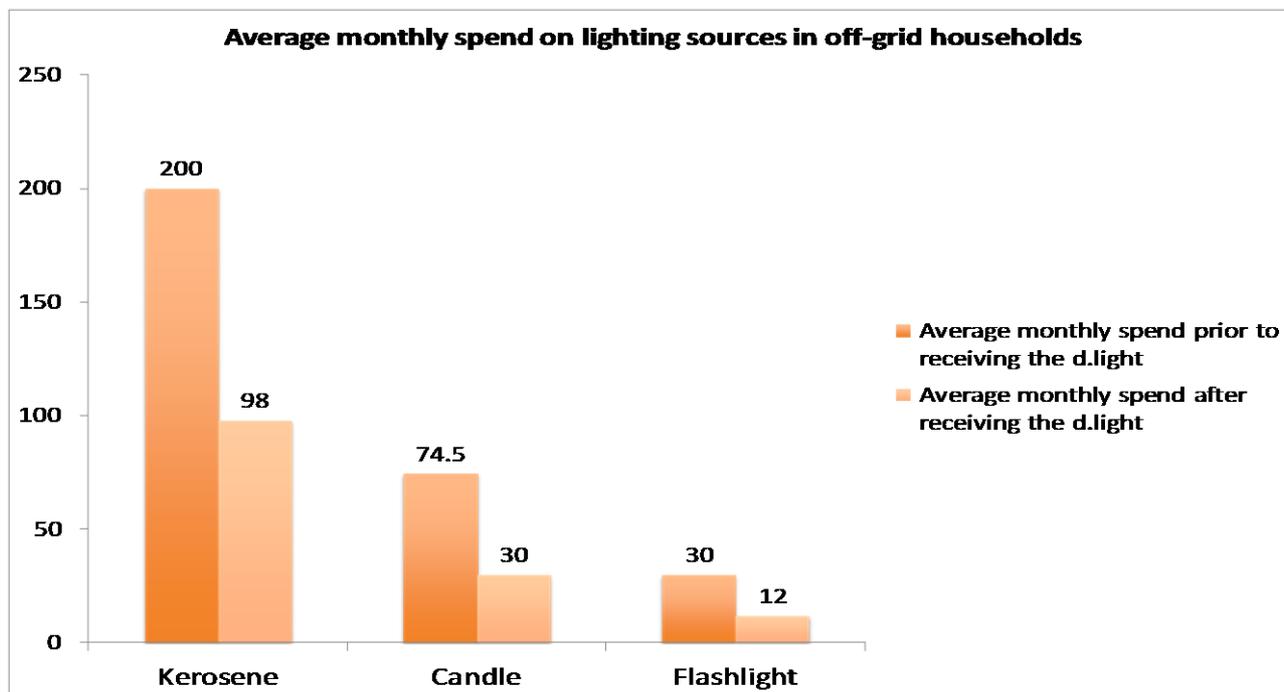
Respondents who cited using the solar lamp as a night-light where previously they needed to use electricity or used no light at all, suggests a change in behavior for many electrified households.



**Figure 10.** Average monthly spend on lighting sources in electrified households prior to and after the purchase of d.light.

The changes observed in off-grid respondents' households were often more significant. Respondents could stay up later to conduct income-generating activities and children could

study at night. Respondents were saving at least 50% of what they usually spent on kerosene, candles and flashlight batteries every month (Figure 11).



*Figure 11. Average monthly spend on lighting sources in off-grid households prior to and after the purchase of d.light.*

## Conclusions

This impact assessment demonstrates that the greatest impact observed was with respondents from off-grid communities. The users in these regions have dramatically reduced their use of kerosene and candles, continuously saved money and reported feeling safer because of the reduced risk of fire. Respondents can participate in income generating opportunities and provide a better study environment for their children after dark. Respondents in electrified areas have a better light alternative during power shortages and use their d.light products as a convenient night-light source. Most respondents in electrified areas have completely stopped using kerosene and candles in their homes.

Interestingly, most respondents in electrified areas preferred the d.light S250 product at time of purchase over the S10 because of the d.light S250's phone charging capabilities.

However, almost none of the respondents had used that function. In the off-grid communities the phone charger was used in nearly all instances and was a major talking point. Many respondents cited that they didn't have to walk to friends' houses to charge their cell phones anymore after the purchase of d.light S250.

When examining the income of respondents it appears that Light Up The Philippines is reaching a majority of customers in an income bracket of PHP 5,000 (US\$119) – PHP 100,000 (US\$2,382). However the product is having a bigger impact in the lives of respondents in the income bracket of PHP 1,000 (US\$24) – PHP 4,999 (US\$119), who in most cases live in off-grid communities. This suggests that the sales price may be too high for the lower income members of the community or the marketing strategy is ineffective at reaching this demographic.

After the results of this impact assessment GIYF-FFS has developed a social pricing mechanism. Customers that have a family income of less than PHP 4,999 (US\$119) per month can purchase the d.light S10 and d.light S250 at just above cost price (30% discount).

A partnership with the Mangyan Mission, a church-based non-government organization which assists the Indigenous Peoples of Oriental Mindoro, has been developed to get access to the more remote communities of Oriental Mindoro.

## Annex

### Case Studies

#### Tessie Rubaya

Tessie Rubaya (55 years old), lives with her husband, seven children and one grandchild in San Mariano, Roxas, Oriental Mindoro. Tessie and her husband have a small farm, and she gains occasional employment working in the rice fields. She lives in the off-grid area of San Mariano and uses kerosene and candles to light her home. Tessie heard about the d.light solar lights during one of the GIYF-FFS family visits and decided to purchase two d.lights, one S10 and one S250. She has found that the d.light S250's lowest setting that lasts for 100 hours is a good night light in her house. She cited that her family now has sufficient light while cooking, can even read at night and don't need to go to other peoples houses to charge their cell phones. Tessie's husband was looking at the d.light box and saw a picture of a figure farming at night, he thought this was a good idea, as he finds it very hot during the day to do many tasks. He has now started tending to the garden, checking the animals and harvesting rice at night using his d.light.



### **Elsie Saron**

Elsie (46 years old) is a staff member of GIYF-FFS. She assists with cooking for the staff and students and helps to maintain the vegetable gardens. Elsie is a single parent, with six daughters who live in an off-grid squatting community in San Mariano, Roxas. Elsie purchased a d.light S250 using the GIYF-FFS salary deduction scheme. She chose to purchase the light using this scheme because she was able to get the product up front and pay for it over a four-month period. This allowed her to save a little of her salary every month to pay for the light.

Elsie and her family use the d.light S250 every night to read and do household chores. Previously they used a kerosene lamp. Elsie says that the d.light S250 is so much brighter than her old kerosene lamp. With the kerosene lamp, the children had to study by themselves because the light was so poor, but now with the bright solar light her children can study together in a group. Elsie also says she doesn't need to use kerosene at all anymore, saving her money every week. Elsie also conducted a d.light product demonstration for her neighbours.



### **Rose Nicademus**

Rose is 32 years old and is a single mother with two children. Rose is currently unemployed and lives with her father and mother in a small two-roomed house in an off-grid community in Maraska, Roxas, Oriental Mindoro. Rose's mother suffered a stroke and now cannot move the left side of her body. Rose takes her children to elementary school and helps her father care for her mother. Rose purchased the d.light S250 to help care for her mother. She says the light helps her family immensely. Her mother can use the light at night to help her find things in the dark and if her mother needs any assistance, Rose can use the d.light S250 instead of using kerosene. Rose also cited that before they purchased the solar light they had to walk to friends houses to charge their cell phones, now they can just use the d.light to charge their phones.



**Benjamin Naboa**

Mr. Naboa (74 years old) is a retired Municipal Agrarian Reform Officer. Mr. Naboa heard about Light Up The Philippines through a friend and thought having a solar light in his house would be helpful during brownouts, which occur commonly in his barangay (village). Mr. Naboa cited that he uses the d.light S10 every day, especially as a night-light and when he goes to visit friends. After buying the d.light S10 he has stopped buying kerosene and candles. He likes that the d.light S10 is so straight-forward and easy to use.



**Pala Diado**

Ms Diado (65 years old) is from the Hanunuo tribe of indigenous peoples from Oriental Mindoro. Pala has 14 children, most of whom have grown up, but she still looks after her youngest two children and grandchildren in a small traditional off-grid house in barangay San Roque, Bulalcao, Oriental Mindoro. She is a farmer and grows and sells bananas and coconut and owns a few cows. Before purchasing her d.light S250 she used kerosene lamps in her home and a flashlight at night. She cited that kerosene was expensive and lamps would often be blown out by the wind. Her daughter-in-law, Maricel, uses the d.light S250 on the low setting so that she can breast feed her child during the night.



**Mrs. Hedy Yason**

Mrs. Yason (63 years old) is the Board Chairperson of the Gelacio I. Yason Foundation Family Farm School and her late husband was also the founder. She purchased a d.light S10 and uses it for reading at night. She likes the d.light S10 because it is so easy to use and if she needs to get up in the night she can just reach for her solar light. Since buying her first light she has also bought solar lights for all her children and two grandchildren.

**Mrs. Melissa Catapang**

Melissa is a staff member at GIYF-FFS. She purchased the d.light S250 with the salary deduction scheme. After purchasing the light, she says she feels safe going outside at night. She has stopped using kerosene and candles and doesn't need to worry about the risk of fire anymore, and she even gave away her flashlight. Melissa cited that her daughter also loves to use the solar light to read at night.



**Mrs. Daisy Tambuon**

Mrs. Tambuon works in sales, selling electrical appliances around Oriental Mindoro. She started selling d.light solar lights for GIYF-FFS in May 2012 after she had to travel to Manila to pay for one of her children's college expenses. That month she spent a lot of money and as a result her electricity was cut-off by the electrical company. She borrowed a d.light S250 from her daughter-in-law and was convinced that the d.light solar light was a fantastic product as it got her through the month without electricity. She says that the d.light products are very easy to sell, because there is a need in the community and that the product is affordable. Since she started selling the d.light products she has been able to save to buy a side cart for her motorbike. She can now drive around with the d.light solar lights in tow and can even take her granddaughter along with her so that she can babysit at the same time.

# Sample Questionnaire



GIYF-FFS Social Enterprise Environmental Technologies (SEET)  
Solar lighting Rapid Impact Assessment

**Interviewer:**

**Date:**

<b>PART I: Household and Respondent Characteristics</b>	
<b>1.1</b> Name:	<b>1.2</b> Address:
<b>1.3</b> Age:	<b>1.4</b> Gender:
<b>1.5</b> Education:	
<b>1.6</b> Contact No.	
<b>1.7</b> Martial Status	<input type="checkbox"/> Married living together <input type="checkbox"/> Separated <input type="checkbox"/> Single parent <input type="checkbox"/> Widowed <input type="checkbox"/> Other
<b>1.8</b> How many people live in your residence?	
<b>1.9</b> How many children do you have?	<b>1.10</b> How many dependents?
<b>1.11</b> Number of household members who are not of school age?	
<b>1.12</b> Number of household members who are studying?	<input type="checkbox"/> Elementary <input type="checkbox"/> High School <input type="checkbox"/> College <input type="checkbox"/> Post Graduate
<b>1.13</b> What is your occupation and main source of income?	
<b>1.14</b> Do you have anyone else in your household who is employed and has a source of income? (please describe type of work)	
<b>1.15</b> What is your families monthly income?	
<b>1.16</b> What are the biggest challenges your household is facing?	<input type="checkbox"/> Food <input type="checkbox"/> Education <input type="checkbox"/> Clean water <input type="checkbox"/> Electricity and Fuel <input type="checkbox"/> Healthcare <input type="checkbox"/> Transportation <input type="checkbox"/> Financing (Credit/Savings) <input type="checkbox"/> Other (Please specify)
<b>PART II: Baseline</b>	
<b>2.1</b> What energy source were your family using before your purchase of the solar light? (Please circle more than one	<input type="checkbox"/> Electricity <input type="checkbox"/> Kerosene <input type="checkbox"/> Candle

response if applicable)	<input type="checkbox"/> Flashlight <input type="checkbox"/> Generator <input type="checkbox"/> Other (please specify) <input type="checkbox"/> No lights
<b>2.2</b> How many hours did you use your previous source of lighting?	<input type="checkbox"/> Electricity = <input type="checkbox"/> Kerosene = <input type="checkbox"/> Candle = <input type="checkbox"/> Flashlight = <input type="checkbox"/> Generator = <input type="checkbox"/> Other (please specify) =
<b>2.3</b> What were the problems you found with your previous sources of lighting? (circle all that apply)	<input type="checkbox"/> No problems <input type="checkbox"/> Poor light quality <input type="checkbox"/> Unpleasant smoke <input type="checkbox"/> Risk of fire <input type="checkbox"/> High cost <input type="checkbox"/> Health problems <input type="checkbox"/> Dirt inside nose or on face <input type="checkbox"/> Others (specify)
<b>2.4</b> How much did your family spend on your lighting source prior to receiving the solar light per month?	<input type="checkbox"/> Electricity = PHP <input type="checkbox"/> Kerosene = PHP <input type="checkbox"/> Candle = PHP <input type="checkbox"/> Flashlight = PHP <input type="checkbox"/> Generator = PHP <input type="checkbox"/> Other = PHP
<b>PART III: Use of Technology</b>	
<b>3.1</b> What model(s) of d.light product do you own?	
<b>3.2</b> How many d.light solar products do you own?	
<b>3.3</b> What factors led you to buy a d.light solar light?	
<b>3.4</b> What do you use the d.light solar light for? (e.g. cooking & study)	
<b>3.5</b> How often do you use the solar light?	<input type="checkbox"/> Everyday <input type="checkbox"/> Almost everyday <input type="checkbox"/> Not very often <input type="checkbox"/> Not at all
<b>3.6</b> If you use the solar light, how many hours per day do you use it for?	
<b>3.7</b> If you own the d.light S250 how often do you use the mobile charging capability?	

<b>PART IV: Changes</b>	
<b>4.1</b> Do you still use Kerosene or other means of lighting that was used prior to your purchase of the solar light?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<b>4.2</b> If you answered yes to the above question can you explain in more detail why you still use other forms of lighting?	
<b>4.3</b> How much do you spend for your alternative forms of lighting per month after your purchase of d.light solar?	<input type="checkbox"/> Electricity = PHP <input type="checkbox"/> Kerosene = PHP <input type="checkbox"/> Candle = PHP <input type="checkbox"/> Flashlight = PHP <input type="checkbox"/> Generator = PHP <input type="checkbox"/> Other (please specify)
<b>4.4</b> Please describe any changes since you received the lantern to your household activities?	
<b>PART V: Feedback</b>	
<b>5.1</b> Overall, how would you rate the usefulness of the technology?	<input type="checkbox"/> Very effective <input type="checkbox"/> Effective <input type="checkbox"/> OK <input type="checkbox"/> Not so good <input type="checkbox"/> Poor
<b>5.2</b> What do you like most about the product and do you have any suggestions for improvement?	