JEEViKA
An Initiative of Government of Bihar for Poverty Alleviation
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State Rural Livelihoods Mission, Bihar
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Energy Securtiy Credit and Solar Process Guidelines

ENERGY SECURITY CREDIT

Introduction

Energy services are one of the most fundamental and taken for granted elements of our modern infrastructure and missing them has a profound impact on the ability of a population to make progress towards poverty alleviation and basic economic development. The introduction of even a limited source of electrical power to these communities can have immediate and significant economic, educational, and health benefits — enabling better education for children and higher productivity for working adults by providing high-quality, non-polluting lighting, enabling information and communication advantages by providing cell-phone charging options, a technology which is accelerating advances in myriad ways across the developing world and improving health through reduced consumption of smoke from kerosene lamps which is still a major source of lighting in our rural areas.

Renewable Energy Technology based interventions like Solar-photovoltaic (PV) panel based micro grids and home lighting systems could be an outstanding solution for providing the first wave of electrification for these communities. Often the nearest established electric utility grid for a rural village is prohibitively far away and costly to connect to, and the only realistic option is for local generation. In these cases, solar panels provide a scalable, clean, reliable, renewable, and increasingly cost competitive source of electricity for these communities.

Energy Security Credit is an innovative financial "credit" product that provides a single window within a Cluster Level Federation (or CLF) for financing of Clean Tech Interventions like solar photovoltaic based energy systems and recovery /repayment of the outstanding credit, thus making it accessible for the poorest. It has three core elements:

1. Micro Credit Planning: In this process, household energy demand and corresponding credit requirement is estimated in a participatory manner at the SHG level and then further collated (or aggregated) at VO and subsequently at CLF level. Aggregation of demand facilitates standardization of the energy systems at CLF level.
2. Financing: This involves offering of a loan or credit to the village organization to finance the purchase, installation and commissioning of Solar-photovoltaic (PV) panel based energy systems. The loan is repaid to the village organization in easy installments by members of the SHGs.
3. After sales and maintenance mechanism:

Objectives of the Energy Security Credit

- To enable the poorest of the poor to have the access to affordable and reliable power to meet their basic energy needs and reduce the vulnerability of the poor households to energy poverty.

The Process

The Energy security credit program would be taken up with interested CLF/Village Organization (VO) that has met the following conditions:

1. The VO is at least 3 months old.
2. The VO has a Bank Account.
3. The VO has proper maintenance of the books of records
4. The VO can use the existing CIF funds for energy security credit.
5. The CLF can demand CIF from DPCU based on the micro-planning, if VO doesn't have CIF.

Stage	Process	Time for the Process to be completed
Preparatory activities after the trigger	Concept sharing for Solar photo-voltaic based energy systems, Exposure visit to VOs where similar energy interventions have been implemented, energy security credit.	
Aggregation of demand for energy and credit	Each SHG holds a meeting with the members to prepare a Micro Plan to estimate the energy demand and credit requirement of each member's household. A very simple format for the same is given in Annexure 1. During Village organization meeting all the SHGs presents their Plans. The VO then aggregates and finalizes the demand from SHGs. The CLF then aggregates and finalizes the demand from VOs.	
Credit Access	CLF would then present the aggregated demand to BPIU along with an application to the BPIU for sanction of loan. The format is provided in Annexure 2.	
Loan disbursement	After the recommendation from BPIU and approval from DPCU, the funds will be disbursed from DPCU to CLF. Loan disbursement formats to SHG members are provided in Annexure 3, 4 and 5. The CLF will disburse the amount to the supplier or to the VO as appropriate.	
Installation and Commissioning		
Repayment recovery of loan	In the VO meeting, the SHG members determine the repayment installment and period based on cash flow of SHG members.	

Financing Mechanisms

- Transfer of funds to the CLF: The DPCU will provide CLF a onetime revolving fund which would be used repeatedly for the intervention. An amount corresponding to the aggregated demand from the micro planning would be transferred to the CLF.
- Repayment Period: Given the fact that a majority of households are dependent on agriculture labor and that agriculture is a seasonal activity, income reduces substantially during the months of September to November and Feb to April. Thus when fixing the repayment period, fluctuation in income level should be taken into consideration i.e., the repayment level should be fixed in such a way that the household will be able to repay without "distress" even during the period of low income. However it needs to be ensured that there is some amount of repayment every month.

  Also, within six months if there is non-repayment or default in repayment from any member then the energy security credit will be converted to general loan for the defaulting member. This will enable the VO to transfer the full amount to CLF in designated time, which will be further utilized for giving energy security credits to other CLF/VOs.

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Annexure 1: Micro planning format and Demand Aggregation at VO

ग्राम संगठन :

क्रमांक	सदस्य का नाम	समूह	जमा राशि

(अध्यक्ष)	(सचिव)	(कोषाध्यक्ष)

Annexure 2: Demand Aggregation at CLF

संकुल स्तरीय संघ :			
क्रमांक	ग्राम संगठन का नाम	सदस्य सांख्य	जमा राशि

(अध्यक्ष)	(सचिव)	(कोषाध्यक्ष)

Annexure 3: Loan Format (member to SHG)

सेवा में,

अध्यक्ष महोदय

..... जीविका स्वयं सहायता समूह

ग्राम .....

पंचायत .....

विषय :– सौर ऋण उपलब्ध कराने के संबंध में।

महोदय विनम्र पुर्वक कहना है कि मैं ..... जीविका महिला स्वयं सहायता समूह की सदस्य हूँ मुझे सौर उर्जा लगाने हेतू Rs. ..... शब्दो में .....रुपये की आवश्यकता हैँ। इसलिए मुझे समूह से ऋण उपलब्ध करायी जाय एवं उक्त राशि को समूह के माध्यम से सम्बन्धित सौर उर्जा कम्पनी को भुगतान कर दी जाय। समूह द्वारा उपलब्ध ऋण की राशि को मेरे द्वारा समूह को ..... सामान मासिक किस्तों में भुगतान की जाएगी।

अतः महोदय से नम्र निवेदन है कि उपर्यूक्त बातों को ध्यान में रखते हुए ऋण की राशि उपलब्ध कराने की कृपा की जाय।

आपकी विश्वासी सदस्य

नाम .....

पति का नाम .....

Annexure 4: Loan Format (SHG to VO)

सेवा में,

अध्यक्ष महोदय

..... जीविका महिला ग्राम संगठन

ग्राम .....

पंचायत .....

विषय :– सौर ऋण उपलब्ध कराने के संबंध में।

महोदय विनम्र पुर्वक कहना है कि मैं ..... जीविका महिला स्वयं सहायता समूह की अध्यक्ष हूँ। हमारे समूह में कुल ..... सदस्य के द्वारा मुझे सौर उर्जा लगाने हेतू Rs. ..... शब्दो में ....रुपये की आवेदन आया है जिसके आधार पर हमारे समूह को ग्राम संगठन के द्वारा Rs. ..... शब्दों में .... ऋण उपलब्ध करायी जाय एवं उक्त राशि को ग्राम संगठन के माध्यम से सम्बन्धित सौर उर्जा कम्पनी को भुगतान कर दी जाय। ग्राम संगठन द्वारा उपलब्ध ऋण की राशि को मेरे समूह के द्वारा ग्राम संगठन द्वारा को ..... सामान मासिक किस्तों में भुगतान की जाएगी।

अतः महोदय से नम्र निवेदन है कि उपर्यूक्त बातों को ध्यान में रखते हुए ऋण की राशि उपलब्ध कराने की कृपा की जाय।

संलग्नक

आपकी विश्वासी सदस्य

1. बैठक की छायाप्रति
...
2. आवेदन की छायाप्रति

अध्यक्ष.....

सचिव .....

कोषाध्यक्ष .....

समूह का मुहर

Annexure 5: Loan Format (VO to CLF)

सेवा में,

अध्यक्ष महोदय

..... संकुल स्तरीय संघ

ग्राम .....

पंचायत .....

विषय :– सौर ऋण उपलब्ध कराने के संबंध में।

महोदय विनम्र पुर्वक कहना है कि मैं ..... जीविका महिला ग्राम संगठन की अध्यक्ष हूँ। हमारे ग्राम संगठन में कुल ..... सदस्य के द्वारा मुझे सौर उर्जा लगाने हेतू Rs. ..... शब्दो में ....रुपये की आवेदन आया है जिसके आधार पर हमारे ग्राम संगठन को संकुल स्तरीय संघ के द्वारा Rs. ..... शब्दों में .... ऋण उपलब्ध करायी जाय एवं उक्त राशि को संकुल स्तरीय संघ के माध्यम से सम्बन्धित सौर उर्जा कम्पनी को भुगतान कर दी जाय। संकुल स्तरीय संघ द्वारा उपलब्ध ऋण की राशि को मेरे ग्राम संगठन के द्वारा संकुल स्तरीय संघ को ..... सामान मासिक किस्तों में भुगतान की जाएगी।

अतः महोदय से नम्र निवेदन है कि उपर्यूक्त बातों को ध्यान में रखते हुए ऋण की राशि उपलब्ध कराने की कृपा की जाय।

संलग्नक

आपकी विश्वासी सदस्य

1. बैठक की छायाप्रति

अध्यक्ष.....

2. आवेदन की छायाप्रति

सचिव .....

कोषाध्यक्ष .....

संघ का मुहर

Annexure 6: Application (CLF to BPIU)

आवेदन पत्र

सामुदायिक निवेश निधि (उर्जा सुरक्षा) हेतू आवेदन पत्र (संकुल स्तरीय संघ)

सेवा में,

प्रखंड परियोजना प्रबंधक,

बी० पी० आई० यू० .....

..... संकुल स्तरीय संघ

महोदय,

हम ..... संकुल स्तरीय संघ, सौर उर्जा चलित लाईट लेने हेतू अपने सदस्यों को ऋण की सुविधा प्रदान करना चाहते हैं। इसके लिए सामुदायिक निवेश निधि के तहत ऋण की आवश्यकता है। हमारे संकुल स्तरीय संघ का ब्यौरा निम्नलिखित है:-

1. संकुल स्तरीय संघ का नाम : .....
2. संकुल स्तरीय संघ की गठन तिथि : .....
3. हमारा बैंक खाता संख्या ..... है तथा हमारा खाता .... बैंक के .....शाखा, के साथ है ।

कृपया हमारे संकुल स्तरीय संघ को ..... रुपया की ऋण सामुदायिक निवेश निधि से उपलब्ध करवाने की कृपा की जाए । हम इस पैसे को .....माह में लौटाने का वचन देते हैं।

अध्यक्ष का हस्ताक्षर कोषाध्यक्ष का हस्ताक्षर सचिव का हस्ताक्षर

दिनांक –

Annexure 7: UC

उपयोगिता प्रमाण–पत्र

(ऊर्जा सुरक्षा निधि)

_____ (ग्राम संगठन का नाम) को ऊर्जा सुरक्षा निधि हेतु जीविका परियोजना द्वारा प्राप्त रकम की उपयोगिता प्रमाण–पत्र प्रस्तुत है ।

_____ (BPIU का नाम) से प्राप्त चेक का न०, रकम एवं तिथि : _____

BPIU से प्राप्त कुल रकम – _____ रुपये।

_____ में कुल रकम लगा – _____ रुपये ।

शेष रकम बैंक खाता में जमा – ---------- रुपये ।

अध्यक्षा का हस्ताक्षर सचिव का हस्ताक्षर कोषाध्यक्ष का हस्ताक्षर

Process Guidelines of Solar Lighting for rural households

Bihar Rural Livelihoods Promotion Society
(JEEViKA)

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PROCESS GUIDELINES FOR IMPLEMENTING SOLAR LIGHTNING AT HOUSEHOLD LEVEL

What is Solar Energy?

The energy received by the earth from the sun in the form of solar radiation is called solar energy. This form of energy is tapped for the production of solar electricity or solar power.

How Solar Energy is converted to Solar Power?

Solar power is conversion of sunlight (Solar energy) into electricity, either directly using photovoltaic (PV), or indirectly using concentrated solar power (CSP). Concentrated solar power systems use lenses or mirrors and tracking systems to focus a large area of sunlight into a small beam. Photovoltaic convert light into electric current using the photoelectric effect.

What are the various components for generating Solar Power?

In India, photovoltaic is the most common method for generating solar power. The off grid technology has grown from the use of Compact Florescent Lamp (CFL) to Light Emitting Diode (LED). The LED based systems have added advantage over CFL in terms of quality, longevity, focused light. The components for a simple solar power circuit are listed below

1) Solar cell panels
2) Charge and discharge controller
3) Battery
4) Load
5) Lamp shell/bulb/ mobile charging point

Why Solar Power?

In India 56% of rural households (and 40% of all households) are unelectrified. The situation is worse in context of Bihar. As per the Greenpeace survey on power supply situation, Bihar was the only state which reported a deficit during peak hours in the Tier-1 cities. The current grid system is not able to provide round the clock electricity to the connected villages. Given the current situation, efficient grid system may take more than a decade to provide electricity to every household in Bihar.

Solar Power is clean, inexhaustible form of energy that can contribute significantly to addressing the current challenges in energy and climate change. The sun is free and is an unlimited source capable of supplying large amounts of energy to our planet. In fact, deserts receive more energy in just less than 6 hours than the world consumes in an entire year. Also, Bihar is identified as a potential area for solar energy as most of the regions are sun drenched, receiving more than 300 days of sunlight.

The versatility and flexibility of solar power allows adapting power generation to the needs of the network. It can cover the base demand periods and the peaks with thermal inertia, storage and hybridization with conventional sources or other renewable sources. This capability provides invaluable dispatch ability for utilities and power system operators.

The state needs 3,500 Mw, but supplies only 1,595 Mw through self-generation and by procuring it from other states, says Rajmohan Jha, deputy director of Bihar Renewable Energy Development Agency (BREDA).

How to identify villages for solar power?

The villages covered under JEEViKA offer a mix of unelectrified and grid based system. However most of the villages which are electrified by grid system have their own share of problems. The grid system comes with its own demerits like severe supply shortage, quality and reliability of services.

Step-1 Conditions, in which the renewable energy (solar light) based products will be installed in a village:

- The village should be un-electrified
- If the village is electrified then the average duration of power supply in the village should be less than 2-3 hours in 24 hour
- The SHG members agrees to install the Solar Housing Kit even if the household is electrified

Step-2 How to generate demand for solar light:

- The existing block level team members identify the need and raises demand for lighting by the communities. The need should be judged by the staff members on their day to day interaction with communities.
- Green Business Opportunities (GBO) team stationed at identified blocks determines the need and demand of the villagers.
- Demonstration of any identified model by respective technical agency.
- Exposure of the community members to other villages. Also, the team members of Green Business Opportunities may visit technical agency working/field area for better understanding of the product and its delivery.
- Micro-planning of the interested SHG members at the village level.

How to implement solar lighting program at the village level?

A three way procedure can be applied to figure out the demand and the need of the community.

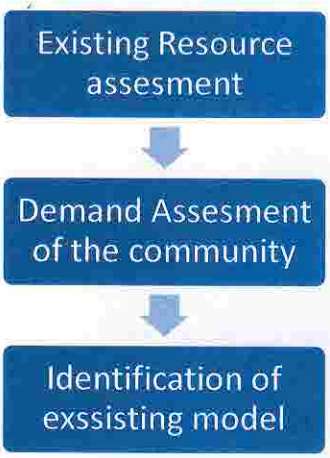

Figure 1: The system flow for assessment of solar need

Step-1 Existing Resource Assessment:
Information on existence/availability of conventional/non-conventional source of energy

Step-2 Demand Estimation of the community:

The basic requirement per household should be estimated depending on the interaction with the villagers. On an average the demand will be close to 2 fixed lights, 5-6hrs of electricity/day.

Step-3 Identification of available models:

The system can be designed which can serve the demand of the SHG households using the resources available in most economic manner. Use of standard component for easy replication and expansion in all villages across entire state should be taken into consideration.

An in-depth analysis covering all the above mentioned 3 steps can be done with the help of questionnaire. Find attached questionnaire titled "Questionnaire for mapping demand and resource availability at household level" in Annexure I. The questionnaire should be used as a tool to map current status and household requirement during the start of program.

Unit cost of Solar-Lighting

Table 1 elaborates on the number and the cost for charging units in one cycle. The model follows Bihar Rural Livelihoods Project (JEEViKA) collaboration with Lighting a Billion Lives (TERI) initiative to provide clean lighting source to women SHG members. The project started in December 2012 with setting up of 10 solar charging stations (SCS) and 3 Solar Mobile Charging Facility (SMCF) at 10 different locations in Dharhar Jamunia,Purnia.

Table 1: The number and cost of charging solar lamp in one cycle

Type of Rooftop Panel/Facility	**One charging station**				**Across Village**	
	Number of rooftop panels	Charging point per rooftop panel	Total number of charged units(one cycle)	Charging Cost per unit/cycle (Rs.)	Total number of charging stations	Units Charged(in one cycle)
Solar Charging Station	5	10	50	2	10	500
Solar Mobile Charging Facility	1	10	10	2	3	30

Various organizations have different per unit cost depending on the model offered. TERI model is a community based solar charging system.

Table 2 gives detail on costing of SELCO model. The model is an individual charging station and offers option of single and double lighting system along with mobile charging point.

Table 2: The cost of different models of solar light by SECLO

Product	**Cost (INR)**	**Transport Cost (INR)**	**Total Product Cost (INR)**	**Amount to be paid (after Subsidy) INR**	**Amount paid per month (over a duration of 4 years) INR**
Single Lighting and charging facility	7000	300	7300	4320	90
Double Lighting and single charging facility	8400	300	8700	6600 (the transport cost is removed by SELCO for JEEViKA members)	138 (excluding bank ROI)

Table 3 gives detail on costing of Minda NextGen Limited model. The model is a mini grid and one mini grid of 240W can support 40 SHG households.

Table 3 :The Cost of solar home lighting system by Minda NextGen Limited

Product	**Cost (INR)**	**Transport Cost (INR)**	**Amount to be paid (after Subsidy) INR**	**Amount to be paid(INR/Household)**
Solar Mini-grid (240W, 2 luminaries, mobile charging)	1,50,000	Paid my Minda NextGen Limited	1,05,000	2625

Process of SHG members to carry out solar lighting

Step-1: Workshop for Community Cadres on solar lighting and solar products by Green Business Opportunities-Renewable Energy Young Professionals.

Step-2: Community Cadres mobilizing the SHG members on use of solar lighting as clean source of lighting.

Step-3: Demonstration of the solar products in front of the SHG members by selected companies.

Step-4: Consensus among the SHG members on using/installing solar products of a particular company.

Step-5: Green-Village Resource Person will visit to the SHG members and carry out the micro-plan for installing solar products.

Step-6: The SHG members who are interested in installing the solar products in their household will be considered for micro-planning process. Signature on a written declaration will be taken from the SHG members on agreeing to install solar products in their household. The micro-plan format is given below:

Name of the SHG member	Name of the SHG	Name of the VO	Name of the village	House Grid/Generator point connected (Yes/No)	Duration of electricity/generator light in a day (in hrs)	Appliance used for Lighting (Kerosene Lantern, Dibri etc)	SHG or VO Account number

Step-7: In a village, if the VO is formed and have the bank account; in that village the micro-planning for solar lighting will be undertaken.

Step-8: In a village, if the VO is formed but bank account not yet opened; in that village, the concerned SHGs should have the bank account for carrying out the solar lighting micro-plan.

Step-9: Green-Village Resource Persons will compile all the Micro-plans and get the certification of SHG office bearers on number of SHG members, number of solar products to be installed, amount of contribution deposited.

Step-10: Green-Village Resource Persons will further submit all the Micro-plans to the concerned Community Coordinators, number of solar products to be installed, and amount of contribution deposited.

Step-11: Method of loan for the solar products should be discussed with the SHG members

a) Loan from Village Organization (Subsidy on product can or cannot be obtained)
b) Loan from Regional Rural Bank (Subsidy on product can be obtained)

Step-11.a.1: The Community Coordinators will submit the micro-plans along with the balance fund (means [a] balance / unspent fund of agriculture / vermi-compost CIF and [b] SHGs repaid CIF amount to the VO) to the concerned Area Coordinators. The Area Coordinators will give it to the Block Project Managers for validation and further certification on the number of SHG members, number of solar products to be installed. The format in which the Community Coordinators should provide the details is as follows:

I. VO or SHG certification on the compiled Micro-plans
II. Balance fund details in the VOs

Format of certification

Name of VO	SHG repaid CIF to VO	Unspent CIF (Agri/Vermi compost)

Step-11.a.2: The above mentioned format (Format for Certification) will be certified by the Community Coordinator and the Area Coordinator and Block Project Manager will validate the certification made by the Community Coordinator and further certify the same by visiting 20% and 10% of VOs / SHGs respectively.

Step-11.a.3: The Block Project Manager will submit this format (Format for Certification) to the concerned Manager Livelihoods and request for CIF as loan to individual SHG members along with his certification. The above mentioned format (Format for Certification) will be used along with a request letter for additional CIF required as loan for the SHG members.

Step-11.a.4: The Manager Livelihoods will compile the request letter & format (Format for Certification) received from the Block Project Manager and along with his comment fill up the following format and submit to the concerned District Project Manager (DPM) for further sending to SPMU for approval.

Step-11.a.5: The District Project Manager, Manager Livelihoods and Manager Finance will send the proposal to State Project Manager (Livelihoods) for approval.

Step-11.a.6: The State Project Manager (Livelihoods) will process for approval from CEO and send the approval copy to the District Project Manager for initiating the implementation of installing the solar products for the SHG households

Step-11.b.1: The micro-plan along with the signatures of the SHG members for agreeing to install the solar products is to be submitted in the Regional Rural Bank (RRB)

Step-11.b.2: Loan will be granted after installation of solar products to the SHG members which is to be repaid as per the condition agreed.

Step-12: The BPIU will maintain all the register information such as details of SHG members, number of lighting installed, SHG members contribution, VO contribution, date of input supplies, date of solar light installation, and so on in the EXCEL SHEET till the MIS is designed

Step-13: The DPCU will have the compiled excel sheet of these information on a monthly basis on the progress made on solar light installation by each BPIUs.

Step-14: The partner agency will be required to go for capacity building by ensuring a Technical Resource Person (TRP)/Energy Entrepreneur (EE) at the village level.

Step-15: The after sale service should be ensured as per the clause stated in MOU.

17/5/2013

(Arvind Kumar Chaudhary)
Chief Executive Officer
– cum –
State Mission Director

For Distribution

1. CFO/OSD/AO/FO/PS.
2. All SPMs & PMs.
3. All DPMs/In Charge, All LH-Managers & BPMs/In Charge.
4. Concerned File.
5. IT Section.

ANNEXURE I

Questionnaire for mapping demand and resource availability at household level

Village name:

- Name of the SHG member_____
- SHG name_____ VO name_____
- Whether house grid connected
  (Yes/No)_____
- Average duration of electricity in a day (if grid connected in hrs.):
  ○ < 4 hrs ○ 4 – 6 hrs 7 – 9 hrs
- Whether house connected with Generator light (Yes/No)
  _____
- If Yes, total duration of electricity supplied through Generator:
  ○ < 2 hrs ○ 2 – 4 hrs ○ 5 – 7 hrs ○ 8 – 10 hrs
- Cost of each point of generator:

Equipment	Number of points	Cost of each point (In Rs.)
Bulb		
Fan		
Others		

- Total amount paid for generator connection (In Rs.)

Season	Amount
Summer (March-June)	
Monsoon (July-September)	
Winters (October-Feb)	

- Appliances/sources used for lighting
  _____

- Kerosene oil purchased from:

Source	Quantity of kerosene purchased (In Liters/transaction)	Number of Transactions in a month	Amount Spent (In Rs.)
PDS			
Open Market			

- Appliances used for cooking(i.e. wood, dung cake, coal based Chulha, gas cylinder)_____
- Total amount/quantity of Kerosene used for cooking purpose in a month (In Litres)_____
- Wood utilized for cooking:

Source	Quantity of wood utilized per month (In Kg)	Amount Spent in that month (In Rs.)
Forest/ Shrubs		
Open Market		

- Quantity of dung cake utilized for cooking in a month (In Kg)_____
- Problems faced while cooking:
  - _____
  - _____
- Sleeping pattern at night (time interval)

  _____
- Key activities of the household members (including old age, children) during evening/dark hours:
  - _____
  - _____
  - _____

- Problems faced due to irregularity of electricity/unavailability of proper light at night:
  - _____
  - _____
  - _____

- Children study pattern:

Children studying in classes				
Children's study duration at night (in hrs.)				

- Problems faced by children due to unavailability of proper light in studies:
  - _____
  - _____
- How a better light facility will help your personal and social life?
  - Longer study duration for children
  - Longer wake up hours
  - Help while cooking
  - In livelihood activities
  - No use
- Mobile charged at:

  ○ Own home by electricity ○ Neighbor home by electricity ○ Mobile charging point in market
- If Mobile charged at mobile charging point:
  - Distance from house (In Kms)

    _____
  - Cost per mobile charging (In Rs.) _____
  - Any call theft during mobile charging at local outlets _____

- Appliance used for irrigation:

Source	Quantity/amount of fuel utilized in a month	Amount Spent in that month (In Rs.)	Specify the months in which the use is maximum
Diesel powered pump			
Petrol powered pump			
Electricity powered pump			
Handpump			

- Equipments/Machines used for irrigation:

  _____

- Primary source of income (livelihood activities) of the HHs:
  - _____
  - _____
- Secondary sources of income (livelihood activities) of the HHs:
  - _____
  - _____
- Total landholding size of the family:

  ○ < 2 katha ○ 2 – 5 katha ○ 6 – 8 katha ○ > 10 katha
- Average income of family per month (In Rs.)

  _____