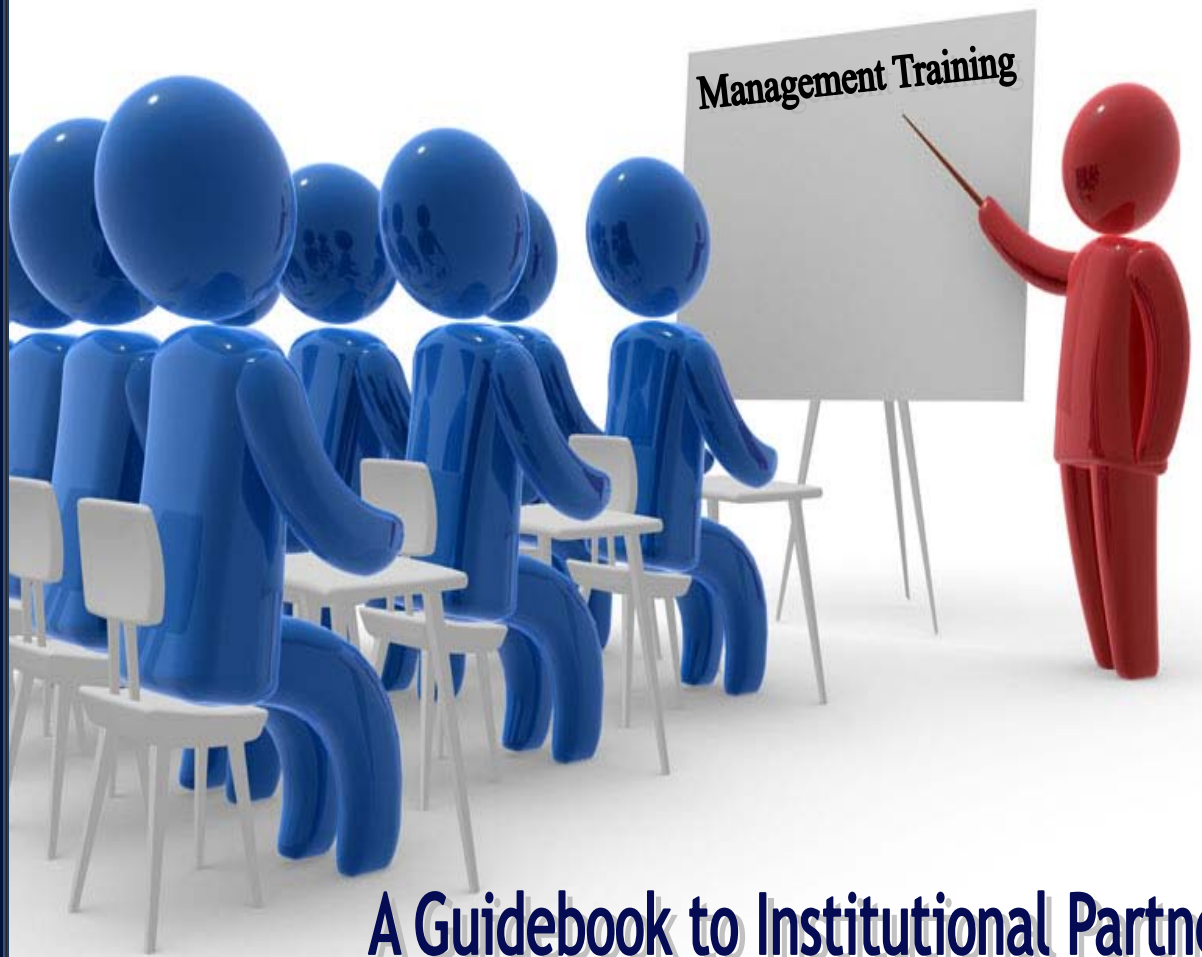


Management Training Manual



Million SoUL Project



A Guidebook to Institutional Partner



Indian Institute of Technology Bombay

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CHAPTER 1: INTRODUCTION TO MANAGEMENT TRAINING

1) Importance of Management Training Programs for an Organization

Executives handle more than a handful of responsibilities; they are also expected to oversee the functions of their subordinates. Organizations have high expectations from their executives; they do not only expect them to perform their jobs, but they are expected to perform well and with greater efficiency.

Management training is essential not just to groom regular employees to become good executives, but it is also intended to enhance and improve the skills of existing executives and officers so they can learn new practices that will enable them to be more effective in performing their functions. Every organization, whether small or medium-sized, will greatly benefit from providing appropriate training courses for their employees. And although this will entail certain costs for the institute, this is one investment that will ultimately produce greater returns in the long run.

2) Why Executives Need Training?

The way executives work together and exchange expertise is critical to their personal success as well as the success of their projects and their organization. Many of the management skills that are needed also are consistent with successful project implementation, for example.

Executives of the future will no longer be able to rely solely on their technical expertise to show their value. They must be able to provide more than knowledge: they must be both willing and able to play a variety of roles within an organization, regularly and effectively.

This is also true of the relationships that executives, managers, consultants and others have with outside contractors, Government Departments, and others where they can only influence, not control. These management/leadership skills need to be reinforced from time to time. It is an investment in personal development that provides both immediate and long-term benefits for the organization.

These, then, are the critical management roles needed for the effective Executive, Manager, and Leader:

- 1. Specialized Professional** - Relates technical or complex information to the job, but within the strategic scope of the project.
- 2. Facilitator** - Manages discussions effectively; ensures that all parties are in agreement and have a clear understanding of the agreed-upon next steps before going on; keeps the focus on moving the work/project forward.

3. Problem Solver - Effectively analyzes the overall situation/project; proactively identifies problems and proposes solutions.

4. Coach - Motivates and works effectively with others while helping them develop skills and knowledge; creates an environment where coaching and feedback is important.

5. Administrator - Manages time, deadlines, and budgets simultaneously; provides a variety of written summaries for projects; has a clear understanding of the policies and procedures involved in utilizing resources.

6. Influencer - Receives recommendations favorably. Is persuasive; presents options and trade-offs and focuses on win-win outcomes.

7. Strategist - Gets the “big picture”; has a clear understanding of project strategies and needs as well as objectives and concerns.

8. Partner - Brings a high level of trust and commitment to working relationships; has a keen, objective sense of whether expectations are being met; values open communication as a fundamental building block for all constituent relationships.

3) Need of Hand Holding:

Hand-holding is a close management principle where one party is carefully monitoring the progress of another party and guides them step-by-step in the completion of the task.

"Hand-holding" is providing very close support, showing a client, for example, exactly what to do, step by step as opposed to giving them general guidelines and letting them make the decisions.

4) Management Training Outline:**A) Training Agenda****Morning (9:00 am – 10:00 am)**

- Welcome
- Ice breaker exercise (Management Exercise)
- Introductions to management training
- Project overview
- Organizational Structure (General idea of staff roles and responsibilities)

Tea Break (10:00 am – 10:30 am)**Morning (10:30 am – 12:30)**

- Managing A&D Center
- Inventory management
- Worker's scheduling and planning

Lunch Break (12:30 pm – 1:30 pm)**Afternoon (1:30 pm - 4:30 pm)**

- Managing promotion and campaigning
- Managing Payments & Incentives
- Managing A&D completion
- Managing service repair center (SRC) setup

Tea Break (3:00 pm – 3:30 pm)**Afternoon (3:30 pm - 5:30 pm)**

- Managing workforce supervision
- Managing workforce selection
- Managing training & development
- Conclude on a positive note - thank NGO staff for attending management training
- Dismissal

B) Orientation:-**a) Project Overview**

India has one of the largest young populations in the world, with 350 million children under 14 years of age. School education is thus essential for the future of the country. 7.8 Crore (78 million) households in India still use kerosene as their primary source of lighting today. Thus, most of the young students going to school either do not have access to alternate light source or have an erratic supply of electricity, both of which affect their study during later hours of the day.

The light level required for study purposes is about 150 Lux at the reading area. Thus, to provide light for 4 hours every evening, solely for study purposes, requires only 0.7 kWh of electricity per year! A 0.5 Watt LED provides up to 250 Lux of light. A solar powered lamp with LED light can thus provide 150 Lux of light at the table in low intensity, and up to 250 Lux of light in high intensity mode, using a 1 Watt solar panel, at a cost of Rs.400-Rs.600 per lamp.



Figure1: Management training orientation

A sustainable adoption of solar energy products has not yet happened in India due to a clear mismatch between the requirements on the field and the scope of past solar lamp programmes. Solar lamps are typically required in remote, rural areas at a low cost and with easy availability in the local market, with access to timely and low cost after sales service. However, currently lamps are produced in large urban cities which result in a high cost of lamp due to higher overheads, their minimal availability at local level due to lack of distribution channels, and time consuming and expensive after-sales service since they are based in cities or large towns. Hence to directly and completely address the requirements, the solar lamp program must be able to involve local people in all aspects of assembly, distribution and after sales service at the local level. This will ensure that the lamps are of low cost, sufficiently available in the local market ensuring market penetration into remote areas, with timely and low cost after sales service using trained manpower available at the local level.

Further, a countrywide large-scale solar lamp program must address, simultaneously, the issues of Scale, Speed and Skill. This paper discusses the development of one such model the Million

Solar Urja Lamp (SoUL) Program, which focuses on the 'localisation' of solar energy. In order to achieve scale, the model is designed to be replicated in parallel in multiple blocks, across districts and states. To achieve speed, the assembly and distribution for any block is designed to be completed in 90 days. In order to target skill development, rural people are trained in the assembling, distribution, repair and maintenance of these lamps in their local areas.

b) Project Objectives and Concepts

The objectives of the Million SoUL program are to provide high-quality affordable clear light for study purposes to one million (10 Lakhs) school students between class 5 to class 12, in select rural areas of India in the fastest possible way.

The specific goals are:

- 1) Provide high quality, affordable clean light for study purposes to school students in rural India, in the fastest possible way,
- 2) Involve local people in the SoUL lamp assembly, testing, campaigning, distribution, repair & maintenance.
- 3) Ensure that the SoUL is in working condition throughout the warranty period.

In this model, the assembly of lamps, their distribution, use, repair and maintenance are all carried out by trained local people, thus ensuring low costs, better availability and better repairability of the lamps. Further, in order to make a discernible impact, every school student in a particular region (a block in a district in a state) gets an opportunity to own the lamp. On an average, a block in India has 17,600 school children studying in 5th to 12th standard. The project endeavors to reach out to at least 75% of school children in each block, thereby saturating the block with solar lamps. This allows for better logistics management, lower costs, and sustainable job creation. Further, in the initial phase, the project targeted blocks with less geographical or social constraints. This is essential to demonstrate the large-scale implementation in quick time.

c) Specification of Solar Lamp

The solar lamp is a standard 1-Watt solar panel powered study lamp with 0.5 Watt LED and Ni-MH battery, and a flexible gooseneck to provide adjustable lighting. The lamp has 18-19 different components (depending on the supplier) including the PCB, panel, wires, battery pack, plastic casings, screws, packaging box and product code stickers.

d) Financial Model

The expenses budgeted for the project are Rs.500 per lamp, towards: the cost of procurement and delivery cost of the components or SoUL kits, overhead costs of coordination, costs of local

assembly and distribution, and costs of free repair and maintenance during the warranty period. The sources of funding for this project are the government and other funding agencies, which support the contribution of INR 120 per lamp by the student beneficiaries themselves.

e) Operations Model

The typical sequence of operational activities, after the selection of the NGOs, is as follows (see Fig. 1): (i) the blocks and the corresponding local assembly-cum-distribution (A&D) center is located, (ii) local people are recruited by the NGO, who are then trained to assemble and distribute the lamp at the center, (iii) components are sourced by the Million Solar Program (MSP) Office and supplied directly by the supplier to the assembly center, where they are assembled into lamps by the trained manpower, (iv) campaigning and distribution of lamps is carried out at every school and every village in the blocks, and (v) at the end of distribution, repair and maintenance centers are established at multiple locations in a block, and monitored by the local centers until the end of the warranty period. During the assembly and distribution phase of the project, periodic updates of the inventory, assembly and distribution is shared with the MSP office, along with detailed records of the student beneficiaries and their payments.

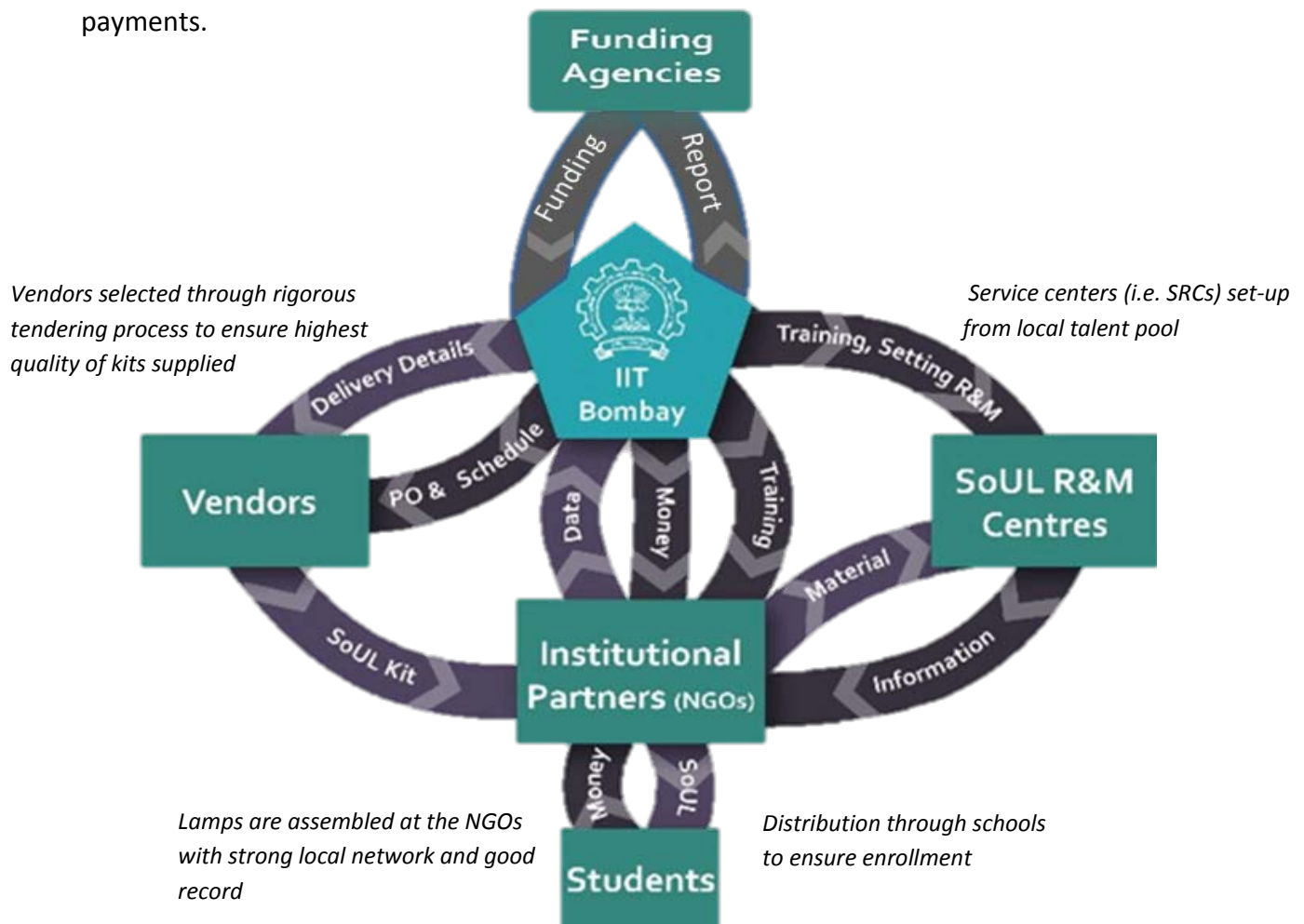


Figure2: Operational flow chart

CHAPTER 2: ORGANIZATIONAL STRUCTURE

1) IIT Bombay

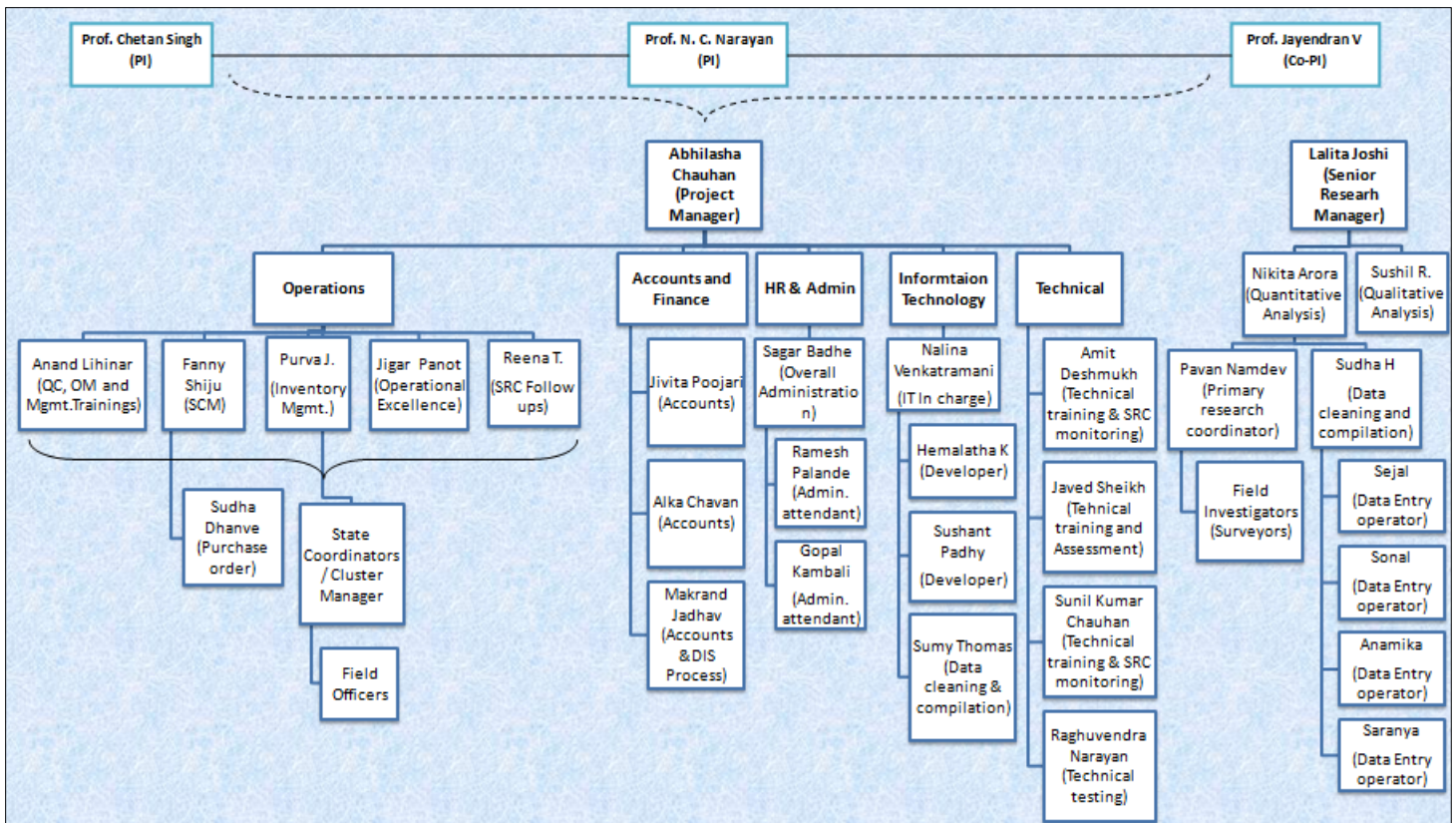


Figure3: Organizational Structure – IIT Bombay

A) IIT Bombay Field Staff Description:

1. State Coordinator / Cluster Manager's Job Description

Summary of Position

The state coordinator/cluster manager is a representative of IITB, appointed as a state coordinator / cluster manager for monitoring overall activities of SoUL project for specific state / cluster where SoUL project is started. He is the key person for all the stakeholders and he is responsible for SoUL related matters for entire state / cluster.

Duties & Responsibilities

a) Assembly and Distribution related task

- Coordination with IITB, IPs, Vendors and other district partners
- Coordination with IPs of their respective block/clusters (starting from Pre-training)
- Visits to proposed A & D centers (along with IP personnel)
- Coordination with IITB to arrange the training for A&D and SRCs
- Hand holding of IPs after training

- Meetings with IPs for strategy making & planning for effective implementation
- Follow-up with IPs for meeting targets (i.e. assembly and distribution progress) and identifying constraint and work towards resolving them (with the support from the team).
- Management and monitoring of IP & IITB Field Officer (if available)
- Reporting to SoUL Team
- Regular field visits to coordinate with IP & IITB Field Officer (if available), on the basis of priority like blocks with issues or new IITB Field Officer (if deputed)
- Coordination/Monitoring with SoUL Team for Operation & Research work
- Visiting Govt. offices, as & when required.
- Planning and organizing fortnightly or monthly meetings of all respective IITB Field Officer (if available)
- Meetings with IPs as and when required
- Review of IPs and Field Officers performance
- Active participation in A&D closing up activities

b) SRC related task

- Coordination with IPs & SoUL Operation team (IITB) through Field Officer for spare parts demand & supply plan of SRCs
- Coordination with IPs & SoUL Account team (IITB) through Field Officer for SRCM's monthly honorarium
- Coordination with IPs & SoUL IT team (IITB) through Field Officer for regular data flow in soft copy as well as hard copy
- Area wise SRC Monitoring:- Monitoring of SRCs by IPs, Monitoring of IPs by IITB Field Officers, Monitoring of IITB Field Officers, for overall SRC related activities
- Coordination with IPs through IITB Field Officer for bi-monthly SRC Awareness programs (for example Announcement through Loudspeakers, Pamphlets, Wall Painting, Street play etc.) as well as Lamp Repair & Maintenance Camp in Tier-2 & Tier-3 level villages
- Coordination with IPs through IITB Field Officer for monthly Lamp Repair & Maintenance Refresher Training of SRC Managers as well as monthly Operations Refresher Hand-holding to IP's SRC In-charge & Data Entry Operator
- Coordination with IPs & 3 SRC domains (Operations, Campaigning & Lamp Repairing, Sustainability) of SRC team through IITB Field Officer for various tasks that would be assigned simultaneously and/or one-after-another
- Identification of loop holes & giving possible resolutions
- Coordination with IP for completing tasks
- Informing Seniors about problems
- Random visits to ALL the SRCs for monitoring
- SRC operations for new product availability at the SRCs by Vendors with the help of IPs

2. Field Officer's Job Description

Summary of Position

The field officer is a representative of IITB, appointed as a field officer for specific block or district for monitoring the field level activities of SoUL project. He will perform the roles and responsibilities as per IITB guidelines. He will act as a key communicator between Institutional Partner and IITB. He will consult with IIT Bombay's state coordinator/cluster manager for all major and minor issues related to SoUL project operations. Field Officer will do the monitoring and supervision of all field level activities. Field officers will not involve directly for executing the project activities. He will work as a supporting hand between IITB and NGO.

Duties & Responsibilities

- Ensure that project in charge is following his roles and responsibilities through proper monitoring and coordination

2) Institutional Partner (i.e. NGO)

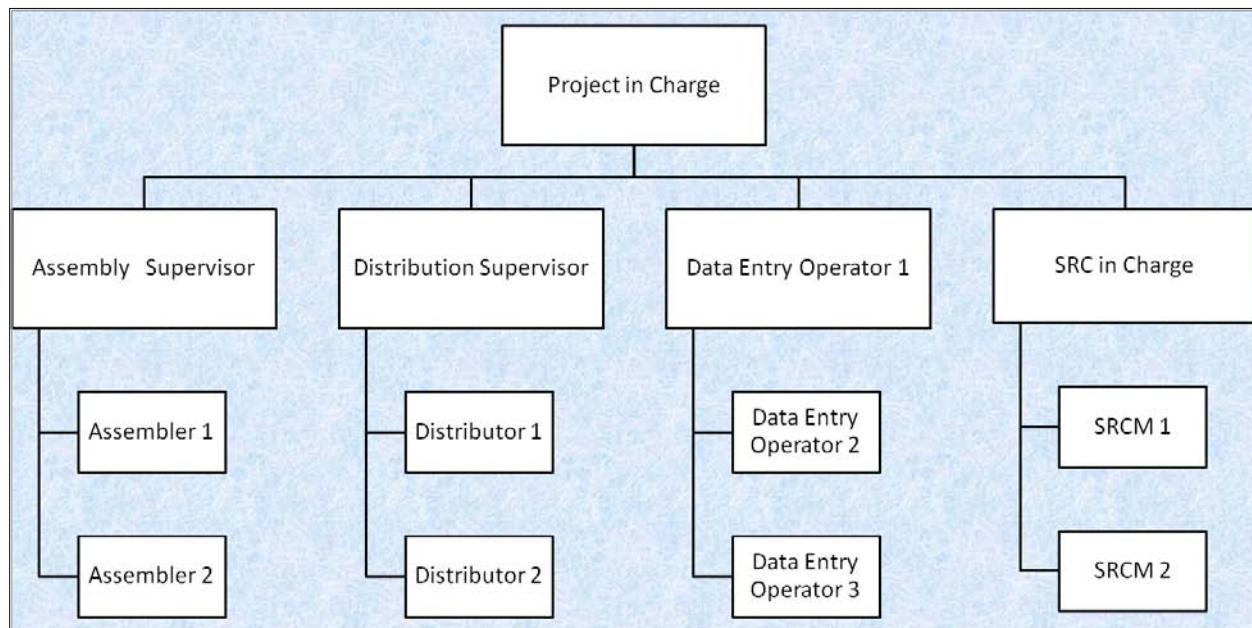


Figure4: Organizational Structure – IP (i.e. NGO)

A) NGO Staff Description

1. Project in Charge's Job Description

Summary of Position

The Project in charge is a representative of Institutional Partner (i.e. NGO), appointed as a Project in charge for specific assembly & distribution center, block or district for monitoring and executing the SoUL project activities. He will perform the roles and responsibilities as per IITB guidelines. He will act as a key communicator between Institutional Partner and IITB. He will consult with IIT Bombay's state coordinator/cluster manager/field officer for all major and minor issues related to SoUL project operations. Project in charge will do the monitoring, supervision and execution of all project activities. Project in charge will be involved directly for executing the project activities. Project in charge is the most responsive and answerable person for project related matters to IIT Bombay.

Duties & Responsibilities

a) Broad level responsibilities

- Overall monitoring, supervision and execution of project activities
- As a part of photo documentation take photographs of all the field level activities

b) Assembly and Distribution related task

- Coordination with IITB, Vendors and other district partners
- Coordination with IITB and other staff of IP for respective block/clusters (starting from Pre-training)
- Coordination with IITB to arrange the training for A&D and SRCs
- Attend Management training / Hand holding / Technical training
- Meetings with state coordinator/cluster manager/field officer for strategy making & planning for effective project implementation
- Daily, weekly and monthly assembly and distribution planning with the help of respective supervisors
- Follow-up with SRC in charge, A&D supervisors & data entry operator for meeting targets (i.e. promotion and campaigning, assembly and distribution progress) and identifying constraint and work towards resolving them (with the support from the IITB team).
- Management and monitoring staff of IP
- Reporting to SoUL Team
- Regular field visits to monitor the progress of project
- Coordination with SoUL Team for Operation & Research work
- Visiting Govt. offices, as & when required.
- Planning and organizing fort nightly or monthly meetings of all respective staff of IP
- Meetings with state coordinator/cluster manager/field officer as and when required
- Review of assemblers, distributors, supervisors performance

- Active involvement in A&D closing up activities

c) SRC related task

- Coordination with SoUL Operation team (IITB) through Field Officer for spare parts demand & supply plan of SRCs
- Coordination with SoUL Account team (IITB) through Field Officer for SRCM's monthly honorarium
- Coordination with SoUL IT team (IITB) through Field Officer for regular data flow in soft copy as well as hard copy
- Cluster/block wise SRC Monitoring
- Coordination with Field Officer/Cluster Manager for bi-monthly SRC Awareness programs (for example Announcement through Loudspeakers, Pamphlets, Wall Painting, Street play etc.) as well as Lamp Repair & Maintenance Camp in Tier-2 & Tier-3 level villages
- Coordination with IITB through Field Officer/Cluster Manager for monthly Lamp Repair & Maintenance Refresher Training of SRC Managers as well as monthly Operations Refresher Hand-holding to IP's SRC In-charge & Data Entry Operator
- Coordination with IITB's SRC team & 3 SRC domains (Operations, Campaigning & Lamp Repairing, Sustainability) through IITB Field Officer for various tasks that would be assigned simultaneously and/or one-after-another
- Identification of loop holes & giving possible resolutions
- Coordination with IITB for completing tasks
- Informing IITB Seniors about problems
- Regular visits to ALL the SRCs for monitoring
- SRC operations for new product availability at the SRCs by Vendors with the help of IPs

d) Research Activities

a. Data Collection:

- Secondary data at block and district level (school related information etc.)
- Village profile: data collection
- Qualitative data: PRA (mapping, FGDs, key informant interviews etc.)

b. Household Impact Surveys

- Coordinate with Field Investigators when HH impact survey is planned (convey dates, informing the villages, making arrangements for stay and food etc.)
- Facilitate and supervise data collection process

2. Assembly Supervisor's Job Description

Summary of Position

The Assembly Supervisor is a representative of Institutional Partner (i.e. NGO), appointed as an Assembly Supervisor for specific assembly & distribution center for monitoring and executing the assembly related activities. He will perform the roles and responsibilities as per IITB guidelines. He will consult with Project in charge for all major and minor issues related to assembly operations. Assembly Supervisor will do the monitoring, supervision and execution of assembly related activities. Assembly Supervisor will directly involved in various activities like supervision, execution of assembly work which includes the material handling, issuing, storage, packaging etc.

Duties & Responsibilities

a) Consignment/Supply Chain Related Tasks

- Check with Operation team (IIT Bombay) about the arrival of consignment (date and time)
- Present at the site at the time of arrival of consignment
- Take photos or video shooting (specifically if there is damage to the components when the boxes are opened)
- Supervise the material receiving process and proper counting of boxes (exact number of boxes - A & B type mentioned on LR copy)
- Verify the Tax Invoice & Delivery Challan (DC) for actual quantity received and put original copy of same in file for future evidence and verification.
- Report all damages (including damage to cardboard boxes) and shortages (# Boxes) on all copies of the delivering carrier's shipment bill (i.e. LR, Invoice & DC) and have the delivery person sign his/her name and date on all shipment bill copies.
- Supervise Goods Received Note (GRN) entered by IP staff (i.e. data entry operator) in physical inventory book. This goods received note includes count of:
 - Total / actual boxes and/or material (if applicable) received by IP against the quantity delivered by vendor
 - Upload the scan copy of Loading Receipt (LR) on million soul website

b) Assembly related tasks –

- Daily, weekly and monthly assembly planning with the help of Project in charge

Important Note - Ask IITB, before dispatching defectives to vendor:**Do the following tasks:**

- Send defective components report along with sign & seal of IP (scan copy) to IITB (Operation Team), once consignment-wise lamps are assembled.
- Once defective components report (soft copy) is sent to IITB, ensure whether received the undertaking letter for a logistic company from IITB and after that dispatch the defective components to the vendor by courier service

3. Distribution Supervisor's Job Description**Summary of Position**

The distribution supervisor is a representative of Institutional Partner (i.e. NGO), appointed as a Distribution Supervisor for specific assembly & distribution center for monitoring and executing the distribution and campaigning related activities. He will perform the roles and responsibilities as per IITB guidelines. He will consult with Project in charge for all major and minor issues related to distribution and campaigning operations. Distribution Supervisor will do the monitoring, supervision and execution of distribution and campaigning related activities of the project. Distribution Supervisor will be directly involved in various activities like supervision, execution of campaigning and distribution.

Duties & Responsibilities**a) Campaigning activities**

- Monitoring and creating campaigning strategies for cluster / block level distribution with the help of Project in charge.
- If needed training to distributors and other project staff with the help of state coordinator/cluster manager/field officer regarding campaigning and distribution
- Regular visit, when distributors do the campaigning and project promotion in the schools and villages

b) Distribution related tasks –

- Daily, weekly and monthly distribution planning with the help of Project in charge
- Cross check whether NGO received DIS (hard copies) from distributors
- Visit the field when distribution is in process

c) Distribution Information Sheet (Hard Copies)

- Check if the DIS Sheets are properly filled by the distributors with teacher/principal signature along with school seal
- Supervise DIS entry in to the Excel formats provided by IITB
- Dispatch DIS sheets (hard copy of IITB) through courier/speed post to IITB

4. Data Entry Operator's Job Description

Summary of Position

The Data Entry Operator is a representative of Institutional Partner (i.e. NGO), appointed as a Data Entry Operator for specific assembly & distribution center for monitoring and executing the data entry work. He will perform the roles and responsibilities as per IITB guidelines. He will consult with Project in charge, assembly & distribution supervisor and SRC in charge for all major and minor issues related to data entry work. Data Entry Operator will do the monitoring, supervision and execution of entire data entry work of the project. The primary responsibility of the Data Entry Operator is office and administrative support.

Duties & Responsibilities

- Supervise and execute the daily activities of data entry work.
- Training new data entry operators on related methods and procedures.
- Resolving complex or complicated inaccuracies, missing data or data unable to be verified.

Online Update – Maintain following records in online format provided by IITB

- GRN Records
- Daily Assembly Records
- Daily Missing / Excess & Defective Records
- Daily Distribution Records
- DIS Entry
- SRC Data Entry

Offline Update – Maintain following records in hard copy format (booklets) provided by IITB

- GRN Records
- Daily Assembly Records
- Daily Missing / Excess & Defective Records
- Daily Distribution Records
- Free Kit Records
- DIS Entry
- SRC Data Entry
- Maintain records pertaining to material / kits issued to workers (like Issue of Material to Assemblers, Issue of Lamps to Distributors, Receipt of DIS & Money from Distributors)

5. SRC in Charge's Job Description

Summary of Position

The SRC in charge is a representative of Institutional Partner (i.e. NGO), appointed as a SRC in charge for specific assembly & distribution center /cluster / block for monitoring and executing the SRC related operations and activities. He will perform the roles and responsibilities as per IITB guidelines. He will consult with Project in charge for all major and minor issues related to SRC operations. SRC in charge will do the monitoring, supervision and execution of SRC related activities. SRC in charge will be involved directly for executing the SRC related activities.

Duties & Responsibilities

e) Repair and Maintenance related tasks

- As per IITB guidelines, monitor the SRCMs for each & every Repair & Maintenance activities.
- Surprise checks to random SRCs, to make sure the quality is not compromised
- As a part of photo documentation take photographs of SRC Centers in case of unusual things spotted, mismanagement etc.
- Any irregularities found in the process of Repair & Maintenance from any side, may be from the IP side or, the SRC side, it should be immediately reported to IIT Bombay's field officer/cluster manager/state coordinator so that appropriate action can be taken immediately against the respective person.
- Test Faulty Components properly (to cross-verify the proposed Faulty Components are really Defective) after receiving from the SRCMs and dispatching to the respective vendor for future replacement.
- Regular monitoring and guidance to respective staff for updating the inventory data (Count Check list of received, missing, defective, replacement of spare parts) in SRC logbooks & through online mode.

Inventory / Supply Chain Related Tasks (SRC):

a. Receiving of Spare Parts:-

- Regular follow-up with operation team (IIT Bombay) about arranging Spare Components as per the Demand. Make sure the next demand for Spare Components should be raised when only 50% quantity is left-out.
- Send the inventory report showing the status (received spare, no. of spares given to each SRC Center, details of defectives received, inventory (good components) left at each SRC center before the receiving of next spare components.
- Check with operation team (IIT Bombay) about the arrival of spare parts (date and time).
- During the count check of spare components, physical presence is mandatory at assembly center and close monitoring needs to be done for avoiding any mishandling of actual inventory.

- Send a scan copy of the stamped & signed count checklist of Spare components through mail to IITB within 24 Hrs after received of Spare Parts and put original copy of same in a file for future evidence and verification.
- Click photos / Video shooting (specifically if there is damage to the components when the boxes are opened) of activities from spare parts arrival to counting of components.

b. Defective Components Dispatch:-

- Handover defective components and respective data to Data Entry Operator to update through online mode that was collected from SRCMs and cross check with the logbooks for assuring the accuracy level.
- Before dispatching defectives to vendor send a scan copy of defective components report along with sign & seal of IP to IITB through mail to issue Undertaking Letter
- After receiving scan copy of Defective components report, IITB will Issue Undertaking Letter for dispatching the defective components to the respective vendor
- Keep photo copy of defective component report in separate file for future evidence and verification.
- Put original copy of defective component report in defective component box for vendor reference.
- Handover the Undertaking Letter to logistic company for their reference.
- Dispatch the defective components to respective vendor by having coordination with field officer or IITB (Operation Team)
- Intimate Logistic details of the defective components to IITB (Operation Team)

CHAPTER 3: MANAGING A&D CENTER

1) Introduction:

Taking into the consideration of increasing phases of Million SoUL Program and the previous phase learning, outcome and operational difficulties proved that managing localized A&D center is not easy task and requires proper planning and coordination between all stakeholders to avoid errors and mistakes in day to day activities. Then it is important to identify the objectives for planning and managing A&D center more effectively and efficiently. Some are as follows:-

- ✓ Easy information flow (between all stakeholders)
- ✓ Reduce defectives (during assembly, storage and transport)
- ✓ Effortless material handling
- ✓ Well defined operational measures
- ✓ Clear roles & responsibilities to avoid communication errors

A&D center is the place where all project related operations are taking place such as receiving, dispatching, storage, assembly, distribution and record keeping of solar lamps and other important operations. A&D Center is a location with adequate facilities where volume shipments are received from a vendor.

The modern A&D centre is a pivot in the physical assembly and distribution process. According to this process, assembly and distribution of solar lamps is the primary and major responsibility of A&D center. As per this concept, an A&D center is a location where inputs (incoming factory shipment – unassembled kits) are converted into outputs (outward shipments representing order of students). This conversion takes place by assembling various components in to solar lamp without consuming too much time.

Assembly and distribution of solar lamp is the major function of A&D center. It includes – receiving, dispatching, storage, assembly, distribution and record keeping. The assembly and distribution supervisor is often reporting to project in charge. However it has link with IIT Bombay. This is indirectly reporting to IIT Bombay but functionally it is with NGO.

A&D center is the key place for multiple operational activities and it coordinates with NGO and IIT Bombay. That is because of the following.

In order to run the assembly and distribution operations smoothly the A&D center (i.e. NGO) administration must complete understanding of all SoUL related operations to run the project effectively and should complete various activities within schedule time.

In order to provide the required solar lamps to the beneficiaries the project in charge has to plan the materials, manpower and other resources etc.

2) Advantages of Own A&D Center:-

It is generally less expensive and more – efficient.

- ✓ A&D center should be strategically located and – easily accessible, that will help to save time, money and other resources.
- ✓ Fixed costs of an A&D center are distributed among – many users.
- ✓ The cost of A&D center can be easily and exactly – ascertained, and the user pays only for the space and services he uses.

3) A&D Center Location

The following considerations determine the location of an A&D center:

- Block / town service area and cost of distribution from the A&D center to the block / town area.
- Satisfaction of transport requirements and facilities available in the form of roads and vehicles.
- Transportation rates prevailing in the area and distribution cost per SoUL kit.
- Availability of electricity, water, sewerage disposal and their cost.
- Assemblers, distributors, supervisors, data entry operators, project in charge availability and their cost.
- A&D center requirements and constraints, including commitments, if any, made to assemblers, distributors (including other staff of NGO) and others about a particular location which may influence a decision.
- Attitudes of local residents and government toward establishment of the A&D center.
- Potential for later expansion.
- Cost of land for the A&D center and other costs.
- Possibility of change in the use of the facility at a later date if the NGO so desires, and lease or sale of the land and building.

4) A&D Center Characteristics

- It protects the material against ground moisture, rain, objectionable odors, insects, rodents, birds, poultry, cattle, thieves, wind, fire, etc.
- It provides the necessary facilities for manual and mechanical operations, inspection, disinfection, cleaning, reconditioning, packaging, etc. of the SoUL kits.
- It is an economic unit, close to the block / village with adequate covered platforms and connected by good motorable roads.
- It offers the necessary amenities, such as water for drinking, electricity and fire-fighting etc.

- As far as possible, it is located away from grain mandis, grocery or shopping centers, grain fields, garbage dumping grounds, sewerage tanks and disposal plants, dairies, poultry farms, tanneries, factories, because their close proximity is detrimental to healthy storage facilities.
- Within a given general areas chosen for an A&D center, the choice of a particular site depends on access, availability of transportation to and out of the location, are its proximity to major beneficiaries.
- The location is not cut off from any part of the total service area by a river or other geographic barriers.

5) Storage Capacity of A&D Center

The term capacity of an A&D center refers to the overall cubic content of the storage area of that building, as well as the length, width, and height. The volume content of a storage area of that building is affected by a number of factors. Some of these are enumerated below:-

- Type of material to be handled;
- Handling system to be used;
- Stock layout arrangements;
- Land requirements;
- Office area required.

Setting up a fixed A&D center at a given location becomes a constraint on A&D center operations for number of months. The internal layout may be changed with a relative ease. But it is difficult to change the overall size of the A&D center. Through the A&D center size may be expanded at a later date or extra place may be leased, the resulting available space may not be ideal. In general, poor planning of the A&D center leads to either higher material handling costs in the A&D center with lower designed capacity or unnecessary space cost if larger space than what is require is designed.

6) Storage in A&D Center

One of the fundamental features of A&D center is systematic storage and safeguarding of material. In order to ensure that the quality remains the same and is well preserved, the following steps are taken:

- The A&D center is separated into different sections for storage of material according to their nature like unassembled kits (i.e. components), defectives, and assembled (finished) kits.
- Different stacking methods are adopted, depending on the size of the packages and the duration of storage.

- Assembled kits are stored in a separate section, generally close to the doors, and unassembled kits which are likely to remain in storage for a long time are stored a little away.
- Gangways and operational spaces between stacks are left for necessary disinfestations operations, re-stacking, turn-over, etc.
- The components / kits are periodically inspected to check that there has been no damage during storage.
- If there is defective / damaged components found during the assembly process and that the components are not capable further storage, the assembly supervisor can take action to have them delivered to respective vendor.
- If the material requires cleaning to bring them up to an acceptable standard by beneficiaries, this must be done by the assembly supervisor.

7) Functions of A&D Center

The functions of A&D center are as follows.

a) Receive the:- material →

Receive the unassembled kits / components from vendor. This receiving is to be done from vendor directly by coordinating with IITB. Count for proper quantity as per the document.

b) Store the material properly: - Provide →

The right and adequate storage and safeguard the material properly. Ensure that the materials do not suffer from damage, pilferage or deterioration.

c) Mixing of material: -

The SoUL kits are received from vendors are often requiring mixing and assembling together to satisfy need of final beneficiaries.

d) Deliver the SoUL kits to right place: - Fulfilling→

The block target of final beneficiaries is decided as per the number of students enrolled in current academic year. By considering this, A&D center issue the SoUL kits as per prior intimation from distributors on the basis of school campaigning and promotion.

e) Keep the records → perfectly in discipline: -

To maintain proper records and update receipt and issue of materials (unassembled kits to assemblers for assembling the SoUL kits and assembled SoUL kits to distributors for distribution)

f) Packaging and waiting for order: - Often A&D Center→

Person has to make package for delivery till the final order is received from final beneficiary. The SoUL kits are then loaded carefully in the transport vehicle to present to the students in appropriate condition.

g) Maintaining good cleaning: - Keeping the A&D center clean and neat → and is good order so that the handling, preservation, stocking, receipt and issue can be done satisfactorily.

- h) Keep proper control:** - **Keeping a** → vigil on the discrepancies, abnormal consumptions, accumulation of material, pilferage, theft etc. by implementing controlling measures.
- i) Arranging transport:** - **For** → distributing the assembled kits to the beneficiaries it is essential to plan and arrange proper vehicle. This needs to be done for keeping economy and quality. The placing the product upside down etc as per need is very much required to maintain the lamp quality.

8) A&D Center Operations

The essential processing of materials in an A&D center involves following operations:

a) Receiving Material:

An A&D center accepts the material delivered by a transporter / vendor and then accepts the responsibility for this material.

b) Dispatching Material:

An A&D center dispatches the defective components to vendor after completion of specified inspection and other formalities.

c) Sorting Material:

The materials are sorted out for appropriate storage area in the A&D center.

d) Storing Material:

The materials are kept aside where they can be found later, when needed.

e) Assembling the lamps:

The unassembled kits are received from vendors are often requiring mixing and assembling together to satisfy need of final beneficiaries.

f) Distributing the lamps:

The consolidated order is packaged suitably and directed to the right transport vehicle. The SoUL kits are then loaded carefully in the transport vehicle to present to the students in proper condition.

g) Record Keeping:

Maintain and update the records of each and every operation in appropriate format.

9) A&D Center Safety

The hazards for the material stored in an A&D center are of the following nature:

- Theft and housebreaking
- Fire
- Floods
- Riots and civil commotion
- Moisture, insects and rodents

An A&D center is constructed on a site away from colonies which breed anti-social elements. The selected site is also away from low-lying areas, rivers etc., so that the flooding might be

avoided when the river is in spate. The structure is designed in such a manner that the plinth is at least one metre above the ground level. The platform of the verandah and plinth of the A&D center are constructed in such a way that is made rodent-proof. It generally has a compound wall of sufficient height, with only one gate for entry and exit to ensure better and closer watch on incoming and outgoing persons and vehicles.

An A&D center is also located away from dumping grounds, garbage pits, etc., to ensure that insects which normally breed in such places, do not damage the material in A&D center.

Internal Safety

The owners of materials, their agents and other dealing with the A&D center are screened so that entry is permitted to only such persons as come on genuine business and do not indulge in pilferage or other adverse activities of sabotage, etc. sufficient surveillance measures are taken to ensure that the staff working in the A&D center do not indulge in pilferage, thefts, etc. should be left for this has to be decided also in relation to the uncertain needs of the future.

10) Material Handling

The handling of material is a human activity which has been performed since time immemorial. The construction of the great pyramids and other historical monuments all over the world called for the handling of various types of materials in various form methods. Material handling has now become an important and specialized function of all industrial activity. It is as important as, costs and the production process.

A modern manufacturing plant works on assembly line principles. In an automobile plant, the chassis moves along the assembly line where different workers attach different parts in turn tighten a bolt or make certain adjustments. Finally, the finished car emerges at the end of the process. A similar procedure is followed for other assembly line production processes. Before it reaches the ultimate customer, the product has to pass through a series of handling processes – from the procurement of raw materials to the sale of the final article.

The manufacturing establishment first receives the raw material or spare parts which go into the making of the product. They are conveyed to the place where they are stored. Then they are taken to the preliminary fabrication or manufacture or the first production process. Thereafter, they are again sent to the storage before they are moved into the various stages of manufacturing operations.

Once the machine and processing operations are finished, the semi-manufactured or finished product moves to final inspection and packaging. When all the manufacturing operations are completed, it is again sent into storage to await transportation to consumers.

Material handling is an essential production function. Organisations do not pay adequate attention to this function. On an average, fifteen to twenty percent of the cost of a product is incurred on material handling. Over and above this tangible cost of material handling and of labour and machinery costs, they are the hidden costs of material handling which arise from the damage of raw materials to the finished products, delay in transportation, deterioration in the quality of the product, waste of productive labour time and loss of production. This total material handling cost must be minimized by designing a proper system.

Material handling is undertaken at every stage of logistics activity, and is an integral part of the other elements of logistics function. Material is handled during the production process, in transport, A&D center, during packing and when goods are returned by the customer (i.e. beneficiaries) for one reason or the other. This would insure cost reduction in the operation of the overall material handling function and increase productivity.

Material handling involves the following point

- a) Receiving or dispatching of material involving unloading, loading;
- b) Flow of material within the A&D center;
- c) Inspection of unassembled kits / components and finished kits at A&D center;
- d) Sampling of components, intermediate assembled kits and finished kits at nominated stages;
- e) Verification and documentation.

Each of the above functions has been discussed in more detail in the following paragraphs.

Receipt and dispatch

The receipt of unassembled kits / spare parts or the dispatch of defectives, at the A&D center, or field storage facility may be considered a part of the transportation function.

Receipt

- a) Receipt of trucks, shipments, etc., in a nominated area or location.
- b) Unloading of individual truck or shipments.
- c) Storage of the material (whether unassembled kits / spare parts).
- d) Inspection of the material received.
- e) Documentation for receipts of material.
- f) Documentation for the storage of material.
- g) Communication to all concerned about the receipt of the material.

Dispatch

- a) Documentation and generation of reports for dispatching defective components.
- b) Inspect and verify if components actually defective.
- c) Receipt of undertaking letter for dispatching defective components.
- d) Coordination with courier service provider for dispatching defective components.
- e) Storage of adequate material to ensure uninterrupted assembly/distribution/repair & maintenance activities.
- f) Documentation of dispatches and storage.
- g) Communication of information about dispatches to all concerned.

CHAPTER 4: INVENTORY MANAGEMENT

1) Introduction –

Primarily, the first and most important step to commence in inventory management is to acquire accurate data in terms of facts and figures. Next, a set of rules and regulations is set up to protect and guard the information efficiently. Such information may become a crux factor in the improvement of internal operations, strategies and output.

These will include good practices like making accurate entries on every material receipts into the computer, setting up a replacement strategy on all items in the assembly center and be ready with specific guidelines on the control of defectives as well as excess inventory. Such effective inventory management habits will provide superior competitive advantage and will save cost, time and resources.

2) Benefits of Good Inventory Management -

a) Improves the accuracy of inventory orders –

Proper inventory management helps you figure out exactly how much inventory you need to have on-hand. This will help prevent material shortages and allow you to keep just enough material without having too much in the assembly center.

b) Leads to a more organized assembly center –

A good inventory management practice supports an organized assembly center. If your assembly center is not organized, you will have a hard time managing your inventory. Proper storage pattern will help to get material easily accessible in assembly center. This, in turn, helps speed up the assembly and distribution processes and ultimately keeps beneficiaries satisfy and happy.

c) Helps save time and money -

Inventory management can have real time and monetary benefits. By keeping track of material you have on-hand or ordered, you save yourself the effort of having to do an inventory recount to ensure your records are accurate.

d) Increases efficiency and productivity -

Inventory management practices, such as regular inspection, monitoring and keeping records in record book and Google spreadsheets, can help drastically improve your efficiency and productivity. This policy will help eliminate manual processes so your staff can focus on other – more important – areas of the project activities.

e) Meet demand and improve the speed of supply -

Inventory management helps you meet this demand by allowing you to have the right material on-hand as soon as your beneficiaries need them.

3) Ways to improve assembly center efficiency and inventory management**a) Good inventory management starts with upkeep**

Inspect your operation regularly and review your assembly center – just because it was well-organized when you initially started, doesn't mean that it meets your current standards. Have a daily checklist for the assembly supervisor, and hold him or her responsible for the upkeep of the assembly center.

b) Good storage pattern

Assembled kits are stored in a separate section, generally close to the doors, and unassembled kits which are likely to remain in storage for a long time are stored a little away, you'll eliminate a lot of unnecessary labor time, and your staff will think you are super considerate.

c) Internal Safety

The owners of materials, their agents and other dealing with the A&D center are screened so that entry is permitted to only such persons as come on genuine business and do not indulge in pilferage or other adverse activities of sabotage, etc. sufficient surveillance measures are taken to ensure that the staff working in the A&D center do not indulge in pilferage, thefts, etc. should be left for this has to be decided also in relation to the uncertain needs of the future. Give your employees some kind of an identifier (like ID cards, special t-shirts, etc.) that can distinguish those working in the assembly center and those that shouldn't.

d) Room for receiving

A lot of inventory errors can happen at receiving if assembly supervisor don't have enough space to work. Avoid giving him a small office at the end of the assembly center. Eliminating receiving errors will relieve you from all kinds of ugly issues later in the like missing components, kits etc.

e) Label every defective component

Put labels on 'defective components' to make it easier for pickers to choose the right inventory. It's all about reducing errors in the process – some simple preventative measures will save you from having to put out fires in the future.

f) Quality control

Take precautions, measures before taking any action while performing operations. This is called quality control, and adds another layer of responsibility. Therefore, inspect thoroughly each and every technical component for assuring quality level. This thorough inspection will help to avoid future spare parts buying cost and lamp defective rate.

g) Finish right, start tight

Give your assembly center the chance to finish day assembly and distribution processes and clean up before they clock out. By the end of the day your assembly center will be organized and your inventory will be right where it belongs, instead of just lying around waiting for the next day to start in confusion. You can probably imagine how much faster your staff will clean up at the end of their work day so they can clock out and get home, as compared to how sluggishly they'll get it done in the morning.

Before leaving your A&D center, any remaining or excess Good components keep in separate box for using it in next day assembly work. This practice will help to protect any physical damages and provide safety to all components.

*Figure5: Here's an example of **Good** components maintenance box used in assembly center, below is an illustration:*

**h) Don't let your assembly center become a dirty**

You know how in libraries / bookstores / movie rentals / shoe stores / any place that houses a large inventory of product for rent or sale, everything is neatly categorized and the sections are clearly labeled so as to assist customers in finding what they're looking for? Yeah. That's super convenient. Make signs and labels to direct your staff through your assembly center and help them find the inventory fast and easy, and, ideally, without having to continually bother supervisors by asking for directions.

4) How to Create Inventory Location Names in Assembly Center

Location names exist so you know where to put material, and where material is put. Sounds simple, but walk into any company and you'll find lots of items stored in locations that aren't clearly labeled, or don't have a well thought out, commonly understood name. A location name doesn't need to be too complicated or cryptic. In many enterprises, the people working there day to day will already have common terms they use to describe various locations. If that's the case, then build on the common understanding where necessary. If you have lots of locations, large rooms, or large storage areas, then this guide will help you organize your thinking on how to name locations.

Key Considerations

- ✓ Location names should be unique. No two locations should ever have the same name.
- ✓ EVERY physical space in your assembly center should have a location name. Even if you don't currently store anything in that space.
- ✓ Where practical, EVERY location should be labeled.
- ✓ The location labels should contain the full name of the location, and if possible, have arrows that point to the location
- ✓ If you have more than one "room" consider using room names
- ✓ Room names should be abbreviated (usually to a single letter) and contained in the full location names.
- ✓ Within a room, location names should ascend from top to bottom and from left to right

Figure6: Here's an example of a good location naming scheme using our assembly center, below is an illustration of the facility:



Why are we doing this?

If you store your items in a small area or one room, you don't need to do this activity. But if you have a large storage area, or more than one room, you're going to benefit by breaking down your space into manageable smaller chunk.

Some of the benefits are obvious:

- ✓ You can find locations faster
- ✓ There's no confusion about what a place is called

5) What are defective components?

Defective components means those components which are imperfect, faulty, doesn't work properly or not qualifying testing standards.

A) Reasons of defective components

- a) Parts assembled with the incorrect direction.
- b) Incorrect components used due to incorrect or missing instructions.
- c) Faulty components used without proper testing by the assemblers to reach their day assembly target.
- d) Parts damaged due to excessive material handling.

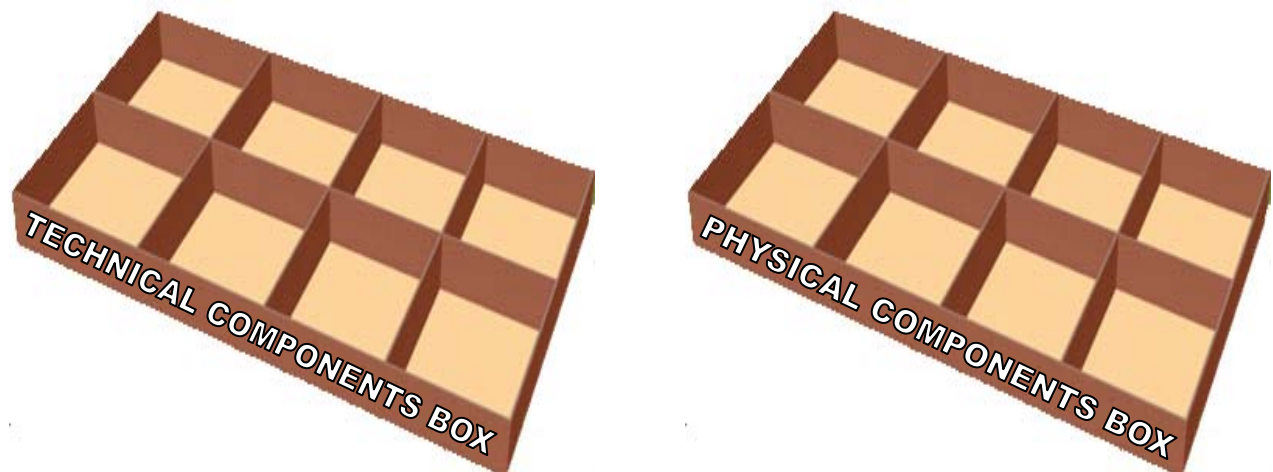
B) Defect Management Process**Defect management process includes the following steps –****a) Identification**

This step involves the finding of defective components. As per the guidelines Assemblers should do the thorough inspection and testing of components before starting the process of lamp assembling.

b) Categorization

When a defect is reported, it is typically assigned to a designated team member to confirm that the defect is actually a defect. Once it is confirmed, then defective components are maintained in specific boxes (i.e. technical and physical components maintenance box) and accordingly records are maintained by assembly supervisor.

*Figure7: Here's an example of technical and physical **defective** components maintenance box used in assembly center, below is an illustration:*



c) Assignment

Once a defect has been detected, it is then assigned to assembler to repair, if possible.

d) Re-use

Once a defective component has been resolved and verified by assembly supervisor, then the defective component will be considered as good component and it will be re-use for assembling the lamp.

CHAPTER 5: WORKER'S SCHEDULING AND PLANNING

1) Introduction

Planning (how to do the job) is the development of a detailed program to achieve an end (i.e. receiving, dispatching, storage, assembly, distribution, repair & maintenance and record keeping of SoUL lamps).

Scheduling (when to do the job) is an important tool for any operation, where it can have a major impact on the output of a process. The purpose of scheduling is to minimize the time and costs, by telling an assembly facility what to make, when, with which resource, and on which tools. Scheduling aims to maximize the efficiency of the operation and reduce costs.

Well-planned, properly scheduled, and effectively communicated job accomplish more work, more efficiently, and at a lower cost.

2) Scheduling represent:

- Time (duration) estimates for all tasks
- Start and finish dates for the tasks
- Names of staff assigned to complete the tasks
- Sequence of tasks

3) Purpose

The project in charge will use this proposed schedule scheme for planning, executing and controlling project tasks. Hence it will help to track and monitor the progress of the project.

The project schedule defines timelines for key deliverables and sets expectations for project progress and completion.

4) Who is involved?

1. Project in charge
2. Assembly supervisor
3. Distribution supervisor
4. Data Entry Operator

5) A&D Phase Completion Period

IP should complete the assembly, distribution and DIS entry work, within One Hundred and Twenty (110) days from the start date of the project.

6) Tasks and their requirements:

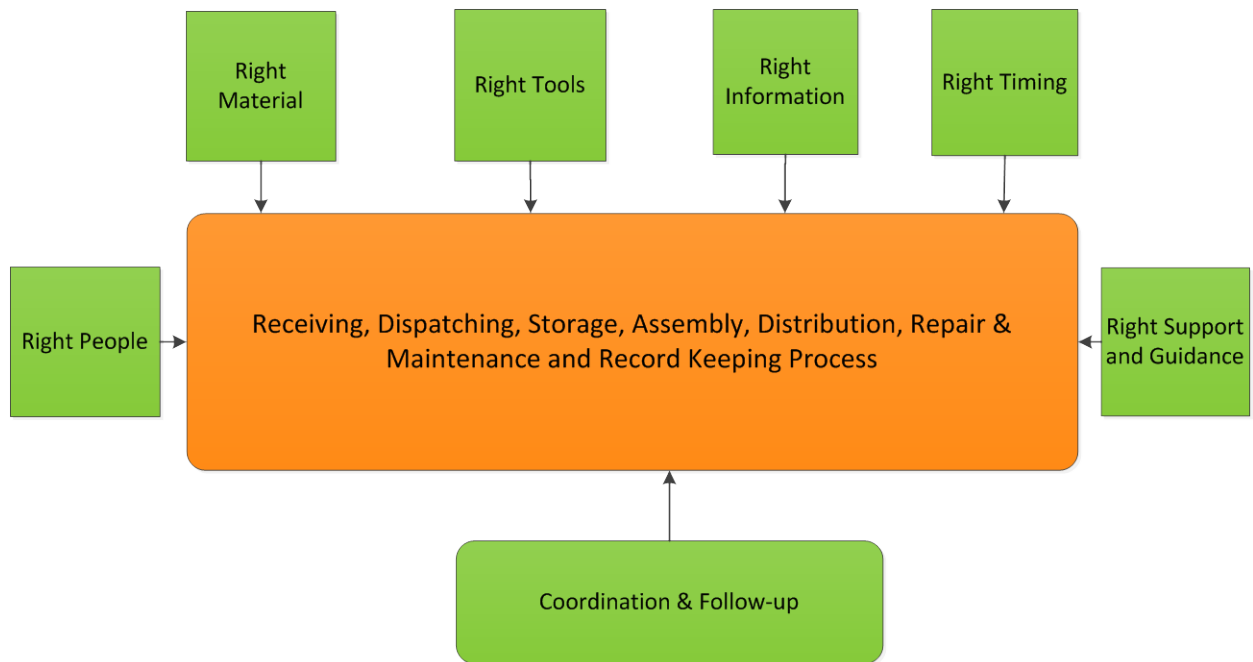


Figure8: Tasks and their requirements

Coordination encompasses the logistical efforts of bring together all necessary resources so the work is ready to be scheduled.

7) Key project tasks:

Following tasks are important and should be completed within assigned time.

- Assembly
- Distribution
- DIS entries (including other records)

8) Assembly, Distribution & Data Entry Planning:

Assembly, Distribution & Data entry planning can be completed in two ways. One way is based on the total days, and second way is based on the assemblers and distributors.

Based on days:

Assembly, Distribution & Data Entry Planning	
Based on total days	
Target	10000
Days	90
Per day assembly and distribution	111
Assuming 40 lamps/day	40
# Assemblers	3
# Distributors	3
Assuming 30 entries in 1 hr (i.e. 30*8 working hrs)	240
# Data Entry Operators	1
Expected assembly, distribution & data entry in 110 days	
in 30 days	3333
in 60 days	6667
in 90 days	10000
in 110 days	12222

Table1: Assembly, distribution & data entry planning – based on total days

Explanation:

Suppose a block has targeted of 10000 units then it could be completed within 90 days. To complete it within 90 days, we required 111 numbers of the lamp should be assembled and distribute per day. Considering 3 assemblers and three distributors, each one will complete 40 lamps of assembly and distribution per day. So if we consider three assemblers and three distributors per day, then they can complete 120 numbers of the lamp, but we considered as a round figure of 111 numbers of the lamp will assemble and distribute. One data entry operator per one hour will complete 30 records of entries so within 8hrs (working hours in a day) he will complete 240 numbers of records.

As per above scenario within one month (30 days), 3333 numbers of the lamp can be assembled and distribute. So in approx. four months (110 days) we can complete 12222 numbers of lamps.

Based on Assemblers & Distributors:

Assembly, Distribution & Data Entry Planning	
Based on # assemblers & distributors	
Target	10000
Days	63
Per day assembly and distribution	160
Assuming 40 lamps/day	40
# Assemblers	4
# Distributors	4
Assuming 30 entries in 1 hr (i.e. 30*8 working hrs)	240
# Data Entry Operators	1
<u>Expected assembly, distribution & data entry in 110 days</u>	
in 30 days	4800
in 60 days	9600
in 90 days	14400
in 110 days	17600

Table2: Assembly, distribution & data entry planning – based on # assemblers & distributors

Explanation:

Suppose a block has targeted of 10000 units, and we have four Assemblers and four distributors. If each assembler and distributor completes 40 lamps of assembly and distribution per day, then the total assembly and distribution count will reach 160 per day. One data entry operator per hour will complete 30 records of entries so within 8hrs (working hours in a day) he will complete 240 numbers of records.

As per above scenario within one month (30 days), 4800 numbers of the lamp can be assembled and distribute. So in approx. four months (110 days) we can complete 17600 numbers of lamps.

CHAPTER 6: MANAGING PROMOTION AND CAMPAIGNING

1) Preliminary Assessment – From Planning Perspective

A) Collection of Secondary Data:

Before starting project in a particular block, it is of prime importance to collect secondary data in order to determine the enrolled student numbers between the 5th to 12th standard and also the requirement of SoUL in that area. The collected secondary data will provide the basis of student enrollment and demand for SoUL in that block. This process should be accomplished in participatory and comprehensive manner.

The objective of this approach is not only to facilitate participatory decision making in the promotion and campaigning process, but also to improve further decisions to meet the beneficiary needs and to face the operation and maintenance challenges.

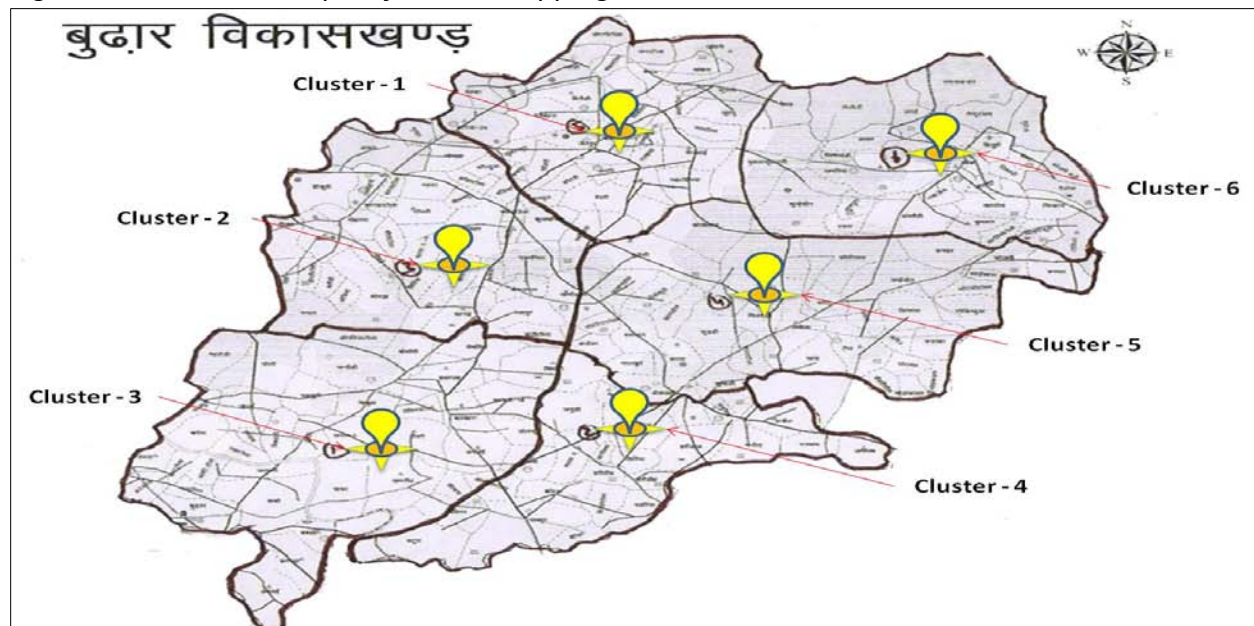
This initial process will get information of list of villages and gram panchayats, list of schools with address and DISE code, school-wise student enrollment data, school working days calendar, block maps with village clusters clearly marked, etc.

B) Cluster Mapping:

Cluster mapping serves as a tool to provide a visual representation of information in a particular geographical context. It is based on a stakeholder's perception with the focus on a certain location where the requirement and demand of SoUL lamp is more while comparing with other locations due to the electricity and other geographical problems. Cluster mapping allows you to define your cluster boundaries according to the presence of number of schools, enrolled students and density of population.

Cluster mapping is a process of categorizing the block locations in several small parts which allow you to concentrate on specific region in terms of number of schools, enrolled students and density of population.

Figure9: Here's an example of cluster mapping with in block, below is an illustration:



2) Demand Creation - Introduction:

Various solar programmes have failed in the past because they were supply driven. It is of prime importance to understand that people will only relate those solar products and related technologies properly that they really want themselves (demand driven). Furthermore, communities will only accept solutions when they understand them and see their benefits. Demand for solar products is only created when end-users have motivation, opportunity and ability to invest in it and which suits their needs and aspirations.

Often, the solar products of supply-driven projects is poorly used and maintained and financially unsustainable to support the repair and maintenance services, because the needs and desires of the local people were not considered sufficiently. In order to create demand for solar products, it is necessary to identify what the community members actually desire, as well as to identify what aspects of solar products will be of most interest to them. When these drivers are identified, they will be used to convince the community to demand the adoption of solar products.

Awareness Raising for Demand Creation:

It is a systematic activity carried out by the institutional partner across the community/project area together with the assemblers, distributors to explore and promote the SoUL project at field level by observing, asking, listening, looking and demonstrating the SoUL lamp to the local community. This activity normally conducted during the initial phase of the project.

By applying awareness raising tools you can support developing drivers for SoUL lamp within a community. Awareness raising tools aim on the one hand at making people aware of a certain benefits of SoUL lamp, and at the other hand, it aims at integrating different stakeholders about positive changes in education and associated benefits to the students. Awareness raising, e.g. with different media campaigns, also helps to reach those stakeholders that are often forgotten (e.g. radio campaigns, videos, posters and pamphlets, or internet and email).

To raise awareness for SoUL lamp it is important to promote its visibility and credibility within a community or society. It is also of prime importance to inform and educate people in order to “elevate their level of knowledge” about the different options regarding solar products. The intention is to influence their attitudes, behaviors and beliefs towards the achievement of clean light through solar lamp in their community. The ultimate goal of a solar lamp awareness raising programme is to achieve such a degree of understanding and motivation that the members of the community can participate in the decision making process at a more informed level and that they participate in the realisation of the decisions taken.

Effective awareness raising will employ a variety of different communication approaches, techniques and tools to ensure that the central message is received and understood by a heterogeneous audience. Awareness raising demand time and financing and therefore require adequate support in planning, promoting and performing these activities. Such support will include funds, monitoring and networking.

A) School Campaigns:

Schools present an opportunity to reach thousands of students with secure platform to promote and demonstrate solar lamps. They provide unique opportunities for awareness raising as they bring large groups of people together for learning purposes and usually have systems for production and dissemination of educational material. Schools can also provide an entry point to the community as a whole.

Figure10: The idea: Main actors involved and their roles in a solar lamp promotion and campaign.

Child	→	a key resource (Beneficiary)
School	→	knowledge centre
Teacher	→	sensitive leader
Community	→	an equal partner

Empowering Young People as Promoters:

Empowering young people as promoters in the field of solar technology is a way of assuring that a project or programme has a greater effect and more long lasting impact on the communities. When trying to find solutions to electricity problem and ways to improve access to clean light in any given community, it is essential that youth become involved, so they themselves can work together in an organised fashion to identify appropriate solutions to the problems, and then take ownership” of the measures to apply those solutions. There are many tools that can be applied in order to involve youth in community based action. This can help raise their self-esteem and also encourage other youth to take similar actions.

Why Involve Youth?

Young people need opportunities to develop skills, and when adequately directed can easily and effectively support organisational work without a lot of experience. Solar programmes should try to involve young people as promoters basically because they have a lot of extra time and energy — and are tremendously creative. In this media age, young people have access to

tremendous amounts of information that can sometimes be overwhelming (using internet based social networks, for example), but they really do not know what to do with all of it.

Making the Change:

Young people are prepared to take risks in confronting conventional structures. They are a sector of society that will be able to assure sustainability. Precisely because they are inheriting a world, they know that the world is complicated and it will affect them. Indeed, young people are often more sensitive and intuitive than many adults, which can give them and almost instinctive sense of what will work or not and where a program should be directed. "One way to make sure change lasts is to work with young people, because they will take what they learn into the future. Each of us, no matter what age we are, can adopt the attitude of a young person to always be willing to learn and try new things".

B) Advocacy - Influencing Leaders:

"Advocacy is the action of delivering an argument to gain commitment from political and social leaders and to prepare a society for a particular issue". Advocacy involves the selection and organisation of information to create a convincing argument, and its delivery through various interpersonal and media channels (e. g. public speaking, project visits, requests, engaging celebrities, radio and newspaper). Here, we will focus on one of the essentials of advocacy: influencing and involving important leaders, because political support together with support from community leaders and religious leaders can give a solar-related project or campaign a powerful boost.

Advocacy as a Tool to Involve Leaders on All Levels:

Creating awareness and gaining the commitment of decisionmakers for a social cause is very important to influence policies and practices that affect the lives of people – particularly the underprivileged. Therefore, the goal of advocacy is to make the issue in concern a political priority and to achieve change in policy and practice.

To gain the commitment of leaders, advocacy work consists of a set of tools including meetings with the relevant decision makers, public speaking and involving the media to reach the general public.

In the first instance, advocacy may be carried out by key people in state and national agencies, as well as special ambassadors, but is gradually taken over by people in regional and local leadership positions, local NGOs and by the print (e.g. posters and pamphlets) and electronic media.

Why Should You Try to Influence Leaders?

"Strategic networks and involvement of political, religious and local leaders are basic requirements for a successful project, because leaders can play a role by openly supporting the solar project in the media. They are emphasizing the solar lamp project topic in meetings with other leaders, or by addressing communities directly". The involvement of leaders will increase public attention to the solar lamp project topic and it will also influence social norms directly. Community norms and values can change through the support of leading community figures for certain measures. There is a need to involve those leaders who are especially regarded as credible, trustworthy and popular among the public.

C) Creating Information Material:

Creating appropriate and specific information materials for solar program is of key importance and a way to assure a strong and sustained impact and behavioural change in a given community or area. Effective information materials can awaken curiosity and interest in the subject matter. Awareness raising materials is an important way to reach a lot of people.

Why Is It Important to Develop Information Materials?

Basically used to enrich a horizontal learning process within the group or community, information materials are a way of sharing useful information in appropriate and interesting forms and on a timely basis to those people and groups who can make the best use of it. Information materials can raise awareness regarding the existence, nature, extent and severity of problems early on in the learning process and, at a later stage, can provide useful and necessary information on technical options and solutions, as well as recommendations on the appropriate use, operation, repair and maintenance.

If not provided to the targeted audience at the right time, external information can short-circuit the learning process of the group and hinder the expected program results. As different people understand different things, to have access to sequential and orderly information is important. Whereas some information materials (e.g. poster and pamphlets) might be designed for general consumption of a wide community audience, other materials with more detailed technical information might be directed to a specific group (e.g. students, parents or teachers) or even individuals with specific responsibilities (e.g. SRC Managers responsible for repair and maintenance). In this way, the people who receive the information might apply it directly or, in turn, disseminate and transmit it to others, outlining steps to teach and train others.

Who Should Be Involved in Creating Information Materials?

Creating effective information materials is generally a multidisciplinary team process, as it requires diverse skills and experience, including a clear grasp of both social and technical issues. In addition, such an undertaking also requires one person who can manage and maintain the broad vision of both text and graphic materials, and how to merge them. Much of the process in developing materials has to do with coordinating the different persons and perspectives involved in the process (writer(s), designer, artist, and printer). And, of course, indirectly, the community (the users of the information) must be at the centre of the process — it is their need, their implicit and explicit demand for relevant information, which must be generated by a participatory learner-centred development process.

Characteristics of Information Materials

Once an initial problem identification and information needs assessment has been carried out, planning the production of material required for the program can begin to take place. Both the written and visual language of the material should be carefully crafted to reflect the context of the users. For graphic purposes, it is critical to carefully consider the local culture and regional characteristics of where the material is going to be used, including dress codes/styles.

Depending on the target audience, be it for adults or children, key communication elements — such as colloquial vs. technical language — should be identified. In areas where people do not necessarily know how to read and write, it will be necessary to prepare information and training materials that are suitable for the language and cultural context, relying a lot more on clear illustrations. Peoples' levels of visual literacy can also vary, often depending on their previous exposure to visual communication media. For those less accustomed to looking at visual images, make sure that they will be able to read the images well. But in order to be able to apply and impact of the materials, it might also be useful to develop the information not limited to a very specific area by identifying images and “types” that are sufficiently universal to be used in a number of similar areas — i.e. rural, urban, indigenous, etc.

Another consideration has to do with accompanying the material with a section or guidelines on how to use it — suggested target audience, how/when/where to display or distribute, etc. A distinction should initially be made if the information will be geared toward more technical people, like for example; people who would have clear spelled-out responsibilities related to the assembly, distribution, operations, repair and maintenance services of solar lamps. Although not commonly taken into consideration, it might be useful to make some sort of provision for the maintenance and monitoring of the useful life of the materials. For example, a simple feedback form (possibly with an email or internet address) can facilitate feedback for long-term evaluation and budgeting purposes.

For budgetary purposes, also consider the print run (amount of printed material, including formats, colours, quality of printing, etc.). Will the material be for sale, distributed freely, easily reproduced at a local level? If involved in a local programme, screen/stencil printing might be a way to get local people involved, with a view that the materials could at least be designed with the potential of going to scale.

With Variations, a Typical Materials Development Process Will Have The Following Stages:

1. Developing the concept, timeline and budget for the whole project
2. Identifying the writer(s) for the text and artist(s) and/or graphic designers for the drawings, illustrations or other graphics
3. Deciding on the format and digitalizing first concept with text (getting the messages right) and graphics
4. Sharing drafts with your work group
5. Field-testing the materials to find out how potential users interpret the messages and visuals
6. Incorporating group's and users' feedback into the final draft including graphic design
7. Having the revised proofs, final print and distribution

D) Different Materials, Different Media:

Posters, pamphlets, stickers and banners: with striking visual images and provocative oneway messages, these materials can be publicly displayed indoors or outdoors to wide audiences. Factsheets, booklets, newsletter, guidelines and manuals: although time-consuming to produce and distribute, using the written word and pictures helps to communicate in a long lasting form.

Mass media — newspapers, radio, videos and TV and internet: make use of the mass media to publicise information, opinions and concerns to a larger audience and to influence people in power and decisionmaking positions. Mass media reaches very large audiences and is an efficient means to widely publish. Today the internet is used in participatory processes and it helps to link participants from different regions or countries, share information or distribute educational material.

Media Campaigns as a Tool to Influence Both the Public Opinion and Policy Makers

As the media are part of the lives of many people, they can give a basis for public discussion and the reconsidering of norms. Case studies show that the media can have an immense educating impact on the public opinion and behaviour. Also, the media can influence the decision makers indirectly, when the public gets aware of a topic and applies pressure. The media play also an important role in advocacy work.

Summarised, the media are useful for the following reasons:

- Change public attitudes and behaviour
- Inform the public about your issue and proposed solutions
- Recruit allies among the public and decision-makers
- Raise money for your cause
- Get your issue onto the political public agenda
- Make your issue visible and credible in policy debate
- Influence decision makers and opinion leaders

E) How to Plan a Media Campaign

The following six steps are the main ones for developing a media campaign in general. The questions posed will guide you through your planning:

Step 1: Define Your Audience: Whom do you want to reach with your message? Can you reach this audience within available resources? Do you know enough about your audience to select effective messages and channels of communication?

Step 2: Set Clear Objectives: What is your overall goal? Do your plans fit with other activities and plans in the community? Have you identified your objectives?

Step 3: Define Channels and Vehicles for Communication: Which channel is the best to use for your targets?

- Raise awareness/ spread information: accessible media with broad reach (radio/ posters and pamphlets)
- Change attitudes: channels with emotional impact (television, radio)
- Model specific skills: television works best because of sound, sight, and motion
- Change public opinion: look for news coverage via editorials, news interviews
- Complex message: print presentations

Step 4: Identify Effective Messages: Have you chosen a message for your audience that has the right message content (or theme)? Does the message have the right tone (light or heavy) and the right appeal (rational or emotional)? Would using humour or fear be appropriate and effective? Any message you choose should pass the “What?” “So What?” “Now What?” Test:

- “What?” refers to the basic information being conveyed
- “So What?” addresses the reasons or benefits for action
- “Now What?” clearly defines some desirable and productive action

Step 5: Implement Your Campaign: What work needs to be done? Have you made a timeline? When and how long will you run your campaign, and with what intensity? When will you contact the media channels you have selected, obtain the messages you selected in the format required? Have you set out a work plan that defines required tasks, the people responsible and the timing?

Step 6: Evaluate Your Campaign: Does your campaign track coverage (process indicators)? Does it generate additional media coverage? Can you see changes in knowledge or attitudes (outcome indicators)? Are there any letters or phone calls with questions on the topic?

F) Media Campaigns - Posters and Pamphlets / Radio / Video / Internet and Email

The media (television, radio, print media, internet and email) play a significant part in spreading information on solar lamp program and in awareness raising. They enable to influence and change public opinion and behavior on an issue. This can lead to public pressure on the local policy actors, and can indirectly influence decision makers as well. Furthermore, the media can play a role as an advocacy tool.

1. Posters and Pamphlets

Here, we will focus on print media, especially on posters and pamphlets. Being placed and handed out at public places and prepared with an eye catching and strong visualisation, they are an efficient tool to raise awareness of solar lamp program and to focus discussions about it.

Why to Choose Posters and Pamphlets as Medium to Reach Your Targets?

- Posters and pamphlets are an efficient tool to influence the public opinion because they can reach wide and specific audiences (students, parent and teachers), and they are accessible to people who are otherwise isolated by illiteracy or poverty.
- The involvement of the public will increase the decision makers' attention to the solar lamp program and it will also influence social norms directly. According to this, posters and pamphlets can have a direct effect on the public attitude and behaviour.
- An eye-catching poster or pamphlet with strong visualisation does not necessarily need words on it. They can hence also reach illiterates or deaf.
- Posters or pamphlets can contain an address of a website or an email-address where people can find more information or ask questions about the solar lamp campaign.
- A series of posters can help making the solar lamp campaign familiar and heighten the educational impact. Different audiences can be attracted within the series, which leads to a wider circulation of solar lamp program knowledge in society.
- Posters and pamphlets can also give written information in areas where there are few illiterates. This enables to emphasise main messages and to give educational information.

Things to Consider Before Applying Posters and Pamphlets

- Find out if posters and pamphlets are the right media to reach your targets. If you cannot express your message in pictures, radio might be better in some areas for reaching illiterates. Posters usually work best with short slogans that emphasize the main message.

- If the posters and pamphlets are part of an overall media campaign, it could be beneficial to use a corporate slogan or figure that is recognisable within all kinds of used media. Make sure you use identical information in all media.
- Most material uses drawings and symbols. The correct understanding of those depends on existing cultural conventions. This can become a problem when producers of material are from a different cultural background than the target audience. Avoid this by employing a local artist.
- The flyer/ poster should be designed to have maximum impact on your audience. It should be eye-catching while avoiding being sensational.
- If you produce educational material, the content should include a simple presentation of the facts relating to your issue, and a clear statement of what you want your audience to do.
- Posters and pamphlets are usually a oneway medium and most people cannot ask for further information. To avoid this, the public can be involved in their production (e.g. in workshops) to make them a two-way medium.
- Consider how the posters and pamphlets will be reproduced (e.g. photocopying, printing). It is important to know how many colours can be used and if there are photographs, images or logos that you must include.
- Make sure people will know who is talking to them: Include contact details like phone numbers and web addresses.
- How you distribute the pamphlets or where you place the posters will depend on your target audience and the resources you have available. If you have very limited resources, you may decide to target the distribution very specifically to key audiences. Make sure you are allowed to place posters and hand out pamphlets in your target area.
- Posters and pamphlets should be a part of a wider communication process that encompasses other awareness raising instruments.
- Posters and pamphlets are printed on paper and being littered after their use. This means that there will be a lot of waste produced by choosing posters and pamphlets as media.

Design Principles and Ideas for Posters and Pamphlets

Posters and pamphlets can be used as part of your public campaigning to raise public awareness among large numbers of people. They should be tailored, with particular messages and approaches, depending on who your intended target audience is. The following ideas and tips help you to get an idea of how to produce posters and pamphlets:

- The main message needs to be seen on the first sight: Use big letters, symbols or figures and few backgrounds.
- For texts it is important to answer the questions Who? What? When? Where? Why? and How? at the beginning.



- Keep the information given short and interesting.
- Emphasize benefits of your issue.
- Do not put too much information on it, just key points.
- If you want to use a slogan make it short and memorable.
- Use uniformity in layout and logos in campaign material.
- Posters in a participatory setting should be open for interpretation, in order to invoke discussion and lead to creative thinking.
- Promotional/ awareness posters are clear to the viewer at a glance and usually have one main slogan and few details. They say a lot with just one picture or slogan and should be very eye-catching and memorable.
- Visualising the result of behaviour change can help encourage the adoption of this behaviour change. A good example is a poster where a solar lamp is used for study purpose to demonstrate how much kerosene could be saved each month.
- Cartoon figures are often used to target students.
- Often, educational posters have a lot of information and interesting details meant for a closer look. They can be used at schools as teaching material, but usually they are not very useful for raising awareness because on the streets people might not stop and do not necessarily look at them for long.

Figure11: Here's an example of a pamphlet for creating awareness - Anandwan, Nagpur; below is an illustration:

Million SoUL Project (MSP)

"Right to Light"

OVER 1.5 BILLION PEOPLE - A QUARTER OF HUMANITY - HAVE NO ACCESS TO ELECTRICITY

THEY USE VERY DANGEROUS AND EXPENSIVE KEROSENE LAMPS FOR LIGHTING

OUR SOLAR URJA LAMPS ARE THE SOLUTION

रात में होने वाली बिजली-कटौती अब हमारे बच्चों की पढ़ाई में स्वाकट नहीं बन सकती।

The Specific Goals of MSP:

- Provide high quality, affordable clean light for study purposes to school students in rural India, in the fastest possible way,
- Involve local people in the SoUL lamp assembly, testing, campaigning, distribution, repair & maintenance.
- Ensure that the SoUL is in working condition throughout the warranty period.

Only Rs. 120/-

ANANDBWAN
forest of joy
Nagpur
Contact Person Name – Mr. Anand Patil
Phone Number – (04321) 222345 Mobile Number – 9876543210

2. Radio

Here we will focus on why and how to develop an appealing radio campaign, which reaches a wider audience than any other medium. Also, radio campaigns are a cheap method to spread information about solar lamp related projects widely.

Main Stakeholders and Target Groups

As the central aim is to spread information and raise awareness of solar lamp program and so change people's attitudes, your target group are people in rural areas who have no or few information about the topic. Radio reaches a very wide audience.

The main actors of a radio campaign can come from the local level: You can just call the local radio station and ask if they are interested in your topic. The station might help you, as well as local govt. administration, to get a recorder and make up an interesting broadcast.

It is also possible to reach nationwide radio stations: you can try to involve local decision makers to support the application and then ask directly at the stations if they want to broadcast your campaign.

Why to Choose a Radio Campaign?

Radio Campaigns are an efficient tool to influence the public opinion because radio reaches a wider audience than any other medium, and is accessible to people who are otherwise isolated by geography, conflict, illiteracy or poverty. The involvement of the public will increase the decision makers' attention to the solar lamp project topic and it will also influence social norms directly. According to this, radio campaigns can have a direct effect on the public attitude and behavior.



Figure12: Radio - a medium that can be used almost anywhere nowadays.

Radio also has the power to motivate people by building on oral traditions like songs, which help to get to the peoples heart. In addition, radio listening can be a group activity, which encourages the discussion of educational issues after the broadcast.

Community radio stations can play a significant role in increasing participation and opinion sharing, improving and diversifying knowledge and skills and in catering to health and cultural needs.

Things to Consider before Applying Radio Campaigns

- Find out if the radio is the right media to reach your targets. Many rural communities now have access to radio, and some read national newspapers on a daily basis.
- Populations may be more easily influenced through television, while professional audiences may respond to articles in key publications and periodicals.
- If the radio campaign is part of an overall media campaign, it could be beneficial to use a corporate slogan that is recognisable within all kinds of used media. Make sure you use identical information in all media.
- Radio campaigns are a cheap method to spread information, but they should be deliberate, in particular they need to be basic and memorable for anyone with any education.
- For making a broadcast you will need a recorder. It is also possible to borrow one at a radio station. Maybe you can also make the broadcast there.
- Radio campaigns should be a part of a wider communication process that encompasses other awareness raising instruments.
- Radio is a oneway medium and most people cannot listen again to a show or ask for information to be repeated. To avoid this, telephone calls or letters with questions on the campaign should be enabled to make it a two-way medium.
- Many people lack access to radios, electricity or the batteries to power them. Therefore, radio campaigns need to be appealing and burning themselves into one's memory at the first listening.
- Check religious background of the specific area before planning the radio campaign. The campaign can lean on religious issues but should definitely not break with any religious rites.
- The title and opening line of a presentation are important, since they will determine whether you attract the attention of listeners.

Ideas for Radio Campaigns

There are lots of ways to create a radio campaign: Short onff programmes can be broadcast to highlight or explain particular issues, whereas series of programmes give a longer period for the introduction of a set of ideas. Below you can find few different ideas how to make an appealing radio campaign for your issue.

- a) **Participation, Local and Community Radio:** Individual radio programmes can be made with the direct involvement of poorer people, through interviews, phone-in programmes, letters, or recordings of outside events. Involving members of the audience in broadcasting itself, building up local content, and enhancing the relevance of programmes is not just good developmental practice — it can make for better radio as well. Most people are able to speak on radio expressively after only minimal instruction, so community radio provides a means to voice local concerns, as well as a way to reach people with messages.



Figure13: Radio is a medium that allows for almost anybody's participation.

- b) **Radio Spots with Traditional Songs:** Radio has the power to motivate people by building on oral traditions. To carry a message a radiospot can for example rely on traditional songs as well as a composition of solar lamp messages, like “SoUL is our Goal”

3. Video

Here, we will focus on why and how to prepare video material for solar lamp project's promotion and awareness. As a participatory and visual medium, video can both give locals a voice and convey complex ideas in comprehensible formats. Due to this, it enables to teach specific solar lamp related skills.

Main Stakeholders & Target Groups

Your target group is a specific audience, watching or producing the video. They can be living either in rural areas or in urban ones. Make sure you address the right audience by considering the particular cultural background. For producing a video the main actors can vary, but you will need the equipment and probably professional support. Also, the locals and local decision makers can participate in the production, as you can handle over the camera.

Have a look at the different ideas of producing a video further down, to see which kind of video needs which actors to take part.



Figure14: Video is a participatory medium.

Why to Choose Video as Medium to Reach Your Targets?

- Once you have the equipment, it is easy to produce or show a video.
- Video can overcome literacy problems.
- Increasingly, people are already accustomed to moving images, and video is as a result seen as less of an external medium.
- As a visual medium, video can convey complex ideas in comprehensible formats.
- By handing over the camera, people are free to record what they regard as important. Video is a good tool for pushing public participation.
- Students, parents and teachers participation can be brought forward
- Tapes and smart cards can be used repeatedly, if needed. Especially for this reason, it is valuable as a training tool. Due to the vision and emotional impact it enables to teach specific skills.
- A short, high-quality video, video news release or film clip produced by a communication professional will attract coverage particularly from the broadcast media. The videos can be screened during “Open Days” or at special events organised for solar lamp project workshop or event.

Things to Consider before Applying Video Campaigns

- Find out if video is the right media to reach your targets. It is not as widely spread as the radio and might not be common in all rural areas. Make sure people do not feel short taken by producing or showing video material.
- If the video is part of an overall media campaign, it could be beneficial to use a corporate slogan that is recognisable within all kinds of used media. Make sure you use identical information in all media.

- Equipment costs — especially for productions of a high quality — can mount rapidly. It is usually advisable to seek expert advice over what to buy, although in many countries there will be a limited range to choose from.
- Videos should be a part of a wider communication process that encompasses other awareness raising instruments.
- Equipment can break, especially in extreme conditions.
- Video needs careful planning, and can be time-consuming.
- It requires electricity: rechargeable batteries only last for a few hours each.
- Use of video almost always requires an input from experts in the field. Results from applications of video without this expertise can be disappointing. It is helpful to ask experienced people and get some tips before starting.
- It is important to consider the cultural background of the specific audience when producing a video, to make sure the message is going to be noted.
- Many people are excluded from watching videos at home because they do not have the equipment, so it is important to show them at public places.

Ideas for Producing and Showing a Video

There are lots of ways to create a video and many different types of them: educating videos, training videos, participatory videos, research videos and quality videos. Below you can find a short description of each of those to get an idea what a video for solar lamp project could be like:

a. Educating Videos:

For solar lamp project the most important sort of a video is an educating video. As a visual medium, videos are good to teach specific skills like how to assemble and distribute the lamps. It is easy for the audience to get the point and imitate the shown contents. The video has to be appealing, so it is good to present the key points in a (funny) story, so that it is not boring to watch the video.

b. Training Videos:

When non-professional filmmakers produce a video, this activity is generally recognised as participatory video. Before pushing the record button, filmmaking aspirants attend training seminars on production techniques, with good facilitation, so that filming will be more than just an individual experience. Regular and competent training provides guidance for the whole process of producing a video.

c. Participatory Videos:

Participatory video refers to a particular way of using the camera that emphasises the participatory character of a video activity. The filming is used as way of identifying and discussing central issues in a community and the underlying social processes. The video films produced are shared with the community, thus initiating community led learning. Participatory video is a very effective means of advocating social processes and can help coordinate community action. Quality and outreach with this video approach, however, are less important. Participatory video is more about team activity than creating a product. To increase the impact

of the participatory video process, it should be well embedded in the overall communication strategy.

d. Research Videos:

Video is also used in research activities. The camera can be used to gather information through, for example, interviews or filming particular school campaigning practices. It can also be used for reflexive research. The use of video for research is often part of other forms of video making.

e. Quality Videos:

Some video activities are clearly product driven, in that the producers strive for the highest quality film as an end product. This is particularly important when public relations are involved. The outcome of the video activity should be a professional film. A video produced as part of an awareness campaign, with the intention to broadcast it on national television networks, needs to be of broadcast quality. This requires a film crew of local and/or external professionals. Inevitably, this means comparably high production costs. The result could be a stand-alone film, with loose links to the main focus of a project but appropriate for universal use.

f. Showing/Publishing a Video:

Videos can be published and shown in many different ways: They can be watched or shown in households, at public places like a town hall, or be published on internet pages of private persons, NGOs or video pages like YouTube. Videos can also be used as training material at school, university or in specific courses.

4. Internet and Email

Here we will focus on why and how to use internet and email, which enables people to have access to information on solar lamp project from all over the world. Through networking, for and email people having access to computers can take part in actual solar lamp project related discussions and activities easily.

Main Stakeholders and Target Groups

The target groups of your work are mainly people who already know something about the topic and search for more information. They might be little or well informed and from any location, so you need to consider different levels of knowledge.

If you cannot do it yourself you will need someone for helping you with creating a homepage. Sometimes there are courses on creating website, otherwise you can ask at organisations like other NGOs or IITB if they might help you or know someone specialised.

You can plan internet and email campaigns on the local level, but most of the information given will be accessible all over the world.

Why Choose Internet and Email as Media to Reach Your Targets?

Internet and email are in fact different tools that are used in an integrated way. The internet contains website, fora and files, where you get information, do research and download. It can also be used for online discussions in fora, and often you can register for an email newsletter for a specific page or campaign. Email is mostly being used for advertising (e.g. for an activity) or for networking, especially in groups. It is very useful to send files to each other.

For the following reasons it is useful to work with email and internet to spread information on solar lamp project:

- The internet is the most interactive medium you can choose. In opposition to radio, print media and television, people having access to a computer can take part in the internet. They can do research, send files to each other and click on links they are interested in. According to this, the internet is a two-way medium through fora, networking and email: People can ask questions and discuss directly
- It gives people access to sources from other states and countries, and enables exchange of information between groups
- E-mail enables networks to function more efficiently: Key figures can download information and send it as printed copies to other members, or pass it by word of mouth, thereby reaching the majority who are unlikely to have access to a computer
- Information and communications technology can also enable pressure groups within a government to tap into international literature and compare their government's record to their internationally recognized obligations
- Electronic networks can create forums for informal discussion specific to particular groups
- Internet gives women's groups in particular access to communication in a public space that would often otherwise be denied them



Figure15: The internet is an important tool to get access to information, in particular for women, who often have less access to communication.

Things to Consider Before Using the Internet and Email

- First, it is important to find out if the internet and email is the right media to reach your targets. Many people lack access to computers and internet, and usually you just reach people that are already aware of the topic, searching for more information.
- If the internet and email campaign is part of an overall media campaign, it could be beneficial to use a corporate slogan or name that is recognisable within all kinds of used media. Make sure you use identical information in all media.
- It is also important to understand that internet and email only support other media and should be a part of a wider communication process that encompasses other awareness raising instruments. On its own, internet and email cannot achieve that much but combined with other media as well as other awareness raising and communication tools in the solar lamp project. But it can help to achieve your objectives very well and cheap.
- The main challenge is to create website that are accessible and attractive to a wide range of people while, at the same time, contain enough information for those who are really interested.
- Internet and email might not be the best medium to raise awareness, because it reaches less people than for example the radio. It is usually better for giving deepened information on a topic.
- As the internet and email are most useful combined with other media, make sure you state and write the link for the page in all other media used.
- When you send emails make sure they are not being treated as spam by their receivers.
- The realisation that electronic information can empower civil society has been fully recognised by some governments who fear such developments and have tried to censor content.

Ideas for Using Internet and Email:

Several organisations run non-profit awareness campaigns on the internet. The internet can be of significant use in campaigns, but even if it is not for running the campaign itself, it can be used for networking and dissemination of information about the campaign. The following examples show several ways of how to use the internet in campaigns.

- Advertisements on the web: Consumers can be directly reached through advertisements on the web, on web pages of information providers, newspapers, newsgroups, search engines, bookstores and government homepages.
- Source of public information: Through the internet, campaigns can provide an additional source of accessible information to the public such as information on how to save electricity by using solar products. Several campaigns mention their web addresses in their conventional campaign material. It is a handy tool to use together with commercials, posters or PR activities.

- Networking: The internet can be a great tool for networks of volunteer activists, teachers or students involved in different programmes and initiatives. Through the internet, plans, data and results can be shared among participants. The internet can also help mobilise members of a network for certain public action at the right time.
- Resources for the solar sector: The internet is helpful in providing professionals in the solar sector with relevant and upto-date information. This includes fora for online discussions, ordering services for literature and promotional material, database access and documented experiences from other initiatives.
- Online discussions: Campaigns could provide sites with online discussions or message boards on solar lamp project topics. Participants might post their reactions to an ongoing discussion.
- Another idea is to send email newsletters on programmes and actions to inform interested people about the new development and possibilities to participate in the solar sector.
- Also there can be educating games and quizzes to address especially children



Figure16: Bringing together school students to jointly discuss solar lamp benefits— a good way to raise awareness.

CHAPTER 7: MANAGING PAYMENTS

1) Introduction:

Managing payments and incentives from both the sides i.e. Institutional Partner and IIT Bombay, in particular, have played very important role in previous phase and helped to complete project activities on timely manner such as:

- Project promotion and campaigning
- Lamp assembly and distribution
- Monthly salary of staff
- Wages to assemblers and distributors
- Monthly honorarium of SRCMs
- Closing audit of data, funds and material

The process of managing payments and incentives from both the sides i.e. Institutional Partner and IIT Bombay was more complicated and time consuming in previous phase. Due to this reason many difficulties were faced by all stakeholders. Many delays and unnecessary follow ups are done from both the sides.

Therefore, avoiding such difficulties in current phase, IIT Bombay has adopted the mechanism of milestone based payments and incentives.

2) Milestone Based Payments and Incentives:

IP and IITB should be agreed to the milestone based payments described below. IP shall, upon satisfactory completion of the milestones in the order as listed, will be eligible to receive the corresponding payments from IIT Bombay. All the payments are subject to the verification by IITB of the report submitted by IP against the actuals and other supporting documents / records.

#	Milestone (to be reached by IP)	Month ¹	Payments from IITB to IP
1.	Submission of signed MoU, including annexures, to IITB.	--	Rs.50 x 500 lamps x <i>Number of blocks</i> Note: This advance amount will be settled against fund deposited and 3a and 3b for 500 lamps.
2.	Submission of secondary data and planning report ²	Before the start of training	An incentive of Rs 5000 per block report will be given, if secondary data are submitted one week prior to actual date of training for that block.

3 a	Submission of Monthly Assembly and Distribution report ³ (as per performance from 21st of previous month to 20th of current month)	By 26th of each month	Rs. 26 per lamp distributed that month, subject to realisation of remittance as per clause 2.6
3 b	Submission of DIS forms ⁴ (as per performance from 21st of previous month to 20th of current month)	By 26th of each month	Rs. 24 per lamp distributed that month as per DIS, subject to realisation of remittance as per clause 2.6
4	Submission of Assembly and Distribution Phase Completion Report+ SRC Setup Completion Report 5	By 26th of month of the last date of assembly & distribution	Rs. 12 per lamp for total lamps distributed as per DIS
5.	Submission of SRC Performance Report ⁶ A	Once, at the end of month 7	Rs. 5 per lamp for total lamps distributed as per DIS
6.	Submission of SRC Performance Report ⁶ B	Once, at the end of month 10	Rs. 4 per lamp for total lamps distributed as per DIS
7.	Submission of R&M phase Completion Report ⁷	Once, within 1 month from the end of the project	Rs. 2 per lamp for total lamps distributed as per DIS

Table3: Milestone based payments and incentives

¹ Month indicates the calendar month from the start date of Training

² Secondary data and planning report to contain the information as outlined in Annexure 3 of MoU, in hardcopy and softcopy format specified by IITB (Million SoUL project).

³ Monthly assembly and distribution report to contain the information as outlined in Annexure 3, in hardcopy and softcopy format specified by IITB from time to time (Million SoUL project).

⁴ DIS forms, provided by IITB, to be submitted in softcopy along with the original hardcopy.

⁵ Submission of assembly and distribution phase completion report + SRC setup completion report to contain the information as outlined in Annexure 3 of MoU, in hardcopy and softcopy format specified by IITB (Million SoUL project).

⁶ SRC performance report to contain the information as outlined in Annexure 3 of MoU, in hardcopy and softcopy format specified by IITB (Million SoUL project).

⁷ R&M phase completion report to contain the information as outlined in Annexure 3 of MoU, in hardcopy and softcopy format specified by IITB (Million SoUL project).

3) SRCM's Payment:

The SRC / SRC Manager's remuneration must be fixed and paid at a per month basis by the 27th of each the month. The minimum amount earmarked for SRC / SRC Manager's remuneration must be as per Annexure 2 of MoU.

4) Lamp Distribution and Money Collection from Beneficiary:

Institutional Partner should adhere following norms while doing lamp distribution and collecting the money from beneficiaries:

- 1) Distribution of SoUL is carried out in the project blocks (village cluster-wise) only and by trained manpower only.
- 2) The target beneficiary of SoUL are the children of class V to class XII, enrolled in registered private and government schools in the project blocks.
- 3) Distribute the SoUL lamp only to the target beneficiaries, at the exact price of the Rs. 120/- (Rupees One Hundred and Twenty Only) per lamp.
- 4) Each student beneficiary to be sold one SoUL only.
- 5) IP should not give the SoUL for free to any of the target beneficiary, through any other government or non-government scheme.
- 6) IP should not sell the lamp to any entity other than the target beneficiaries, and at costs other than that detailed by IITB (Million SoUL project).
- 7) The collection of Rs.120/- (Rupees One Hundred and Twenty Only) per lamp distributed to the target beneficiary and remittance of the monies or share payable to IITB therefrom is the responsibility of the IP.
- 8) IP should issue receipts (DIS-School copy) on behalf of IITB, to school/ students on purchase of SoUL.
- 9) IP should record correctly and completely the beneficiary details, in the Distribution Information Sheet (DIS) format as specified below:

Guidelines for filling beneficiary information in DIS (Hard & Soft Copy):

Figure17: Here’s an example of Distribution Information Sheet (DIS) **Hard Copy**; below is an illustration:

Million SoUL Program, IIT Bombay														IIT Bombay Copy/NGO Copy/School Copy		
Distribution Information Sheet (DIS)																
DIS No: MPAS <small>Pre-printed</small>				IP Name: <small>Pre-printed</small> , A&D Center Location: <small>Pre-printed</small> , District: <small>Pre-printed</small> , State: <small>Pre-printed</small>												
Date of Distribution:			DD	MM	YYYY	Distributor Name:				Block/s (Please Circle):			<small>Pre-printed</small>	<small>Pre-printed</small>	<small>Pre-printed</small>	
School Name:				School Code:				School Village:								
Sr. No	Lamp Code	Student's Full Name			Student's Gender (Please circle)	Class	Caste (Please circle)				Do you have electricity at home (Please circle)	Student Gram Panchayat	Student Village	Rupees paid for the lamp	Student Signature	
		Student's Name	Father's Name	Surname			Gen	OBC	SC	ST						Y
1	MPAS				M	F	Gen	OBC	SC	ST	Y	N			120	
2	MPAS				M	F	Gen	OBC	SC	ST	Y	N			120	
3	MPAS				M	F	Gen	OBC	SC	ST	Y	N			120	
4	MPAS				M	F	Gen	OBC	SC	ST	Y	N			120	
5	MPAS				M	F	Gen	OBC	SC	ST	Y	N			120	
6	MPAS				M	F	Gen	OBC	SC	ST	Y	N			120	
7	MPAS				M	F	Gen	OBC	SC	ST	Y	N			120	
8	MPAS				M	F	Gen	OBC	SC	ST	Y	N			120	
9	MPAS				M	F	Gen	OBC	SC	ST	Y	N			120	
10	MPAS				M	F	Gen	OBC	SC	ST	Y	N			120	
Total Entries in this sheet:																
School - Principal/Teacher's Signature & Stamp					Verified by IP - Signature & Stamp					Verified by IIT Bombay						

Following are the instructions for the distributor when filling the DIS (Hard Copy):

- ✓ Distributors should carry a list of Gram panchayat and Village name of respective block. Here, distributor could carry the list of schools in his cluster as well.
- ✓ Don't change any of the pre printed field such as DIS No, IP Name, State, District, A&D Center Location, Block, and Cost.
- ✓ Fill all the records properly and don't leave any of the field as blank.
- ✓ Put date format for distribution as DD/MM/YYYY (e.g.: - 08/06/2015).
- ✓ If multiple Blocks are there in DIS then put a circle mark (○) in corresponding Block.
- ✓ Write School Name, School Code, and School Village properly.
- ✓ Lamp code consists of nine alphanumeric numbers. Out of which starting four numbers will be pre printed remain five numbers has to be written from Lamp code pasted on the Lamp.
- ✓ Student's Full name column divided into three sub parts first will be student's name, second will be Father's name and third will be Surname of the student. Please don't change the sequence of the names.
- ✓ For Gender put a circle mark (○) in M or F in the sub field of Gender column. "M" for Boy and "F" for Girl.

- ✓ For class write Numbers only like 5 , 6 , 7 and don't put "th" after Number like 5th or 6th
- ✓ For caste put a circle mark (○) on respective sub caste column given in the sheet.
- ✓ For Electricity put a circle mark (○) in Y or N sub field of Electricity column. Here, "Y" specifies YES and "N" specifies NO.
- ✓ Write proper Gram panchayat name by asking student, for any doubt refer to the Gram panchayat sheet given to the Distributor.
- ✓ Write proper village name with respective to Gram panchayat. Distributors should ask more questions to students to get the proper village name. Don't write any kind of Ward, Gali, Sahi, Palli, Nagar, etc. in Village column. Also don't write Hamlet or Faliya name in Village column, for any doubt refer to the Village sheet given to the Distributor.
- ✓ Student signature is compulsory.
- ✓ At the end Distributor should write the count of "Total Entries in this sheet" in the proper place given in the DIS sheet.
- ✓ In one sheet one school information should be there, don't mix two or more schools information in one sheet.
- ✓ Take Principal/teacher's Signature and School Stamp in proper place which is given in the sheet.
- ✓ Total three copies (IIT Bombay Copy/NGO Copy/School Copy) are there for each DIS no. Out of these three copies, distributor should give School Copy to respective school principal/teacher and handover other two copies to NGO.
- ✓ IP verification is compulsory after submission of DIS booklets/sheets by distributors.

Figure18: Here's an example of Distribution Information Sheet (DIS) **Soft Copy**; below is an illustration:

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
SNo	Dis No	Date of Distribution	School Name	School code	School Village	Lamp Code	Student's Name	Father's Name	Surname	Student's Gender	Class	Caste	Do you have electricity at home	Student Gram Panchayat	Student Falya/ Village	Rupees paid for the lamp		
1	2N1D 1234	8/3/2015	HS School	1234	tvillage1	2N1D 34567	Rajesh	A	Sawal	Male	7	OBC	Yes	Amanala	Amanala	120		
2	2N1D 1234	8/4/2015	Mandla middle	1234	tvillage1	2N1D 34568	Ankita	B	Chauhan	Male	8	Gen	Yes	Badar	Amanala	120		
3	2N1D 1234	8/3/2015	MS Boys School	1238	tvillage5	2N1D 34572	Nikhil	C	Sawal	Male	11	Gen	Yes	Ahmadpur	Amanala	120		
4	2N1D 1234	8/4/2015	HS School Ma	1234	tvillage1	2N1D 34561	Sushant	C	Pandey	Male	11	OBC	Yes	Ahmadpur	Amanala	120		
5	2N1D 1234	8/5/2015	MS Girls School	1238	tvillage5	2N1D 34572	Latha	D	Rao	Female	12	Gen	Yes	Amanala	Amanala	120		

Following are the instructions for the Data Entry Operator when filling the DIS (Soft Copy):

- ✓ All fields are mandatory.
- ✓ DIS column divided into two parts, first part automatically will be filled and second part has to be filled by Data Entry Operator.
- ✓ For Date of distribution, double click on the respective cell a calendar will pop up, select the required date.
- ✓ On clicking drop down box of School name column, school name list will appear, on selecting school name, respective School Village and School Code will be automatically get filled.
- ✓ Lamp code column divided into two parts, first part automatically will be filled and second part has to be filled by Data Entry Operator.
- ✓ Full name column divided into three sub parts, first will be Student's name, second will be Father's name and third is Surname of student. Don't change the sequence.
- ✓ On clicking drop down box of Gender column, a list will come as "Male" and "Female" select "Male" for "M" and "Female" for "F" as per student Gender mentioned in the DIS hard copy.
- ✓ On clicking drop down box of Caste column, a list of Castes will be displayed, select the required caste from the list as per student caste mentioned in the DIS hard copy.
- ✓ Click on drop down box of Electricity column, a list will come as "YES" and "NO", as per electricity information provided by student in DIS hard copy select the required.
- ✓ On clicking drop down box of Gram panchayat column, a list of Gram panchayats will be displayed, select the required Gram panchayat from list, as per student Gram panchayat mentioned in DIS hard copy.
- ✓ On clicking drop down box of Village column, a list of Villages will be displayed, select the required Village from list as per student village mentioned in DIS hard copy.
- ✓ Lamp cost will be filled automatically, so no need to fill.
- ✓ If mistakenly data entry operator enters the same lamp code two times in this sheet, then automatically it will highlight in RED COLOR and this will indicates the double entry of same lamp code. Therefore, Data entry operator should do the corrections immediately.

5) Payment to IIT Bombay:

IP should remit to IITB Rs.120/- (Rupees One Hundred and Twenty Only) per lamp, on a monthly basis, on the **25th of every month**, from the proceeds of sale of SoULs during the period from the 21st of previous month to 20th of current month. IITB reserves the right to charge interest per day for any delayed payments till such time they remain unpaid.

Such remittances should be made in the form of Demand Draft, Cheque or National Electronic Fund Transfer (NEFT) or Real Time Gross Settlement (RTGS) to the bank account provided by IITB (Million SoUL project).

A) Procedure for fund transfer against distribution of SoUL lamps to IITB

Deposit the money against the Distribution of Solar Lamp (No. of Sold SoUL Lamps X Rs.120/-).

The bank details are as follows:

Beneficiary Name: Registrar IIT Bombay, Project & Consultancy Account

The bank details for depositing the amount:

Bank Name: State Bank of India

Bank Account Number: **10725729173**

Bank Branch: IIT Bombay Powai Branch

Bank Address: IIT Bombay , Adi Shankarachary Marg, Powai, Mumbai - 400076

RTGS / IFSC / NEFT No.: SBIN0001109

ECS No. / MICR NO.: 400002034

Swift Code: SBININBB519 (For Forex Transaction)

B) Guidelines for A&D + SRC Payments

- Payment for total distributed lamps should be credited to IITB account on 25th of every month at Registrar, IIT Bombay Account.
- NGO information and bank details should be filled correctly.
- Invoice should be printed on letterhead of NGO with authorized person signature and seal before sending it to IITB.
- Two original copies (hardcopy) of invoice against paid lamps should be reached to SoUL office, IIT Bombay on or before 29th of every month.
- Note that A&D and DIS invoice should be raised on same date and send together to IITB.
- Lamp quantity and amount of A&D and DIS invoice should match with each other. If it is not, then the payments from IITB to IP will get delayed.
- Raised Invoices should be as per "Assembly & Distribution Center" wise. Please don't send the block wise invoices to IITB.
- NGO should raise the invoices as per completion of the milestones for receiving corresponding payments
- Payments will be processed & cleared in fifteen (15) working days after receipt of Invoice (Hard Copy) from NGO
- Payment intimation email will be sent by IITB to NGO (Payment details i.e. Invoice No., Date & exact payment amount).
- Payment confirmation email to 'Accounts Department' should be sent by NGO after receiving payment from IITB.

6) Format of Invoice is as follows:**1. Invoice format for submission of monthly Assembly and Distribution report****Invoice : Assembly & Distribution**

Invoice No:(E.g. State/IP Name/Block/01)

Date: DD/MM/YY (On or after depositing)

Sr. No.	Description	Amount in (Rs.)
1.	Distribution of _____ Nos. Solar Urja Lamps for the month of (e.g. Oct., 2015) (No. of lamps X Rs. 26/-)	

Amount in Rupees _____

The payment should be made by wire transfer or Draft/ Cheque drawn in favor of :

Name of Bank : (Name of NGO's Bank)

Account Name : (NGO's Bank Name)

Bank A/C No. : (NGO's A/c #)

IFSC :

Contact Person :

Contact No. :

Authorised Sign

NGO Stamp/Seal

2. Invoice format for submission of DIS forms

Invoice : Distribution Information Sheet

Invoice No:()

Date: DD/MM/YY

Sr. No.	Description	Amount in (Rs.)
1.	DIS Count (Qty. of lamps) against Solar Urja Lamps distribution _____ Nos. for the month of (e.g. Oct., 2015) (DIS Count (Qty. of lamps) X Rs. 24/-)	

Amount in Rupees _____

The payment should be made by wire transfer or Draft/ Cheque drawn in favor of :

Name of Bank : (Name of NGO's Bank)

Account Name : (NGO's Bank Name)

Bank A/C No. : (NGO's A/c #)

IFSC :

Contact Person :

Contact No. :

Authorised Sign

NGO Stamp/Seal

3. Invoice format for submission of Assembly and Distribution phase completion report + SRC setup completion report

Invoice : Assembly and Distribution phase completion report + SRC setup completion report

Invoice No:()

Date: DD/MM/YY

Sr. No.	Description	Amount in (Rs.)
1.	Total distribution of Solar Urja Lamps as per of DIS record _____ Nos. for the month of (e.g. Oct., 2015) (Total distributed Solar Urja Lamps X Rs.12/-)	

Amount in Rupees _____

The payment should be made by wire transfer or Draft/ Cheque drawn in favor of :

Name of Bank : (Name of NGO's Bank)

Account Name : (NGO's Bank Name)

Bank A/C No. : (NGO's A/c #)

IFSC :

Contact Person :

Contact No. :

Authorised Sign

NGO Stamp/Seal

4. Invoice format for submission of SRC performance report - A

Invoice : SRC performance report - A

Invoice No:()

Date: DD/MM/YY

Sr. No.	Description	Amount in (Rs.)
1.	Total distribution of Solar Urja Lamps as per of DIS record _____ Nos. for the month of (e.g. Oct., 2015) (Total distributed Solar Urja Lamps X Rs.5/-)	

Amount in Rupees _____

The payment should be made by wire transfer or Draft/ Cheque drawn in favor of :

Name of Bank : (Name of NGO's Bank)

Account Name : (NGO's Bank Name)

Bank A/C No. : (NGO's A/c #)

IFSC :

Contact Person :

Contact No. :

Authorised Sign

NGO Stamp/Seal

5. Invoice format for submission of SRC performance report - B

Invoice : SRC performance report - B

Invoice No:()

Date: DD/MM/YY

Sr. No.	Description	Amount in (Rs.)
1.	Total distribution of Solar Urja Lamps as per of DIS record _____ Nos. for the month of (e.g. Oct., 2015) (Total distributed Solar Urja Lamps X Rs.4/-)	

Amount in Rupees _____

The payment should be made by wire transfer or Draft/ Cheque drawn in favor of :

Name of Bank : (Name of NGO's Bank)

Account Name : (NGO's Bank Name)

Bank A/C No. : (NGO's A/c #)

IFSC :

Contact Person :

Contact No. :

Authorised Sign

NGO Stamp/Seal

6. Invoice Format for submission of R&M phase completion report

Invoice : R&M phase completion report

Invoice No:()

Date: DD/MM/YY

Sr. No.	Description	Amount in (Rs.)
1.	Total distribution of Solar Urja Lamps as per of DIS record _____ Nos. for the month of (e.g. Oct., 2015) (Total distributed Solar Urja Lamps X Rs.2/-)	

Amount in Rupees _____

The payment should be made by wire transfer or Draft/ Cheque drawn in favor of :

Name of Bank : (Name of NGO's Bank)

Account Name : (NGO's Bank Name)

Bank A/C No. : (NGO's A/c #)

IFSC :

Contact Person :

Contact No. :

Authorised Sign

NGO Stamp/Seal

IIT Bombay Office Address:**1 Million Soul Office**

Department of Energy Science and Engineering

Next to NASA office

Opp. Materials Management Division

IIT Bombay, Powai, Mumbai- 400076

Maharashtra, India

Contact No: +91 22 2576 4849/4847

www.millionsoul.iitb.ac.in

Key Contact Persons:

<u>Name</u>	<u>Designation</u>	<u>E-mail Address</u>
<u>Overall Coordination:</u>		
Abhilasha Chauhan	Project Manager	abhimaan@gmail.com
Anand Lihinar	Assistant Project Manager	srbsdivb@gmail.com
<u>Account Department:</u>		
Jivita Poojari	Accountant	soulfinance15@gmail.com
Alka Chavan	Accountant	soulfinance15@gmail.com
Makrand Jadhav	Accountant	soulfinance15@gmail.com

Table4: Key contact persons

CHAPTER 8: MANAGING A&D COMPLETION

1) Introduction:

In Million SoUL project Assembly and Distribution centers have been established to facilitate the local assembly and distribution of the solar lamp. At the end of these activities, the assembly and distribution activities are to be closed by ensuring proper records of inventory, distribution data, financials, tools, manpower, etc.

This chapter contains procedures to facilitate closing up of the assembly and distribution activities of SoUL project. This chapter also presents the possible solutions to the issues that may arise during closing up activities of assembly and distribution. By following and implementing the instructions and guidelines mentioned in this chapter will help to improve speed, quality, efficiency and effectiveness of SOUL project closing up processes.

2) Purpose of A&D closing:

The purpose of closing up activities is to add credibility to the report submitted by IP for Assembly and Distribution phase completion to the IITB. This activity will be supervised by executives from IIT Bombay along with the IP project in charge and supervisors to ensure the transparency level from both the sides.

The Assembly and Distribution phase completion report (In hardcopy and soft copy format) must contain the following data, summarizing A&D activities over the entire project, at each assembly center:

1. Total quantity of SoUL assembled.
2. Total quantity of SoUL distributed along with School code and DIS sheet numbers.
3. Component-wise total number of physical defectives, technical defectives and scrap.
4. Component-wise inventory count of non-defective and unused components available at the center.
5. Summary of random quality inspection by IP of assembled lamp.
6. Summary of total man-hours or man-days (gender-wise) employed.
7. Summary of total number of people (gender-wise) who participated in assembly, distribution and data entry and supervisory work.
8. List of campaigning activities carried out in, along with copies/ photos/ videos of the campaign (if not submitted earlier with the Monthly reports).
9. Summary of payments made to IITB, and Payments received from IITB.
10. Summary of DIS forms hardcopy and softcopy submitted to IITB.
11. Number of free kits used, along with the list of beneficiaries with sign (if not submitted earlier with the Monthly reports).
12. Status of toolkits, record books and laptop provided by IITB.

13. Copy of Quality Inspection Report along with penalty component, if any, as per Annexure 3, Section H.
14. Copy of documentary/ report/ video/ presentation, if any prepared by IP.
15. Summary of the duration of the actual assembly and distribution phase with broad schedule, from the date of training until the day of report submission to IITB, along with details of penalties if any, as per Annexure 3, Section H.
16. Any other, as requested by IITB at a future date.

3) Mandatory actions for IP before starting A&D closing:

Following are the mandatory actions for IP before starting A&D closing up activities and proposed visit of executives of IITB for supervising the closing up activities. These mandatory actions will help to resolve various operational issues and also help to complete closing up activities in time.

Sr. No.	Issues	Recommended Solutions
1	Inventory (At Assembly Centre) - Quantity Received	
	a) If, Actual quantity received by IP \neq quantity delivered/dispatched by Vendor.	a) Check Inventory book. b) Cross check and verify with online files (A&D File). c) If data is not updated, IP should update the inventory data at the earliest. d) If still data doesn't match, cross check with DC & LR copy available with IP. e) If still discrepancies are there IP should inform to FO / Cluster Manager / State Coordinator for the same as well as consult with Operations team (IITB) for further action.
2	Quantity Assembled	
	a) Actual Quantity Received by IP \neq Quantity Assembled + Quantity yet to assemble (will include defectives/missing).	a) If it doesn't match, IP should check & update Inventory book (assembly / missing / defectives), whether it is updated or not. b) IP should update same data through online mode. c) If still the issue is not resolved then inform FO / Cluster Manager / State Coordinator & consult with Operations team (IITB) for further action.

3	Finished Lamp Inventory (Assembled but not distributed)	
	<p>a) Finished Lamp Inventory \neq Status Master Records.</p>	<p>a) If it doesn't match, IP should cross check & update Inventory book. b) IP should update same data through online mode. c) IP should check Assembly Centre's hard copy records. d) IP should do the physical count check of finished lamps available at Assembly centre. e) IP should cross checks the "Lamp Issue Register/Documents" maintained at A&D Center. f) If still the issue is not resolved then inform FO / Cluster Manager / State Coordinator & consult with Operations team (IITB) for further action.</p>
4	Free Kits	
	<p>a) If, the number of free lamps distributed doesn't match with the data recorded in data sheet. b) Free lamp data sheet is not maintained at Assembly Centre.</p>	<p>a) IP should update the Free Kits data with the help of supervisors / data entry operator. b) IP should inform FO / Cluster Manager / State Coordinator in case of any issue and consult with Operations team (IITB) for further action.</p>
5	Distribution	
	<p>a) Total Distribution (as per DIS count) \neq DIS data updated by IP.</p>	<p>a) IP should cross check & Update Inventory book. b) IP should update same data through online mode. c) IP should do the physical count of DIS hard copies before sending it to IITB. d) IP should coordinate with all distributors to collect all the DIS hard copies from distributors. c) If still issue is not resolved, then inform FO / Cluster Manager / State Coordinator & consult with Operations team (IITB) for further action.</p>

6	DIS Data	
	a) Total number of DIS entries reached IITB \neq Total Distribution.	a) IP should send the remaining DIS sheets to IITB on priority basis. b) If DIS entries < total distribution, IP should coordinate and collect from Distributors and also cross check the availability of DIS sheets on field. c) If issues are not resolved then inform FO / Cluster Manager / State Coordinator & consult with Operations team (IITB) for further action.
7	Laptop + Mouse + Dongle	
	a) In case Laptop + Mouse + Dongle are found with IP - missing/physically damaged.	a) IP has to bear the cost of Laptop + Mouse + Dongle .
8	Payments	
A.	Payments (IP to IITB)	
	a) Payment to IITB (in terms of no. Of lamps) \neq Total distribution.	a) IP should deposit pending money of distributed lamps in bank account of IITB as per milestone.
	b) Payment transferred by IP \neq Payment received by IITB .	a) Project in charge should cross verify with Account sections of both IP as well as IITB . b) If, issue is there, Project in charge should inform FO / Cluster Manager / State Coordinator & consult with Account team (IITB) for further action.
B.	Payments (IITB to IP)	
	a) Payment transferred by IITB to IP \neq payment received by IP from IITB .	a) IP should consult with Account team (IITB) for further action.
9	Tool Kits	
	a) If any instrument is missing from toolkit.	a) Inform immediately to FO / Cluster Manager / State Coordinator . b) IP has to bear the cost of missing instrument as per IITB guidelines.
10	Inventory Books	
	a) If all inventory books are not updated properly.	a) Update immediately all stock books as well as same data through online mode.

Table5: Mandatory actions for IP before starting A&D closing

CHAPTER 9: MANAGING SERVICE REPAIR CENTER (SRC) SETUP

1) Introduction:

Sustainability of a solar lamps program not only depends on making solar lamps available, but also making them work for the duration of Million SoUL Program of IIT Bombay. The program is designed to make rural people capable of assembly, distribution and repair & maintenance of solar lamps. In previous phase, IIT Bombay has already identified the local assemblers and distributors who were involved in the lamp assembly & distribution, to act as repair center managers. IIT Bombay calls these centers as SoUL Repair Centers (SRCs) which are identified, roughly for every 3000 lamps distributed.

The idea behind setting up of SRCs, together with their repair activity they would be able to sell other solar products at commercial rates, promoting solar technology by market mechanism. These managers have enough skills to understand the working of solar technology and repair of solar lamps. New solar products can be introduced with the additional training on those products. Vendors are encouraged to sell new products through these SRCs.

2) Objectives:

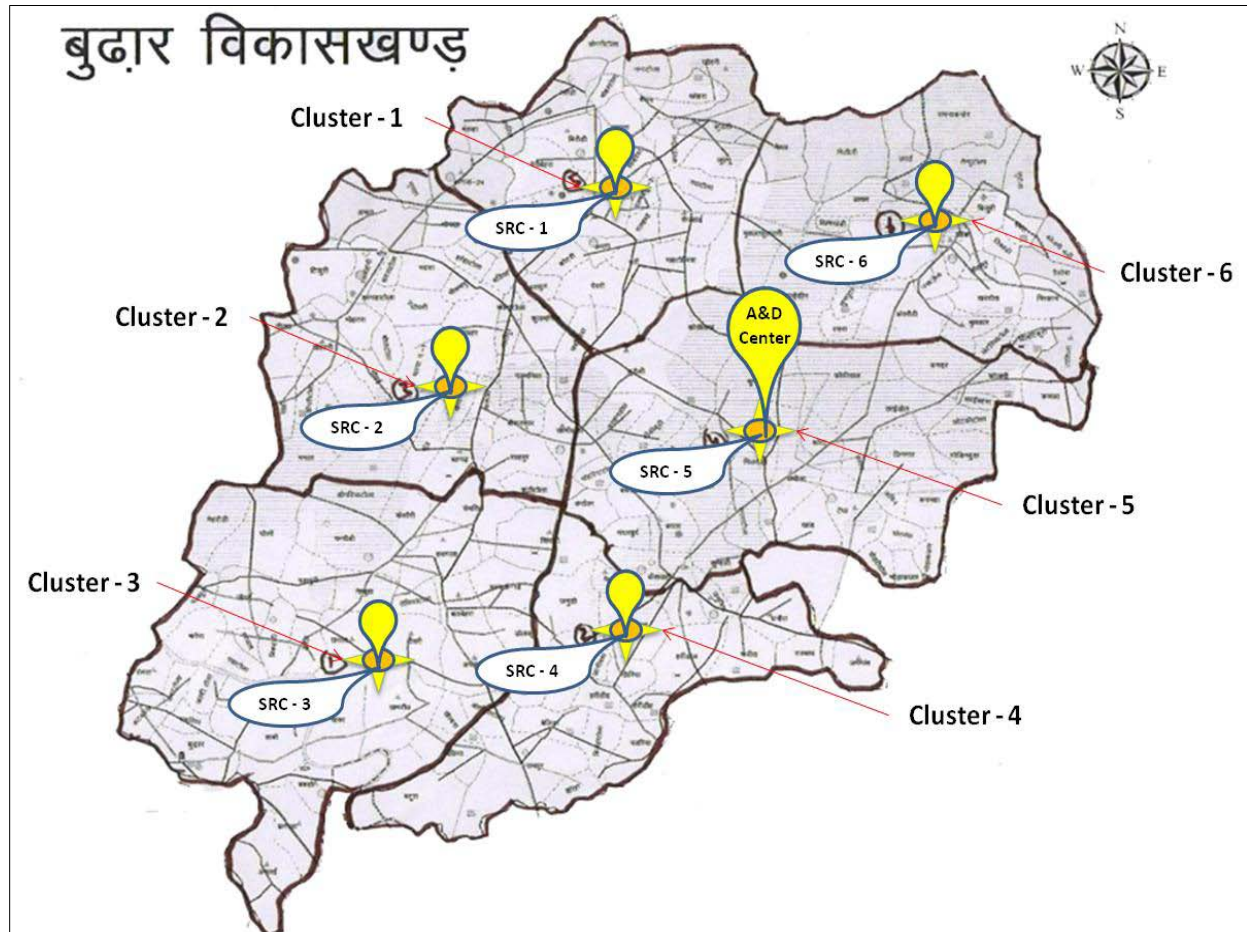
Following are the objectives behind setting up SRCs:

- ✓ To setup repair & maintenance (R&M) network
- ✓ To deliver free R&M service to beneficiaries
- ✓ To build a network of Solar skilled persons in remote areas for easy future implementation of Solar Technologies at the root level

3) Cluster mapping before establishing SRCs:

Cluster mapping serves as a tool to provide a visual representation of information in a particular geographical context. Cluster mapping allows you to define your cluster boundaries according to the presence of number of schools, enrolled students and density of population. Cluster mapping is a process of categorizing the block locations in several small parts which allow you to concentrate on specific region in terms of number of schools, enrolled students and density of population. It is based on predefined locations and which are identified, roughly for every 3000 lamps distributed.

Figure19: Here's an example of cluster mapping and proposed locations of SRCs with in block, below is an illustration:



4) SRC Planning Procedures:

IP should adopt following SRC planning procedures by consulting with IITB:

1. Find best possible SRC locations as per lamp distribution and density of population.
2. Collection of information in advance which includes, the list of proposed SRCs Managers, maps of blocks, lamp density mapping, arrangement of spare parts, preparation and printing of SRC boards, logbooks for record keeping.
3. Cluster Formation on Google Map
4. Google Mapping to identify the best possible location of SRC in every Cluster
5. Mutual discussion between IP & IITB for proposed SRC Centers
6. Discussion on recommendations from IP as well as IITB regarding prospective SRC Managers at different areas
7. Interview of recommended prospective SRC Managers by IIT Bombay Team
8. Selection on the basis of predefined criteria for SRC Managers (viz. Eligibility, Interest, Basic Technical Knowledge etc.)

5) Training for SRCMs:

IP should ensure that SRC Managers attend all the compulsory trainings arranged by IIT Bombay for all the planned Clusters. Following important aspect are included in SRCMs training:

1. SRC Functionality Training
2. Lamp Technical part which comprises of Lamp R&M procedures (viz. Lamp Cleaning, Testing Old Parts, Replacing with New Parts, their Coding to identify Serviced etc.)
3. Lamp research part which comprises of Record Keeping Procedures (viz. Lamp R&M Enquiry & Process, Faulty & Spare Components Tracking, Monthly Compensation Log etc.; both at SRC & NGO level)
4. Training would be Interactive by multiple options of interacting with candidates while taking Classroom Sessions, presenting Videos from respective Vendors, Pratical Testing etc.

6) Prerequisites before establishing SRC centers:

IP should manage following prerequisites before establishing the SRC centers with the help of IITB.

1. Survey of Infrastructure & Facilities (viz. Shop, House, School, Local Premises) available with SRC Managers for the proposed SRC Centers
2. To make sure that the SRC Managers fulfills the SRC Facility Requirements depending on the SRC Checklist
3. SRC Checklist: Space/Room at least 8X8 feets, Power Supply, Floor Carpet to Restrict Static Electricity, Wooden Top-Table at least 4X2 feets, 2 Chairs, Mini Shelf/Almirah with Locking Facility, From IITB (SRC Banner, 1 R&M Toolkit, Log Books with Carbon, Component Box, Serviced Stickers, Laminated Instruction Sheets & Govt. Authorization Letters).
4. R&M Toolbox & Logbooks Details:

R&M Toolbox Items	Quantity
Soldering Iron	1
Soldering Iron Stand	1
Soldering Metal/Wire	10
Stripper	1
Screw Driver	2
Multimeter	1
Multimeter Battery	1
Screws of Different Type per Lamp basis	50
Smooth Cleaning Brush	1
Red & Black Markers	1
Log Books – (For SRC)	Quantity
Lamp R&M Enquiry & Process Book	1
Lamp Deposit Receipt Book	1
Lamp Spare Components Inventory Book	1
Log Books – (For NGO)	Quantity
Lamp Spare Components Inventory Book	1
Monthly Compensation Book	1

Table6: R&M toolbox & logbooks details

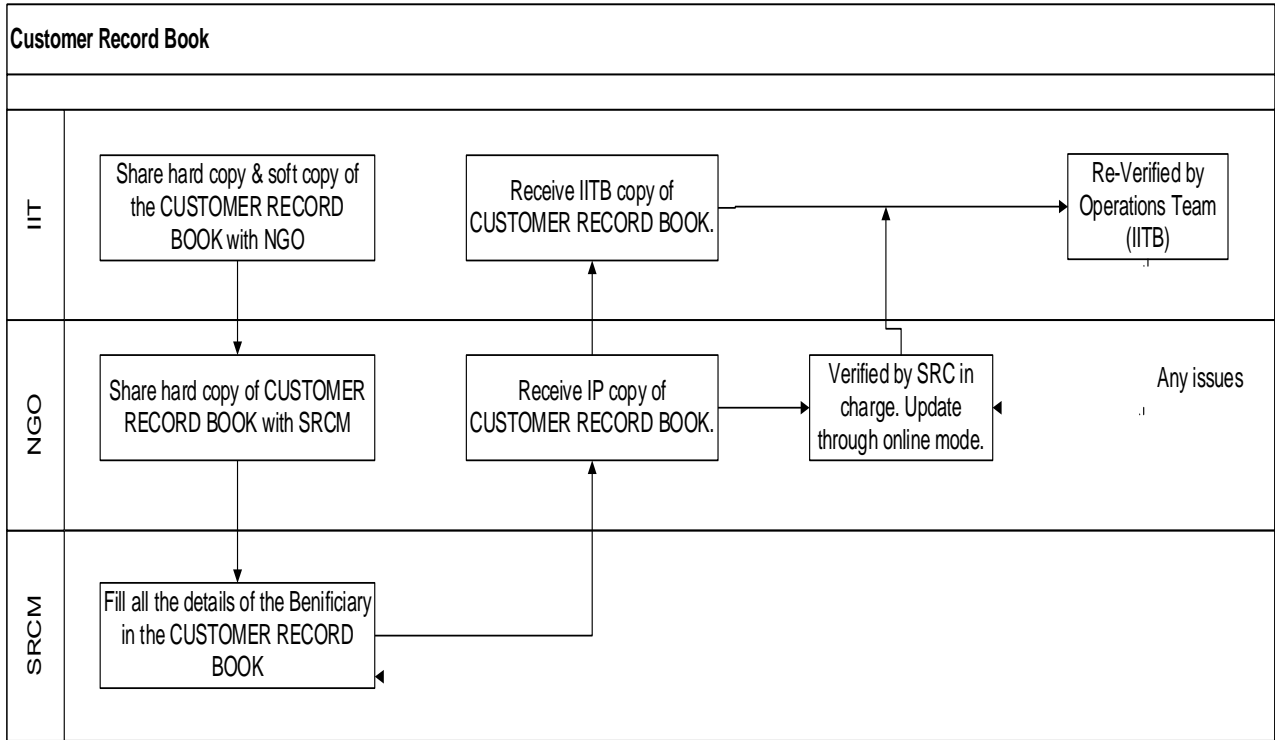
7) Inauguration of SRC:

As per planning and after satisfying predefined parameters for establishing SRCs in respective cluster, IITB and IP will start SRCs along with SRC mangers in respective cluster to provide free repair and maintenance services to the beneficiaries.

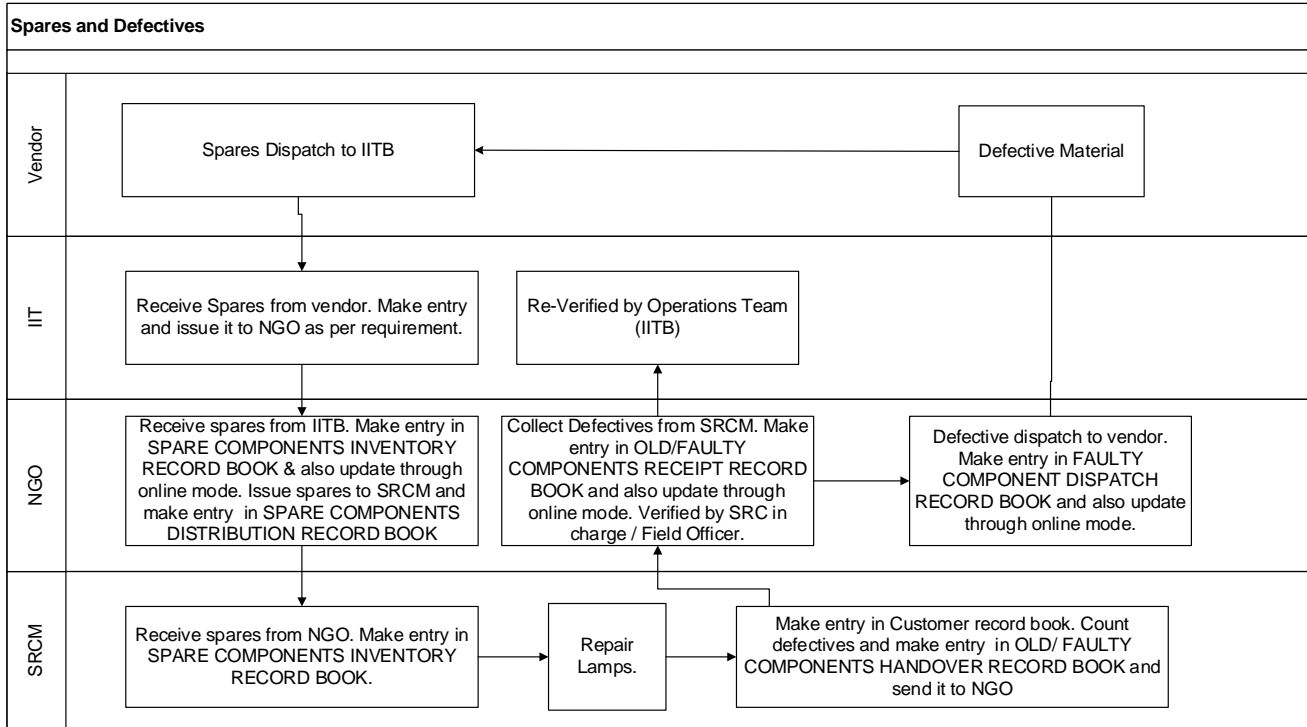


Figure20: Inauguration of New SRCs

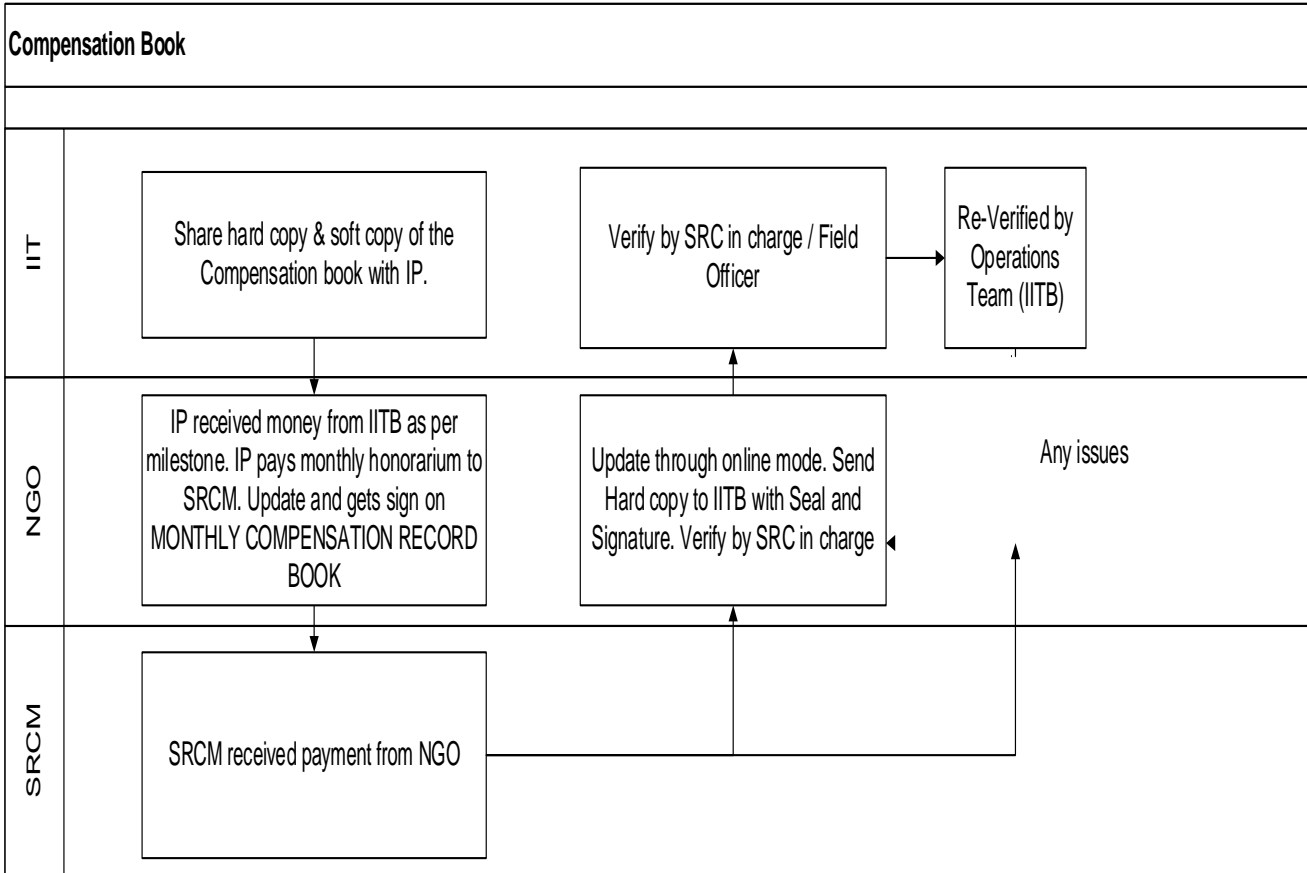
**8) SRC Data Monitoring Process:
Customer Record Book Monitoring Process:**



Spares and Defectives Data Flow:



Compensation Book Record Maintenance Process:



CHAPTER 10: MANAGING WORKFORCE SUPERVISION

1) Supervision - Introduction:

Supervision and support practices, as part of workforce development, can be useful to assist with recruiting staff, retaining valuable staff, supporting and encouraging good practice, worker well-being, and engaging in reflective practice.

Possibly due to budget and time constraints, it often does not seem appropriate to consider the process of supervision, mentoring and coaching as happening distinctly, they are all closely linked. Project in charge should be clear on exactly what the organisation (i.e. IP) offers in terms of supervision and support, its purpose and goals.

Supervision and support needs will be different for different organisations but this can be easily understood by means of a needs analysis. The key is for managers to trial and evaluate different supervision and support programs to find the most appropriate model for the organization (i.e. IP). This could include promoting that there is a process in place for staff to access Employee Assistance Programs on an as needs arise basis.

2) Definitions and terminology

A) What is supervision?

Supervision serves an educative and supportive function. It is an opportunity to raise professional issues and gain further expertise. Supervision allows an individual to learn from their own experiences in working with consumers, review and debrief approaches to recovery-oriented support practices, and ensure that service delivery is following best practice standards. The supervisor must have skills to facilitate regular and systematic supervision. Supervision can be facilitated by an individual, in a group setting or in a harmony, with an additional facilitator, to suit the size and culture of the organisation. Group supervision may be a more feasible option for smaller or rural organisations.

B) What is activity based supervision?

This category of supervision includes operational supervision, which may be provided by a line manager. A project in charge /supervisor has a clear line of accountability. They are responsible for day-to-day management of workplace practices and service delivery, planning and monitoring workload, ensuring quality of work, ensuring health and safety, time management, motivating, administration and record-keeping.

C) What is managerial supervision?

This is a kind of professional supervision which is provided by a professional senior from the same discipline. Professional supervision from a manager/senior is about ensuring good governance is being followed and that the organisation is working in accordance with its goals and vision.

Professional supervision could cover some/all of the following areas:

- The context of professional practice (systemic competence and role efficacy);
- The conceptualisation of strategy (conceptual competence and ethical judgement);
- The competent response to expressed beneficiary need (technical skills); and,
- Critical self-awareness (personal development).

Mismanagement of staff in designated roles, where there may have been no supervision or problematic supervision, has in some cases lead to role confusion and strain, conflict of interest, staff becoming unwell, and other negative consequences.

D) What is mentoring?

Mentoring can be defined as either an informal or formal process and can be an important professional development tool for staff, including for managers. Informal mentoring develops on its own between the individual staff member and desired mentor, and formal mentoring involves allocation of a mentor. Both processes can be encouraged and supported by the work place. Mentoring can be provided by someone from within the organisation or an external person. This person may be engaged in the relevant field of practice or involved in a separate field. The mentor provides counsel, insight and guidance and acts as a sounding board for ideas and decisions that relate to the mentee's job. A mentor can provide advice in professional development strategies, planning career goals, establishing contacts in the field of interest, feedback and exchange of ideas. The idea of a mentor is someone with qualities that appeal to the individual's sensibilities and professional objectives, be they skills, expertise or shared vision. The individual is 'taken under the wing' of the mentor and helped to reach their career goals and make networks. This relationship can be ongoing and a point of reference throughout that individual's career.

E) What is coaching?

Coaching is a method of improving individual or team performance through direction and instruction in order to learn a particular skill or work towards a set goal. It usually involves an external expert or coach who is bought in to work on a particular issue. This can be achieved through workshops, seminars and supervised practice.

3) Supervision and support strategies available to organizations

	Activity based Supervision	Supervision	Mentoring	Coaching
Focus	Meet policies and procedures	Skill & knowledge acquisition	Career development and psychological support	Learning specific issues and skills
Delivery	Clear description with job descriptions	Clear agreement – can be internal or external supervisor	Supported by the organisation	Clear agreement with outside expert (i.e. IITB)
Target group	Assemblers, Distributors, Data entry operators	Project in charge, Supervisors	Primarily on an individual level but can be done as a group	Learning and progression for individual or team around issue
Outcomes	Improvement in Performance	Service delivery that follows best practice standards, increased insight/knowledge	Guidance on developing livelihood	Improvement in specific skills required for role

*Table7: Supervision and support strategies available to organizations***4) Objectives/Benefits/ Challenges of Supervision:**

The main objectives of supervision programs are to:

- ✓ To provide support to staff
- ✓ To give advice
- ✓ To allow the sharing of ideas and resources
- ✓ To ensure good practice as outlined in the training manual
- ✓ To ensure that workers maintain ethical boundaries
- ✓ To facilitate professional development
- ✓ To enhance staff communication and sense of cohesiveness
- ✓ To maximise staff morale and retention
- ✓ To maintain the highest possible standards

The benefits of supervision are:

- ✓ Organisations that support continuous learning
- ✓ Staff that feels supported
- ✓ Organisations that support professional and personal growth for staff
- ✓ Improved staff communication

- ✓ Increased confidence of staff
- ✓ Reduced burnout
- ✓ Increased job satisfaction
- ✓ Quality practice
- ✓ Ongoing reflective practice

The main challenges associated with supervision are:

- ✓ The cost of supervision
- ✓ Encouraging staff to participate
- ✓ Finding appropriately experienced supervisors
- ✓ Time constraints
- ✓ Competing demands on resources

5) Practice Implications:

The findings regarding supervision and worker retention imply that certain supervisor behaviors should be increased or maintained through setting clear job expectations, training, coaching, monitoring and rewarding desired behaviors. These behaviors can be categorized as task assistance, social and emotional support and interpersonal interactions.

Task Assistance- Project in charge / Supervisors need to:

- ✓ Provide work related advice and instruction
- ✓ Offer assistance with job related tasks
- ✓ Support training and learning activities
- ✓ Coach workers
- ✓ Provide task assistance more frequently with newer workers

Social and emotional support – Project in charge / Supervisors need to:

- ✓ Listen to workers as they discuss job difficulties or problems
- ✓ Make supportive statements
- ✓ Recognize the emotional needs of workers feeling overwhelmed, stressed or confused
- ✓ Acknowledge and reward workers for doing a good job
- ✓ Be warm, friendly, and respectful with workers
- ✓ Clarify the workers role and job responsibilities
- ✓ Encourage for job self-sufficiency
- ✓ Encourage workers positive thinking and help seeking to manage stress

Interpersonal interaction

- ✓ Encourage coworkers to support each other
- ✓ Encourage a sense of competence in workers

- ✓ Interact with workers as professionals and encourage staff to share the organization's vision
- ✓ Project a sense of emotional closeness to workers
- ✓ Support male and female workers equally
- ✓ Provide support to workers regardless of how long they have been on the job

If managers are clear on the process of supervision and their role within the process, then this will filter down the organisation to all workers. Supervision requires both a 'bottoms up' and a 'top down' approach - that is, it is the workers responsibility to approach the manager to seek access to supervision as part of staff development, just as it is the manager's responsibility to ensure staff are accessing supervision at a required minimum level (that is, it becomes part of their performance plan), and the structures are in place to support this.

6) Internal versus external supervision - Pros and Cons:

	Internal supervision	External supervision
Pros	<ul style="list-style-type: none"> - Understands the organization - 'Insider knowledge', expertise or experience specific to your area of work - Easily accessible - A person who is familiar to you and your needs - Possibly shares similar interests/ career goals - Lower costs - resources needed for supervision readily available - Easier to organise/set up - Opportunity for a staff member to increase their role/responsibility by taking on a supervisor position 	<ul style="list-style-type: none"> - Brings new knowledge and experience to the organization - 'Outsider view' of things - Recruit from a wider pool of appropriate supervisors, and more opportunity to be selective in your final choice - Clear contracts and agreements set up - May be less subjective in supervisory process - Workers may feel more comfortable speaking honestly and openly to them - Existing staff do not need training
Cons	<ul style="list-style-type: none"> - Conflict of interest could arise, due to role confusion - May lack objectivity - Staff feel less comfortable disclosing/ sharing information for fear of being shamed or reprimanded - Contracts/protocols more easily overlooked - 'Match' between supervisor and worker may be less rigorous - Time needed to train supervisors may take away from time spent on other tasks/service delivery 	<ul style="list-style-type: none"> - Cost - 'Remote', i.e. contact is less frequent - Professional values may not be congruent with the organisation's values - Significant orientation and induction needed

Table8: Internal versus external supervision - Pros and Cons

7) Weekly / Monthly / Quarterly Meetings:

Weekly / Monthly / Quarterly Meetings are 1 day workshops, attended by all staff. The agenda is determined by the Project in charge and may include guest speakers, presentations by selected staff members, and activities designed to improve skills, and explore themes relating to mental health recovery.

Weekly / Monthly / Quarterly Meetings help to inspire, engage, and stimulate staff to consistently improve their practice, and help to maintain a consistent improvement philosophy.

CHAPTER 11: MANAGING WORKFORCE SELECTION

1) Hiring Needs:

A perfect hiring is essential for the growth and reach of any organization. Especially, for the large scale project like this, it is recommended to hire local people who has the potential and can be relied upon to work quickly and effectively since they are aware of the demographic and psychographic factors. Moreover, a great hiring shall also increase the operational efficiency and will also expand the reach of the Institutional partner involved.

2) Recruiting:

It is essential to recruit adequate staff for project related activities as per the guidelines provided by IITB. Institutional partner should appoint one full time personnel (i.e. Project in charge) exclusively for million soul project's management and field coordination, per assembly and distribution center apart from having an assembly and distribution supervisor, data entry operator and SRC in charge. The said staff should have sufficient educational qualification and related work experience. Assemblers and distributors also should be hired whose domicile is in the project block and they must be recruited from multiple village clusters within the block. Every assemblers, distributors, supervisors and data entry operator must undergo training provided by IIT Bombay before being employed. Institutional partner should intimate IITB regarding any change in the staff composition, and shall also ensure that the suitable replacements are found such that the project activities and timelines are not affected.

CHAPTER 12: MANAGING TRAINING & DEVELOPMENT

1) New Staff Orientation:

An effective orientation will

- Foster an understanding of the project, its values, and its impact
- Help the new personnel understand the broader scope of the work
- Help the new personnel understand his/her role and how he/she fits into the total organization's activities
- Help the new employee achieve objectives and shorten the learning curve by deeply understanding the desired impact of the project

2) Staff Development and Training:

After the successful fresher orientation programme, basic training should be provided to the staff involved in the execution of the project. The relevant training shall enable them to understand their roles and responsibilities in detail and shall imbue spirit of entrepreneurship within the local community.

3) Various types of trainings involved:

- A) Management Training
- B) Technical Training

A) Management Training:

Manager training and development is equally important for a large scale project. The training programme can teach managers how to handle a crises and how he/she can take the brand image of the organization to the highest level possible with an improved productivity. Following are the advantages of the Management training programs:

- Effective communication
- Understanding the responsibility
- Understanding the market behavior

In the competitive age, Management training is very important because as a manager, a person shall be involved rigorously in the decision making process and shall be made accountable for every action that he/she takes.

B) Technical Training:

Technical training helps the potential employees to perform the unique aspects of specialized or skilled work and apply specific tools, equipments, and processes to that work. Technical training mainly focuses on skill development and application of technical concepts, procedures and processes. Technical training is also important to ensure that quality products are delivered to the end beneficiaries and that all the products are similar in functionality which is only possible when every critical step are followed while assembling the product in this case. The best way to access the technical training is in terms of no. of defectives per block. If the steps, as guided, are not followed in appropriate manner, then it might lead to losses and will give a poor brand image of the organization.

APPENDIX

1) List of abbreviations

Abbreviation	Meaning
A&D Center	Assembly and distribution center
SRC / SRCs	SoUL Repair Centre/s
SRCM/SRCMs	SoUL Repair Centre Manager/s
NGO	Non-governmental organization
A&D	Assembly and distribution
LED	Light-emitting diode
SoUL	Solar urja lamp
Ni-MH battery	Nickel–metal hydride battery
PCB	Printed circuit board
INR	Indian Rupee
MSP	Million Solar Program
IIT Bombay	Indian Institute of Technology Bombay
IITB	Indian Institute of Technology Bombay
PI	Principal Investigator
Co-PI	Co-Principal Investigator
QC	Quality control
SCM	Supply chain management
OM	Operation management
FO	Field officer
IP/IPs	Institutional partner/s
IT	Information technology
LR	Loading Receipt
PRA	Participatory rural appraisal
HH	House Hold
FGDs	Focus Discussion Groups
GRN	Goods Received Note
DIS	Distribution information sheet
DISE code	Unique School Identification Code
DISE	District Information System for Education
MoU	Memorandum of understanding
NEFT	National Electronic Fund Transfer
RTGS	Real Time Gross Settlement
IFSC	Indian Financial System Code
ECS	Electronic Clearing System
MICR	Magnetic Ink Character Recognition Code
A/C No.	Account number
NASA	Non-Academic Staff Association
R&M	Repair & Maintenance

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