AIM

TO COMMUNICATE TO THE TARGET GROUP THE IMPACT OF THEIR LIVING CONDITIONS ON THEIR HEALTH, WELL BEING AND LIVELIHOOD.
Focus Areas

Natural Light

Ventilation
TARGET GROUP

EIDGAH MOHALLA
LOW INCOME HOUSING

TUBRAHALLI
BLUE TARP COMMUNITY
WHAT HAVE OTHERS DONE?

STREET PLAY FOR CHILD LABOUR

DEMONSTRATION FOR SANITATION

ADVERTISEMENT FOR EDUCATION

BOARD GAME FOR GARBAGE DISPOSAL

ROTI STAMP FOR SANITATION

FLIP BOOK FOR RIGHTS

SOAP OPERA FOR HIV AIDS

AUDIO VISUAL FOR TELLING STORIES
COMMUNICATION

ADVERTISEMENTS

STORY

WORKSHOPS

PHONE

3D MODELS

MUSIC

SKETCHES

DRAMA

PHOTOGRAPHS

CARDS

POP-UP BOOKS

SIMULATION

GAMES

DEMONSTRATION

CINEMA

VIDEOS

FLASH CARDS

POSTER
CONCEPTS

CARD SORT
RESEARCH METHOD - PRIORITIES

PICK A HOUSE
RESEARCH METHOD - VALUES

SMOKE/VENTILATION DEMO
COMMUNICATION METHOD

SUNLIGHT SIMULATION
COMMUNICATION METHOD

STORY TELLING PANELS
COMMUNICATION METHOD

FLASH CARDS
COMMUNICATION METHOD
CARD SORT
EIDGAH MOHALLA
(Done Individually)

OBSERVATIONS
• Conversation starter
• People start to share experiences
• Pattern is seen in the answers

IMPROVEMENTS
• Activity needs to be longer
• More variety of questions
• Can be turned into a game for more people
  sense of gamification and purpose to the activity.
CARD SORT
TUBRAHALLI
(Done in Group)

OBSERVATIONS
• Space Required
• People are engaged
• Eager to get to the point
• Only 1 or 2 people answer
• Not easy to keep everyone attention
• Not as Qualitative
• Purpose of exercise might be lost.

IMPROVEMENTS
• Everyone must feel like they are involved
• Vote system - qualitative information
• Visibility
• Make into a Game
PICK A HOUSE
EIDGAH MOHALLA
(Done Individually)

OBSERVATIONS
• Personal Views
• Values
• What they look for in a house

IMPROVEMENT
• More options need to be given
• More questions can be asked
VENTILATION DEMO  
EIDGAH MOHALLA  
(Done Individually)

OBSERVATIONS
• Smoke isn’t as relevant - most people use Gas  
• Grabs attention  
• Seeing is believing

IMPROVEMENTS
• Ventilation more than Exhaust  
• Cones need to be fixed  
• Bigger Model
VENTILATION DEMO
TUBRAHALLI

OBSERVATIONS *(Done in Group)*
- People are intrigued,
- Message is able to go through
- People are able to relate
- Solution required
- Smoke is a problem
- Seeing is believing

OBSERVATIONS *(Done Individually)*
- Personal experiences come out
- Individual thoughts
- Their ideas also come out

IMPROVEMENTS
- Bigger model
- Outside skin
- Portable
- Cones fixed
LIGHT SIMULATION
TUBRAHALLI

OBSERVATIONS (Done in Group)
• Engaged and interested
• Meant to be done individually
• Used as a model, not as a simulation.
• Sunlight not as important as getting rid of smoke
• Advantages seen

OBSERVATIONS (Done Individually)
• Simulation can happen.
• No interest in sunlight

IMPROVEMENTS
• Experience ventilation
• Intuitive
• Inside of house
• Easily portable
**LIGHT SIMULATION**

**EIDGAH MOHALLA**

*(Done Individually)*

**OBSERVATIONS**
- Difference in lighting is seen
- They want you to get to the point faster
- Enjoyed by kids
- Communicates the message

**IMPROVEMENT**
- Identical houses
- Airlite needs to be made properly
- Enhance experience
- Led for bulb
- Improved to experience ventilation also
- More Intuitive
- Easily portable
FLASHCARDS
EIDGAH MOHALLA
(Done Individually)

OBSERVATIONS
• Visuals keep people interested
• The message is clear
• Feedback is given

IMPROVEMENT
• Can be understood better with a model
• Breathing in and out Card
• More cards on why than on how
• Too many technicalities are not required
• Practical and relatable analogies/solutions
FLASH CARDS
TUBRAHALLI
(Done in Group)

OBSERVATIONS
• Visuals attract people
• People stay and wait for next picture to come
• Not much feedback

IMPROVEMENTS
• Relatable storyline
• Can be understood better with a model
• Breathing in and out Card
• More cards on why than on how
• Too many technicalities are not required
• Practical and relatable analogies/solution
STORY PANELS
EIDGAH MOHALLA
(Done in small groups)

OBSERVATIONS
• Interested and engaged
• Visual help recall
• The context of the story is relatable
• Electricity bills
• Kids love the story
• Conductor with speaking skills required

IMPROVEMENT
• Flip book
• Additional Episodes
• Comic booklets
• Characters emotions and comical
• More dialogue and less narration
• More visuals
COMMUNICATION TOOL KIT OVERVIEW

DESIGNING CONTENT

• Context is important
  (customize visuals and storylines)

• Methods and issues can be correlated.
  (connect sessions with community’s perceived needs)

CONDUCTING A SESSION

• Multiple Visits
  (needs to be done multiple times repeatedly to make a lasting change)

• One Issue at a time
  (one method at a time, simpler for community to take in)

• Differing Methods based on the community
  (sequence of tools, frequency of visits, geographically where to conduct sessions, keep in mind number and gender of people)

• Multi Purpose
  (some tools, not all, can be used for other issues besides built environment)
COMMUNICATION TOOL KIT - OVERVIEW

LOGISTICS

• Documentation
  (need a third person to document)

PREPARATION

• Solutions need to be ready
  (if not product, at least a process - cost, material sourcing, plugging into house building process)
• Give away - comics/poster/mobile videos/small toys
  (find community champions)
SAANSAD ADARSH GRAM YOJANA
About this Document

The first part of this document provides an overview of the Sansad Adarsh Gram Yojana. The second part of this toolkit gives examples of model village low carbon interventions. This toolkit ends with a case study on Haniya Village in Karnataka. SELCO hopes to engage with Members of Parliament in the creation of Model Villages specifically for energy interventions.

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SELCO Solar Light Pvt. Ltd

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About

The Central government announced Sansad Adarsh Gram Yojana (SAGY) on October 11, 2014 as an attempt to develop villages as a hub for holistic development. The scheme envisages various interventions in order to promote personal, human, economic and social development. Under the Ministry of Rural Development, SAGY leverages on the leadership, capacity and commitment of the Member of the parliament to develop these model gram panchayaths.

Operational Model

Livelihoods
- Skills
- Financial Inclusion
- Basic Amenities

Education
- Health
- Nutrition
- Social Security

Economic

Human

Personal

Social

Personal Values
- Cleanliness
- Cultural Changes
- Behavioral Changes

Volunteerism
- Social Ethics
- Social Justice
- Good Governance

Reaching Out to the Grassroots

What will happen?
2,379 model villages will be developed under the Sansad Adarsh Gram Yojana

Focus on Rural Development

- Scheme is based on Mahatma Gandhi’s vision of transforming ‘swaraj’ into ‘su-raj’ (good governance)
- A village development plan will be prepared for each identified gram panchayat based on its needs
- Funds from Centre, state and MPLAD to be used for their development
- Two national-level committees to monitor scheme’s implementation

How many MPs are there?
Lok Sabha: 543
Rajya Sabha: 250, out of which 12 are nominated members

There are 2,65,000 gram panchayats in India

Source: Economic Times (Oct 8, 2014)
Suggested SAGY Timeline and Process

Source: Jigyasa by Swaniti Initiative
Part II: Model Villages

Mapping SAGY with Model Village Low Carbon Interventions

- **SCHOOLS + HEALTH**
  - Digital Education, Solar Cookers, Solar Suitcases

- **COMMUNITY CENTERS**
  - Solar Grid Tied, Mini Grids, Refrigerator, Water Purification

- **OPEN SPACES**
  - Water + Waste Management, Solar Street Lighting

- **DAIRY COOPERATIVES**
  - Solar powered milk testing, weighing

- **ENERGY ENTREPRENEURS**
  - Integrated Energy Centres

- **MOBILEREPAIR MECHANICS**
  - Solar Powered Soldering Irons

- **AGRICULTURE**
  - Solar Pumps, Dryers, Organic Farming

- **LEATHER TAILORING**
  - Solar Powered Sewing Machines

- **BRICK KILNS**
  - Fuel Efficient Kilns

- **COOKING**
  - Biogas, Improved Cookstoves

- **WATER HEATING**
  - Solar Water Heater

- **ELECTRICAL LOADS**
  - Solar Systems Efficient Appliances, Invertors

- **Financial Inclusion + Partnerships**

- **Livelihoods Related**

- **Household Level**

- **Community Level**
A. Education

1. SOLAR POWERING EDUCATION

This program includes lighting for schools, evening tuitions, n-computing systems, powering learning aids and tools for all educational purposes. Inadequate infrastructure in certain rural areas and constant power outages in grid-connected areas has resulted in many batches of students having to graduate without being able to use a computer or evening. Solar systems are able to reliably power computers, DVD players etc that can play a crucial role in learning.

Impact
- Efficient n-computing systems
- Exposure to interactive education material
- Facilitates understanding of the basics of computer applications

2. E-BUS (SOLAR POWERED COMPUTER LAB ON A BUS)

E-bus is a solar powered computer lab in a bus which travels around multiple villages catering to under-served rural informal and government schools. The bus can house upto 12 laptop points and 1 projector to equip children with basic computer knowledge and provide access to other educational content. The model is an efficient way of ensuring computer education reaches maximum number of students.

Impact
- Students learn basics of computers, opening up a variety of possibilities through and after school
- Understand syllabus better through audio visual aids
- Pique interest level by giving them access to better learning tools
- Watch videos and play games on health and hygiene (or other awareness/ information) modules
- Access easy, affordable, quality education (since the bus arrives right at their school i.e to their community)
A. Education

3. E-SHALA (DIGITAL EDUCATION PROGRAM)

Digital aids can be extremely useful if used in the education system. However, in the Indian rural education context, digital education aids such as multimedia kits, special learning software, projectors, tablets, are almost completely absent. Solar powering a computing device coupled with a projector and tablets for teachers in the E-shala program is combined with teacher training and relevant content. This becomes excellent digital learning aid for students.

Impact:
- Audio visual aids help in making lessons interesting
- Simplify difficult concepts and improve knowledge dissemination
- Sparks students interests and inspires them to learn
- Optimizes use of existing audio-visual labs in areas with power shortages

4. LIGHT FOR EDUCATION

This model consists of a central charging station at the school, a study light that a student keeps at home and a portable pocket size battery pack that the student carries to and from school. Every student brings the battery pack to school in the morning, keeps it for charge throughout the day and takes it home in the evening according to school timings.

Impact:
- Decentralized model, independent of grid, cost effective, reduces expense of providing individual panels
- Provides safe, bright, sufficient light at home to study
- Improves attendance, as students need to come to school to charge battery
- Parents see an added value in sending their children to school
- Improved health conditions from reduced kerosene use
B. Energy and Renewable Energy

5. MINIGRIDS

Custom solar mini-grid systems to electrify multiple households work well in villages where ownership of land and mini-grid is well defined. Minigrid systems provide basic lighting and mobile charging to all the houses and an additional option for a fan and television. A local revenue collection mechanism is tailored to the technical solution.

Impact
• Ensures flexible energy access (can add on capacity and appliances)
• Collections can be combined with land rent/other services as per ownership specification to enable easy collections

6. HOME ENERGY SYSTEMS

This traditional model connects rural, un-electrified, under-electrified and remote households to the appropriate solar technology and the financing mechanism. By doing so, the user not only avails of an asset in the form of the solar home lighting system, but also becomes part of the financial system and is able to build a credit history. The home lighting system allows for customization based on the needs of rural users. One of the most significant benefits of the model is the impact on education and livelihoods.

Impact
• Households avail of an asset and are able to build credit history
• Access to improved lighting for school going children for reading and completion of school work
• Significant health benefits for children and parents by eliminating use of kerosene
• Reduced risk of fires caused by kerosene
• Significant savings to households that can be invested in other productive uses
B. Energy and Renewable Energy

7. SOLAR BACKUP AND GRID TIED SYSTEMS - PANCHAYAT AND COMMUNITY BUILDINGS

Grid tied system with backup is essentially a Rooftop solar PV array along with batteries, where solar power can be used to complement and back up grid electricity. Any additional generation can be fed back into the grid at a per unit price fixed by the local DISCOM.

Impact
• Effective pilot to show viability of solar grid-tied systems with back up
• Reliable power source
• Possible Revenue generation

8. CLEAN COOKING FOR COMMUNITY - SCHOOLS AND HOMES

An integrated model combining use of solar cooking, biogas cooking and improved cook stoves can help large institutions move to cost attractive and environmentally sustainable cooking methods.

Impact
• Savings on fuel expenditure for cooking, therefore increased funds for school equipment
• Awareness among students of solar and energy saving technologies
• Health Benefits from improved indoor air quality
B. Energy and Renewable Energy

11. SOLAR WATER HEATERS

Solar water heaters are widely used as eco-friendly ways to heat water for household purposes. Utilising solar thermal energy, solar water heaters can heat water to up to 60°C. They are a good alternative to using wood or biomass to heat water. They operate by being fed from an existing water tank, heating the water and then the water is gravity fed to where it is needed.

Impact

- Reduction in the cost of fuel needed to heat water
- Reduction in the labour requirement to heat water translating into more time for women who are mostly responsible for this to take up other useful tasks and responsibilities
- Reduction in emissions due to less burning of wood

12. SOLAR INVERTER SYSTEMS

Inverter systems provide energy backup for entire home electricity systems. These can be grid charged, with a battery charging during electrified periods and discharging during power cuts.

Impact

- Reduced electricity bills and dependence on grid systems
- Additional operational hours for users
- Reduced reliance on grid
- Increased usage of renewable energy leading to reduced carbon emissions
C. Common Services Centres

13. INTEGRATED ENERGY CENTERS
(CENTRAL CHARGING STATIONS + COMMUNITY CENTER)

Energy centre’s are essentially solar powered independent service centers for rural/urban/peri-urban spaces where services like lighting, mobile charging, charged batteries, are provided on a daily/monthly rental basis. Integrated energy centers (IEC) are energy centers that are co-located with any community space like a library, education centre, health centre etc OR vice versa i.e. education, health, finance services can be introduced in the energy providing unit so that these centers will become a hub for the underprivileged to access services that are either difficult to obtain or unreliable.

Impact
- Customized local ownership models (small scale entrepreneurs, operators from the community or community owned and run systems)
- Catalyzes and introduces services on a need basis
- Community hub for multiple partners and social interventions (can be used for services related to health, education, energy access, awareness, livelihood etc.)

14. COLD STORAGE

Mini, medium and large scale cold storages have applications across various sectors. SELCO can package solutions for petty shops, bakeries, vegetable and fruit vendors, fish storage units/other cold storages, vaccine boxes and cooling for households purposes. SELCO works with technology partners to develop and implement sustainable cooling solutions that directly impact well being, health and livelihoods in a community.

Impact
- Facilitates livelihoods and savings for fruit and vegetable vendors, fishermen and entrepreneurs dealing in perishable goods etc
- Facilitates health by catering to ILRs and vaccine boxes in off grid/remote locations
- Helps in increasing income, reducing wastage and improving accessibility for entrepreneurs, workers and communities.
C. Common Services Centres

15. COMMUNITY LIGHTING

Street lighting LED and CFL with varying wattages and outputs are designed and installed for community welfare.

Impact
- Customized street lighting and area lighting for roads, schools, community centers and village panchayats
- Makes the areas safe and secure
- Enables activities after sunset which is crucial to development

16. SOLAR POWERED PUBLIC HEALTH CENTRE

A unit of this nature would include health care technologies such as: solar lighting and fans, solar refrigeration for medicine storage and solar back up for other diagnostic and care equipment. Accessories unit of this nature would include health care technologies such as:

(a) Solar powered autoclaves
(b) Solar powered refrigerator for vaccines
(c) Solar maternal suitcase for health workers who attend to deliveries etc.

Impact
- Improved access to healthcare without a strain on families to travel longer distances.
- Minimal requirement for electricity and other strained resources
D. Livelihood Opportunities

17. SOLAR SEWING MACHINES

In many communities the opportunity for income generation through vocational training or creating a work center could greatly benefit the users. In order for this to happen sustainably there are 2 components to this project- solar powered machines for- 1. Vocational training and 2. Improving productivity and 3. providing better opportunities. Motors of existing machines are also replaced by much more efficient motors to enable solar powering and reduce electricity or diesel costs.

Impact
- Increases productivity, quality of work and time taken to finish work
- Gives men/women the opportunity to start their own business
- Provides access to skill training in under-served communities

18. SOLAR DRIERS (PAPAD + FRUIT + FISH)

Solar dryers have a number of uses in agricultural and livelihood processes. They can be used as an environmentally sustainable way to dry produce to increase profits for farmers, SHGs, small businesses and community cooperatives. There are a number of different options utilising solar thermal technology in greenhouse models or flat-bed collectors.

Impact
- Increased livelihood opportunities and income
- Reduction in manual labour requirement
- Reduction in the use of less environmentally sustainable methods of processing, such as burning of fossil fuels or biomass
D. Livelihood Opportunities

19. SOLAR POWERED SOLDERING IRON

Soldering irons are most often used for installation, repairs, and limited production work in electronics assembly. High-volume production lines use other soldering methods. Large irons may be used for soldering joints in sheet metal objects.

Impact
- Increased income for entrepreneurs
- Value addition and diversification of income sourcing
- Improved facilities for local people
- Reduced electricity bills
- Extended operational hours

20. SOLAR POWERED DAIRY COOPERATIVES

Dairy cooperatives in rural areas face issues of unreliable electricity supply which increase the inconvenience and affect the efficiency of work. At present, the only alternative for lighting is kerosene adding to the expenditure. With regard to the milk weighing and testing machines, their power put together is not high enough for existing generators in the market to meet this requirement. There is a huge opportunity to introduce solar powered systems to enhance the productivity of the existing cooperatives and also expand their operation.

Impact
- Allows for more effective work, both during the day as well as after sunset. Milk testing can take place immediately and in bright light.
- Addition of small-scale solar powered chilling machines, ideal for village level cooperatives can reduce spoilage of milk and ensure produce is intact to move to the next level of the value chain.
E. Water

21. WATER PURIFICATION
SELCO implements solar powered community sized water purification units in villages and slums with over 30-50 households. Existing units can be solar powered. For new systems SELCO works on ground data (quality of water, course of water, community dynamics etc) to design systems appropriate for local conditions.

Impact

- Reduced Cost on availing purified water
- Reduced expenditure on health
- Increased productivity time (due to time saved to access water)
- Entrepreneurship/Operator mode empowers local individual from the community
- Increased well being of children enables them to learn and have better attendance in school
- Women need not worry about water access, source and type and hence spend time on income generating activities.

22. WATER PUMPS
Solar water pumps range from agricultural pumping, domestic and institutional requirements and micro pumping.

Impact

- Reduced maintenance cost of motor by overcoming issues of: Low voltage (starter issues)
- Increased convenience for the farmer: ability to pump water during the day rather than inconvenient times
- Expected increase in crop yield and income
- Reduced diesel costs
Case Study: Haniya Village

- Holistic development of a village in Hosa Nagara Taluk, Shimoga (Karnataka)
- Partners – Gram Bharathi Trust & Applied Materials Foundation
- Financial Partner - Pragathi Grameen Bank
- Undertaken complete need assessment and delivery of customized solutions

- Solar micro pump for the temple
- Lighting for Temple

- Electrification using home lighting systems – 145 Households
- Light for education programme for school children (study lamps)
- N - Computing and solar powered computers

- Lighting systems for shops and enterprises
- Lighting for Gurukul
SAGY Case in Action

- Balpa – closely working with Member of the Parliament and gram panchayat
- Financing Partner: Syndicate Bank

2 E-Shalas - Completed

House Electrification - Next Phase

Powering Public Health Center - Next Phase

30 street Lights - 7 volt - Completed
5 high powered lights - 21 volt - Completed
Electrification at community center - Next Phase

Completed 100% Solar Village Projects

- Haniya
  - Year: 2013
  - # Households: 145
  - Partners: S3IDF, Applied Material Foundation, Gram Bharati Trust

- Kundapur - Maddur, Jadkal, Basiberur
  - Year: 2003/04; 2013/14
  - # Households: 500
  - Partners: Syndicate Bank, SKDRDP

- Belthangady
  - # Households: 2000
  - Partners: SKDRDP, Rotary International

- Belagumba
  - Year: 2007-10
  - # Households: 140+
  - Partners: Cauvery Kalpathuru Grameena Bank

- Sonalhaddi, Machhur
  - Year: 2009-10
  - # Households: 110
  - Partners: Cauvery Kalpatharu Grameena Bank

- Mysore-Bomalpur (HD Kote), Sonalhaddi, Machhur
  - Year: 2009-10
  - # Households: 110
  - Partners: Cauvery Kalpatharu Grameena Bank

- Hassan-Mallikarjunpura
  - Belagumba
  - Year: 2007-10
  - # Households: 140+
  - Partners: Cauvery Kalpatharu Grameena Bank
SELCO

Since 1995 SELCO works to improve the lives of the underserved by providing them access to sustainable energy solutions at their doorstep, in a holistic manner that is socially, environmentally and financially sustainable.

SELCO - India along with SELCO Foundation and incubation center has pioneered a number of innovative, customized solutions for specific areas.

Experience in developing model low carbon villages
Established partner networks for additional interventions
Ongoing and completed projects in cross cutting themes of Education, Livelihoods, Health etc

SELCO Impact

- 20 years
- 45 branches
- 2,00,000 households
- 5,000 institutions
- 200 Digital Education Programs implemented
- 25,000 lamps distributed through Light for Education Program
  = 40,000 lives impacted
- 25 Integrated Energy Centers across geographies
- 22 different types of services
- 6074 households have been impacted
  = approximately 15,370 individuals have been impacted
- 15 different types of livelihood interventions
  = approximately 100 livelihood impacted