



Global Himalayan Expedition

Lighting up the Roof of the World



Core Objective

Global Himalayan Expedition leverages tourism and technology to provide **Clean Energy, Digital Education, Livelihood Creation, and Wireless Connectivity** to remote mountainous communities



Vision and Mission

Vision

To empower remote mountainous communities with sustainable infrastructure and promote them as tourist destinations

Mission

To impact 1 million lives by promoting Impact tourism across various remote geographies on earth

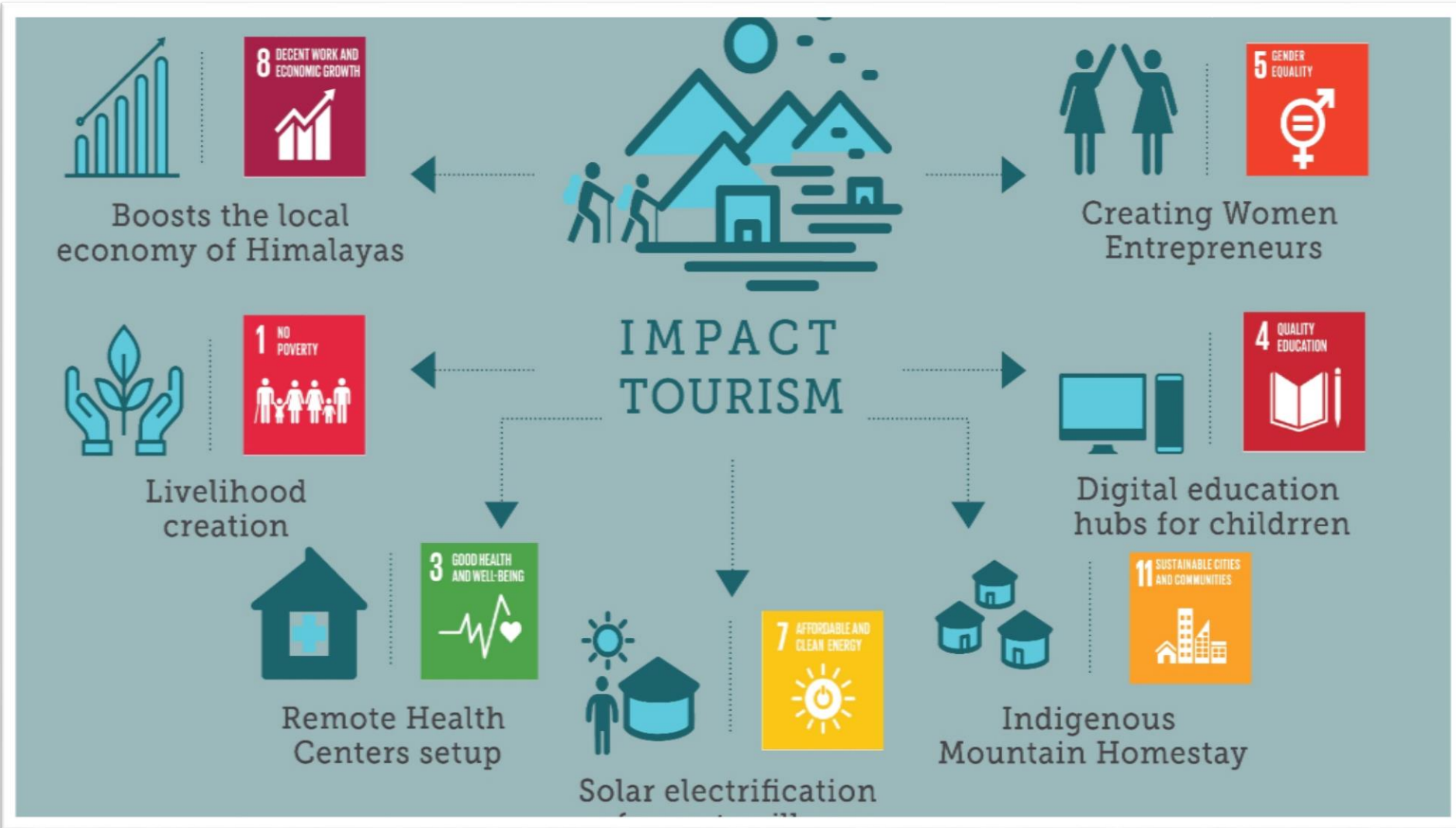


Why Himalayas?

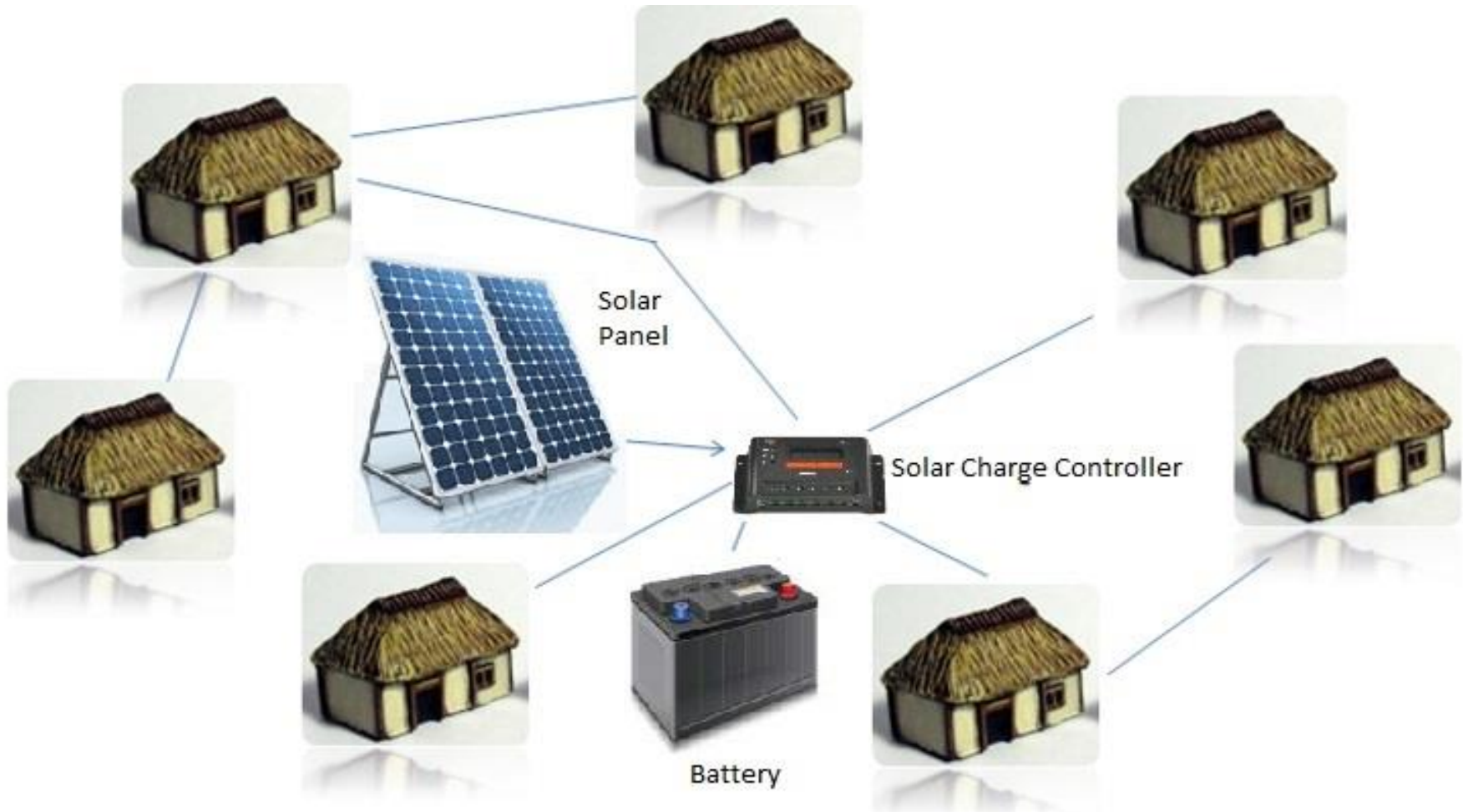
- 70% Himalayan population is off grid of which almost 50% are still without electricity
- Highest Solar Insolation levels of $1250\text{w}/\text{m}^2$ perfect for Solar energy projects
- Fragile ecosystem responsible for worlds fresh water and biodiversity
- Holds centuries old tradition, culture and civilizations that needs conservation
- 72 million population on Indian Himalayas – majority are below poverty line
- Limited roads, health centers, schools or connectivity – but sustainable lifestyles



Sustainable Solution



Technology - DC Solar Microgrid



Why DC Solar microgrid and not AC?

- DC highly efficient than AC– **No conversion losses**
- Safe and Risk free for remote villages – **No Shock**
- Easy to operate and maintain by villagers – **Easy Operation**
- Same wiring for **upgradability to AC** in future
- Local capability development for maintenance is easier.
- Better LED Drivers functioning with more Lumens than AC
- DC product ecosystem available – DC LED TV, DC Grinders

LESS INVESTMENT FOR MAXIMUM IMPACT





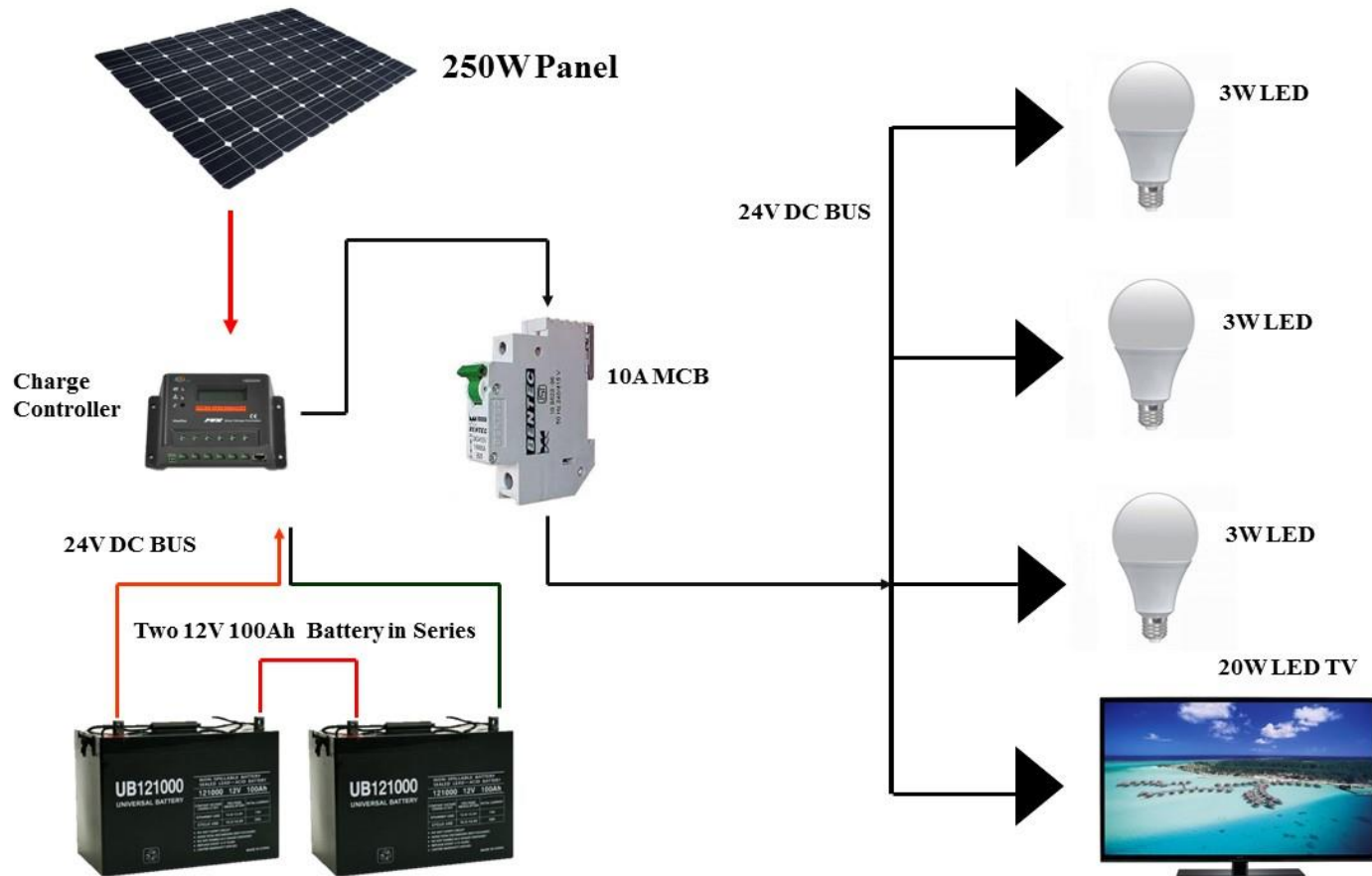
250 -500 W Solar DC Grid



24/48V DC – 2.5W LED

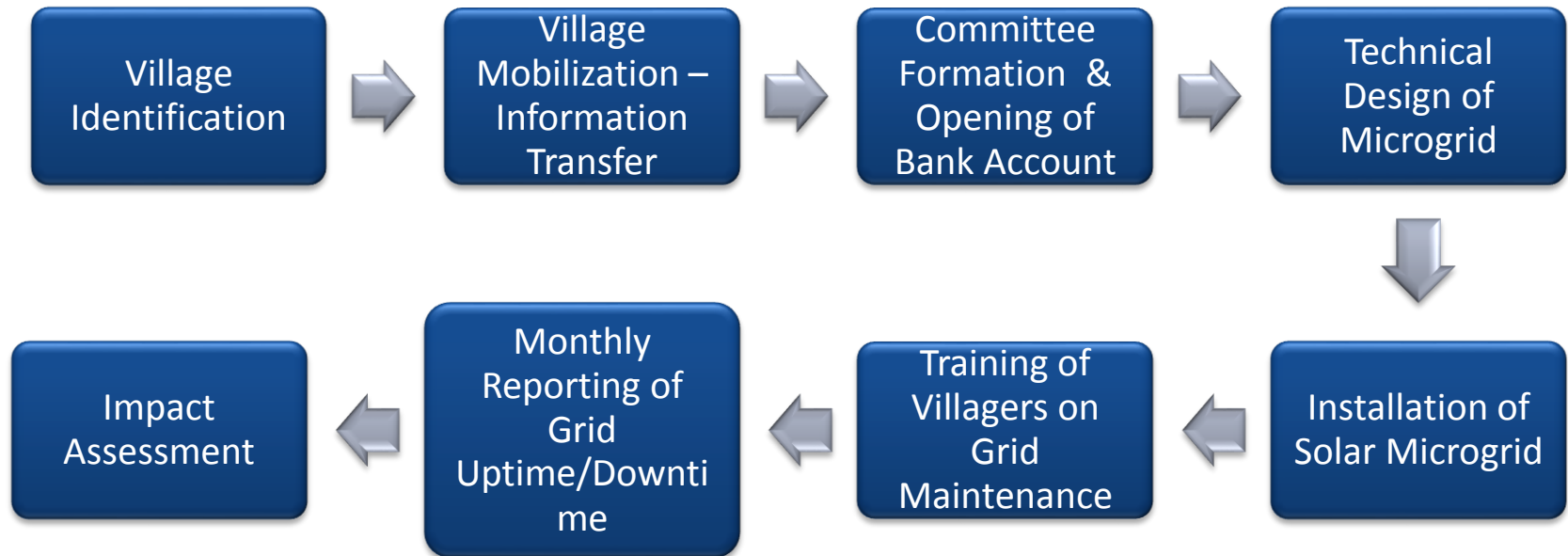


Single Line Diagram - DC Solar Microgrid



Electrification Process

Global Himalayan Expedition follows a pre defined process that is based on our learning while working with the Himalayan communities for years.



Village Identification

We search villages through local contacts as there is no database or survey conducted due to their in-accessibility. The team treks sometimes for 5-6 days to reach Villages or need to drive on un- motorable roads



Village Mobilization & Awareness on Solar

It's important to have the community as well local leadership buy in before implementing the Solar microgrid. The process also includes educating villagers on the benefits of using Solar and its long term affect



Joint Bank Account

A committee is formed in the village that looks after the upkeep and maintenance of grid. Every villager contributes a monthly rental which goes into a Joint account opened by the villagers



MONTH & DATE	PARTICULARS	WITHDRAWN		DEPOSITED		CR.		BALANCE		INITIALS
		Rs.	P.	Rs.	P.	Rs.	P.	Rs.	P.	
07/09/15	Pay Cash			9,600				9,600		



Grid Material Transportation



Solar Micro-Grid Installation



Religion & Science

Villagers putting the traditional Buddhist 'Khatak', on the Solar Charge Controller for the longevity of system.



Our Model



Impact Expeditions

- Impact expeditions to electrify remote villages
- Team of 10-20 people as part of expedition
- Promotes the theme of responsible leadership and sustainable tourism among the participants.



Village Homestays

- Develop the homes of villagers for tourists to stay inside villages.
- Conduct village immersion tours for tourists to experience local tradition and culture
- Results in Income generation for the village community and promotes entrepreneurship at village level



Village Handicrafts

- Promote the goods and handicrafts produced in villages by offering a marketplace
- Training of women on the advanced weaving and handicraft techniques to make attractive handicrafts

Holistic Development of the Rural Communities



Sumda Chenmo – The 11th Century village

Village: 3 days trek from the nearest road

17 August, 2014 19.40 pm

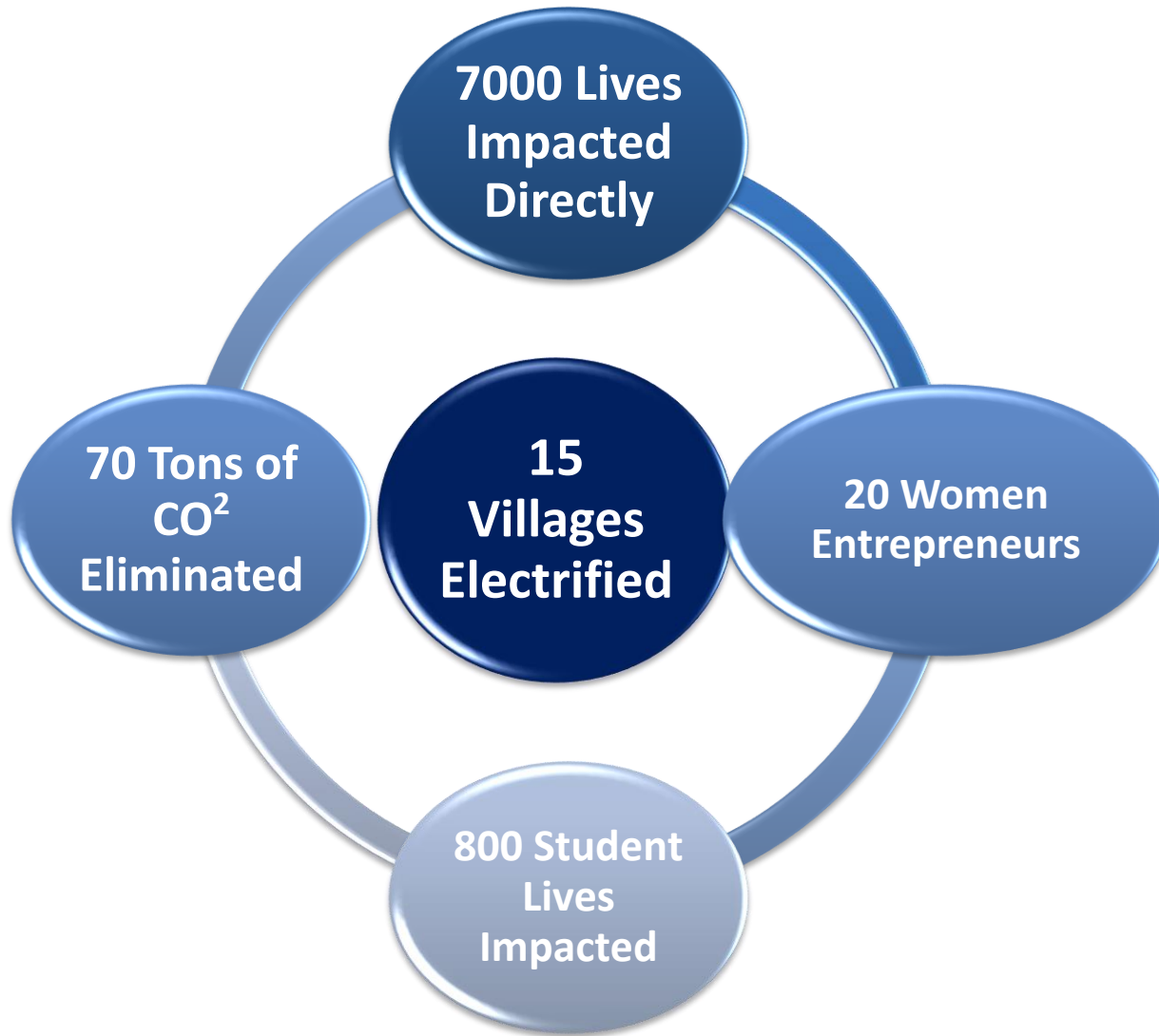


Sumda Chenmo

18 August, 2014 19.40 pm



Snapshot 2016



**150 Tourists Impacted
7000 Lives**

**1 Tourist Impacts
7 Lives Directly**

**1 Tourist Impact
35 Lives Indirectly**



Visible Impact of Electrification



**Kerosene Lamps used for
lighting & cooking**

Impact after LED Lighting



Lingshed Monastery Electrified – 14 Microgrids



Testimonials

The expedition exceeded all my expectations. I have never been so happy when I saw the smiles on the faces of the villagers seeing light for the first time. I am thankful to GHE for such a professionally conducted expedition.

Seth Dantis, GE



The expedition has offered me personal and professional growth that I never expected. Leadership has been practised in the most remote villages of the world long before we learn and apply them in developed countries

Patrick Lee, Exe. Committee Member – IEEE Smart Village



This expedition has been one of the most positive influential experience of my life. I was tested both mentally and physically. GHE provided a very professional experience and I would recommend this to everyone

Steve Mumm ,GE Executive. Global Operations Leader. XLP at GE



Digital Education – Himalayan Innovation Centre (HIC)



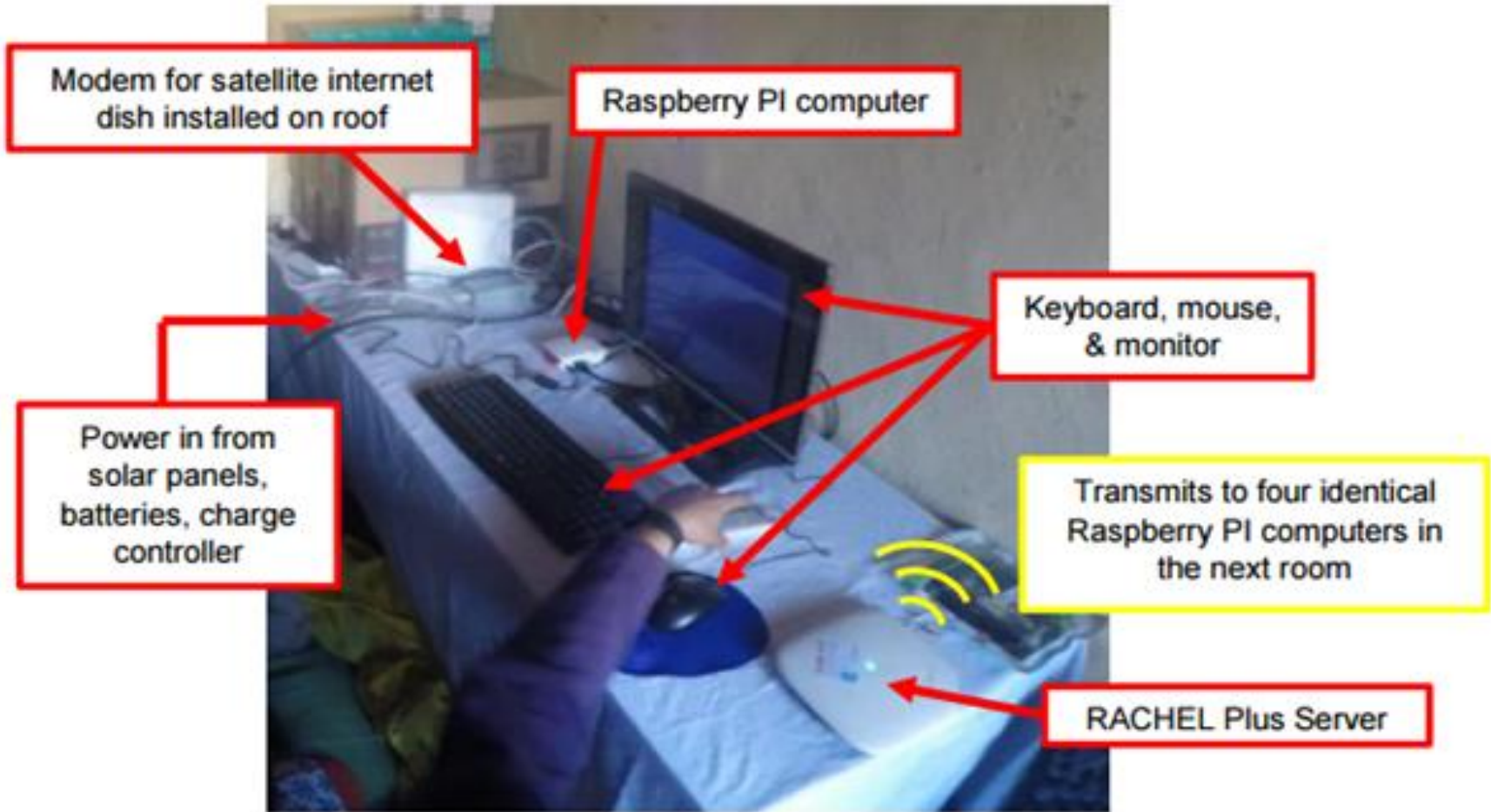
HIC in action in one of the Remote Himalayan village



- **Children access offline Internet Content**
- **Wikipedia, Khan Academy, TED talks and the School Curriculum pre loaded on a 500GB Wifi Server**



The Himalayan Innovation Centre Technology



Areas of Expansion



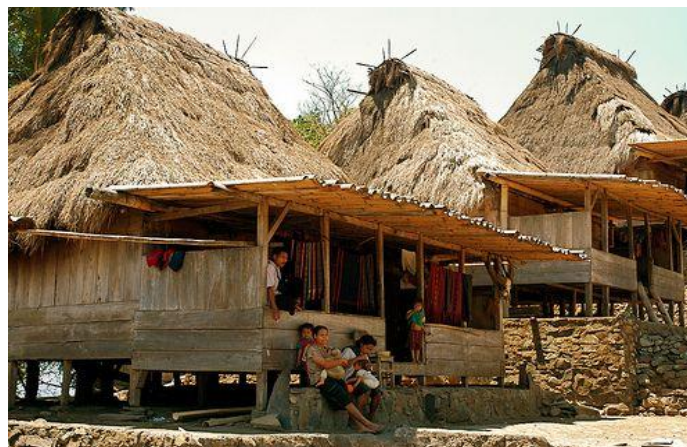
Ecuador



Peru



Myanmar



Indonesia



Strategic Partnerships



**NATIONAL
GEOGRAPHIC**



WORLD
ECONOMIC
FORUM





GHE Impact & Success

- **Electrified 25 Villages in the Upper Himalayan Valley of Ladakh India**
- **Impacted 15000 Himalayan Lives**
- **Increase in approx. \$30000 of income across 14 Villages Electrified**
- **Saved 62,900 Litres of Kerosene Oil Annually & mitigated 157 Tons of CO² emissions.**
- **Setup 105 microgrids, installed 3700 LED lights and lit up 1500 rooms**
- **All the microgrid setup are community owned and follow a monthly rental model for maintenance and upgradation**
- **Trained 10 Villagers from Villages into Entry Level Solar Grid technicians**
- **We now Design our own DC LED Bulbs (3W), DC Solar Street Lights (20W) and DC LED TV (20W, 30W), DC Computing Devices (10W)**
- **GHE's service centre generated \$3500 revenue in 4 months servicing installed microgrids and also new installations for resorts.**
- **Mountain Homestays initiative generated \$4000 worth revenue across 10 villages.**



GHE Focus 2017 - 2018

- Electrify 50 Identified Remote Villages in Indian Himalayas by 2017
- Impact 40,000 + Lives Directly
- Promote 100 Homestays for Tourists in our electrified villages
- Setup 20 Himalayan Innovation Centers promoting Digital Education
- Formalize energy access partnerships with African, South American and Asian Mountain Partners



Let there be Light!



Thank You!

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