COP26 2021

5 November 2021
11.30 AM - 12.45 AM (UK time)

Local Climate Solutions & Eco-Village Development, 100% RE in NDCs, East Africa, South Asia, Europe

Eco-Village Development in South Asia - India
Introducing Eco-village Development as Climate Solutions

by Sanjiv Nathan

Integrated Sustainable Energy and Ecological Development Association (INSEDA) INDIA / Regional Coordinator INFORSE South Asia

About INSEDA
Integrated Sustainable Energy and Ecological Development Association

- INSEDA is an **NGO Registered in 1995**
- Working in **India and South Asia**
- **INSEDA** has an **observer status** at **UNFCCC since 2015**.
- Dr. Raymond Myles, Secretary General, INSEDA is one of the **Founder members** of International Network for Sustainable Energy **(INFORSE)**
- Hosting the **Regional Secretariat of the INFORSE** since 1995
- Member of networks - BigFIN, VANI, CANSA, and GENOA
- Dr Myles is the innovator of low carbon, bamboo-based affordable green technologies developed by INSEDA **.**
- Designed developed **three kinds of biogas plants** namely, **Deenbandhu, Grameen Bandhu and High-rate Bi-phasic**
- INSEDA is **innovator** of Climate-Friendly, **Eco Village Development (EVD) model as** effective **Mitigation & Adaptation** solution
- **Conducted International training** on **EVD technologies**
- **Transferred technologies** to different countries - Cameroon and Uganda
- Implementing **carbon credit projects** in India **under Gold Standard**

International training on EVD conducted by INSEDA

UNFCCC Conference

How Eco Village Development (EVD) can help in

the race against the climate crisis

- As **70%** of population lives **in rural areas, it is necessary** to find **local solutions** apart from macro-level solutions.
- **Covid-19** pandemic has shown that **local solutions are necessary** when supply chain is cut off.
- EVD consists of a package
  - of **eco-friendly, low-carbon, green technologies** *within villages.*
  - which can be **easily implemented** and replicated.
  - that **helps** in **mitigation of climate impact** or adaptation of new solutions to **build climate resilience.**
  - **which focuses** on local people (***people who need it the most)***, especially **women, poor, marginalized**, and **weaker sections**
  - Covers **energy, water, agriculture, livestock, fodder, food processing (drying)**
  - Provides **sustainable livelihood** by **income generation – dryer, kitchen garden, etc.**

Some of the EVD Solutions installed in Ranichauri, A small village in Himalaya region of India

Biogas plant






Rooftop Rainwater Harvesting



Bamboo Compost Basket


Solar Poly Green House



Solar Tunnel Dryer

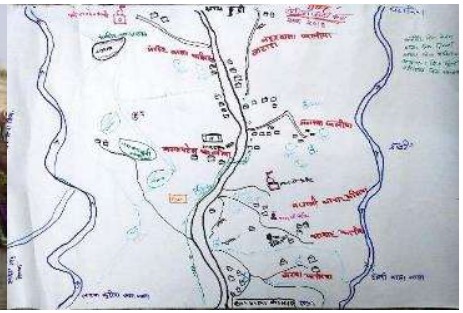

Organic Agriculture and Kitchen Garden


Heera – A Multipurpose Hybrid Improved Cook Stove (HICS)


Feasibility Study and Participatory Planning

Eco-village Development (EVD) Concept in Margul Panchayat, Bajna Block, Ratlam District, MP, India





PRA and Focus Group Discussion (FGD)




Project Area **Traditional stove** **Dung cakes** **Unused LPG**

https://www.inforse.org/asia/pdf/EVD_Feasibility_Study_INSEDA_India_July_2020_DRAFT_Summary.pdf

Summary: EVD Solutions – Level of feasibility in the surveyed villages

EVD Solutions	Feasibility				
	Economic	Technical	Organisational	Cultural	Politically
Heera a Multipurpose Hybrid Improved Cookstove (HIC S)	30 % families could afford	Feasible for all families	Training required	benefits showcase postive feedback	Government distributed LPG but not used
Regular IC S	All families can afford	All families can use the	Training required	benefits showcase postive feedback	Government distributed LPG but not used
Biogas	Only 10% could afford	There are animals, but only 10 % where water is available	Intensive Training	Motivation required	promoted under government schemes
Solar PV streetlight	Requires external funding	villages are electrified, but erratic supply	Training in maintenance	safety of equipment against theft	villages are electrified hence low support
Solar lantern LED with mobile charger	All families can afford	no technical limitation	Requires training	No cultural limitation	There are no political limitations
Natural daytime lighting	All can afford	Leak proofing required	Required training	Some may not like to disturb roof	There are no political limitations
Solar drier	SHG* can afford	Anyone can install	Training required	Need to showcase its benefits	There are no political limitations
Vermicompost with shade and concrete floor	SHG* can afford	feasible for 50% families where water is available	Support for earthworms procurement and Training	Need to create awareness to handle the vermicompost	There is support available under government schemes
Vermicompost - earth worms only	All can afford in small spaces	feasible for 50% families - water is available	Support for earthworms procurement/ Training	awareness to handle the vermicompost	support available under govt schemes
Bamboo compost Basket	All can afford,	Feasible for all	Training required	families are making pit compost	There are no political limitations
Poly Green House	5% of farmers can afford	Few can be installed, where water is available	Intensive training is required	Awareness creation required	funding opportunities under govt schemes
Rooftop Rain Water Harvest Tank, Bamboo based	30-40% families can afford	All can install	Training required	motivation required	There are no political limitations
Kitchen garden	Families can afford in small spaces	Can carry out where water available	need to distribute good quality seed	already doing but not organically	There are no political limitations
Day and night indoor solar powered cooker +solar home light	Needs financial support	All can use	training required	Food habits and adaptation	There are no political limitations
Energy plantation/ Household Forestry	Community can do it with eternal support	Feasible in common land	sapling available with horticulture/forest dept	community responsibility	Local government support needed
Horticulture	All families can plant	30% can plant where water is available	Sapling to be organised	several fruit trees already available	There are no political limitations
IGP - Mushroom, poultry, trading, basket making	SHGs can initiate with initial financial support	Several Income Generation Programme (IGP) technically possible	Training/d hand holding marketing support	SHG strengthening required	Government schemes are available
Solar pumps	Funding required	Some farmers can avail having water source	Training required	Security issue is there	Government scheme available
Gully plugging	Funding required	Several sites available	Organising community	Community needs to involve	To be included in Panchayat plan
Micro hydro	Large Funding required	Low flow in river	Lack Capability	No awareness	No scheme as region not suitable
Hydraulic ram Pump	Large Funding required	Low flow in river	Lack Capability	No awareness	No scheme as region not suitable
Micro and Mini hybrid wind (combination of wind + solar PV system) turbine	Large Funding required	There are big wind mills in area	Lack Capability	No awareness	No scheme
Drip/ sprinkler irrigation	Large Funding required	10 % area can be covered	Training required	Awareness required	Govt. support available
Bamboo Housing	Funding required	families can construct small room	Training required	Awareness required	Govt. support available
Solar Box Cooker	All families can install if financial support is available	Enough sunlight available	Extensive training required in motivating to new food habits	food habits and cooking timing do not match	Govt. support available
Solar parabolic cooker	Large funding required	Enough sunlight available	Extensive training required in motivating to new food habits	food habits and cooking timing do not match	Govt. support available

*SHG- Self Help Group ** IGP- Income Generation Programme

High Feasibility level	Medium feasibility level	Low Feasibility level

Colour coding for feasibility level

EVD Solutions being Installed in Model Village - Margul

- HEERA -a multipurpose hybrid improved cookstove (HICS) and Jwala improved cookstove (ICS)
- Solar PV powered street light
- Solar lantern with LED
- Solar dryer
- Vermi-compost
- Bamboo compost basket
- Solar poly greenhouse
- Rooftop rainwater harvesting (bamboo reinforced cement mortar)
- Household biogas plants - grameen bandhu model (made using bamboo reinforced cement mortar)
- Kitchen gardening
- Indoor solar cooking + solar home system
- Energy plantation, horticulture, household forestry
- Income generation activity through SHG like mushroom, poultry, trading, and basket making.
- Bamboo Houses

Apart from these there are other options available such as solar parabolic/ box cooker, Micro hydro, water mills, micro/ small wind mills, hydraulic ram pumps, solar pumps, drip and sprinkler irrigation, solar passive heating/ cooling and soil and water conservation like ponds, gully plugs, check dams, earthen dams, contour bunding, contour trenching and mangrove plantation in coastal region.















EVD projects contributing to SDGs

1 NO POVERTY	**Poverty Reduction – Helps increase in income** - solar dried produce and products grown using solar poly-greenhouse, kitchen garden, and from making bamboo products etc.
2 ZERO HUNGER	**Reduction in hunger** - availability of Improved **quality of produce** - vegetables and fruits from kitchen garden.
3 GOOD HEALTH AND WELL-BEING	**Good health** because of clean kitchen, r**educed indoor and outdoor pollution,** drudgery reduction, increased income and nutrition food IHME estimates 1.6 m deaths/year, WHO-4.3 m
4 QUALITY EDUCATION	Helps in s**kill development of women and farmers**
5 GENDER EQUALITY	**Gender: focus on women, participation in planning, income generation and implementation, Reduces drudgery of women in fuelwood collection, cooking etc.**
6 CLEAN WATER AND SANITATION	Availability of **clean water** because of roof water harvesting unit and sanitation because of biogas and composting
7 AFFORDABLE AND CLEAN ENERGY	**Clean Energy** is central to EVD conceptthrough improved Cookstove, biogas, solar home system, etc. Reduces use of firewood - 1 million tons of wood is used every day for cooking.

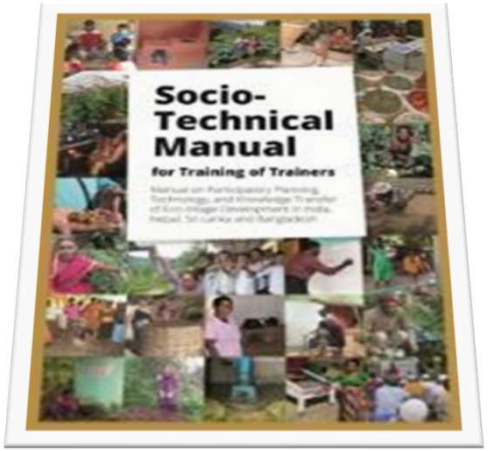
8 DECENT WORK AND ECONOMIC GROWTH	Helps in **economic growth** through income generation activities.
10 REDUCED INEQUALITIES	The project focuses on **reducing inequality** and involves most vulnerable population
12 RESPONSIBLE CONSUMPTION AND PRODUCTION	**Responsible production** through **organic manure, Soil and water conservation** because of bamboo and fruits/ fuel and fodder tree plantation, **Improved soil health.**
13 CLIMATE ACTION	**Climate action –** mitigation, adaptation, reduction in **movement in forest areas** (wood collection), **carbon sequestration,** GHG reduction, **climate resilience.**
15 LIFE ON LAND	The EVD concept includes promotion of home forestry and soil and water conservation helps to **halt and reverse land degradation**
16 PEACE, JUSTICE AND STRONG INSTITUTIONS	The concept involves **responsive, inclusive, participatory and representative decision-making at all levels**
17 PARTNERSHIPS FOR THE GOALS	**Work in partnership : participatory planning, project partnership in 4 countries**

Publications under Partnership Project

- **White Paper: Mitigation and Adaptation with Eco-Village Development (EVD) Solutions.**
- Describes calculation for CO_2 reduction through various EVD solutions.
- The calculations can be used in NDCs.

Training of Trainers (ToT) Manual on

- Eco-Village Development in South Asia Available in English and four South Asian languages - Hindi, Bangla, Nepali, Sinhala.



Eco-Village Development as Climate Solution Proposals from South Asia

Thank you

Proceedings available at:
www.inforse.org/cop26.php3

More info:
www.inseda.org

Relevant Eco-Village Development (EVD) websites:
www.inforse.org/asia/EVD.htm
www.ecovillagedevelopment.net
www.inforse.org/asia/Pub_EcoVillageDev_TOT_Manual_SouthAsia.htm