
Global Transition to Renewable Energy
Gunnar Boye Olesen, INFORSE, NFRE, SE, Denmark

East Africa:

Promoting Local Solutions as Important Climate and Development Solutions in East Africa – Online Catalogue
Mary Swai, TaTEDO, INFORSE East Africa, Tanzania

Transition of Kenya to 100% Renewable Energy with Focus on Local solutions. Key Messages
Nobert Nyandire, Suswatch Kenya

Transition to 100 % Renewable Energy in Uganda with Local Solutions, Sustainable Biomass
Richard Kimbowa, UCSD Uganda INFORSE East Africa Chair

More: https://inforse.org/SB58.php

South Asia

Promoting Local Activities in South Asia Supported by Eco-Village Development Initiatives
Anzoo Sharma, Center for Rural Technology (CRT), Nepal

Successes with Local Climate Solutions in South Asia & their Promotion
Sanjiv Nathan, INFORSE South Asia & INSEDA, India

Database Online, Documenting Successful Local Climate Solutions in South Asia

Abdul Arif, Grameen Shakti, Bangladesh

Local Solutions in the GST, Why and How
Dumindu Herath, IDEA, Sri Lanka

Dialogue, Conclusion

Thanks to
Successes with local solutions in South Asia (India, Nepal, Bangladesh and Sri Lanka) and promotion of them

Dr. Raymond Myles and Sanjiv Nathan
Integrated Sustainable Energy and Ecological Development Association
INSEDA & INFORSE South Asia, INDIA

Project supported by
CISU CIVIL SOCIETY IN DEVELOPMENT
About INSEDA

- **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**, President-cum-Chief Executive, INSEDA is one of the Founder members of **INFORSE**
- Hosting the **Regional Secretariat of the INFORSE-SA** since 1995
- **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**
- **Innovated** Climate-Friendly, **Eco Village Development (EVD)** model as effective **Mitigation & Adaptation** solution
- **Transferred technologies** to different countries - Cameroon and Uganda
- Implementing **carbon credit projects** in India under **Gold Standard**

**UNFCCC Conference**

**International training on EVD conducted by INSEDA**
Low carbon, Climate Resilient Eco-Village Development in South Asia - Since 2015

EVD NextGen EVD project started in July 2020 for village-based, local, low-carbon development in four South Asian countries:

- INSEDA – India
- CRT - Nepal
- Grameen Shakti – Bangladesh
- IDEA – Sri Lanka
- INFORSE-South Asia - Regional
- CANSA – Regional

- With programme management support by DIB Denmark and
- Technical Support by INFORSE

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
- focuses on local people, especially the poor, marginalized, women and weaker sections of local community

Support by CISU, Denmark
EVD Solutions in Bangladesh - Grameen Shakti, Bangladesh

- Household Biogas Plant
- Solar Home System
- Bamboo reinforced Slurry Pit
- Solar Street Light
- Retained Heat Cooker
- Improved cookstove (single Burner, with chimney)
- Rainwater Harvesting System
- Kitchen garden
- Solar System for village shop
- Solar water pump
EVD Solutions in Nepal - Centre for Rural Technology, Nepal

- Hydraulic Ram Pump (Hydram)
- Improved Water Mill (IWM)
- SF2 Solar Water pumps
- Matribhumi Improved Cook Stove (M-ICS)
- Improved Institutional Cook Stove
- Cabinet Solar Dryer
- Rooftop Rainwater Harvesting
- Vermi composting
- Homebiogas
- Greenhouse Tunnel with drip irrigation
- High-value Tree plantation
- Induction Cook Stove
- Renewable water lifting system
EVD Solutions in Sri Lanka – IDEA, Sri Lanka

- Anagi- Improved Biomass Stove
- Movable and sunken type institutional stove
- Roof rainwater harvesting
- Non portable Bio-mass dryer
- Improved Kitchens

- Movable Institutional Biomass stove with Chimney
- Mushroom cultivation
- Composting
- Home gardening and sustainable paddy farming
- Improvement in brickmaking
EVD Solutions in India – INSEDA, India

- Bamboo reinforced Biogas – Gremmenbandu
- Bamboo reinforced Rainwater Harvesting
- Solar Poly Green House – Bamboo frame
- Solar Tunnel Dryer – Bamboo frame
- Bamboo house/ shelter
- Bamboo Compost Basket
- Vermi-compost
- Organic Kitchen Garden
- Bamboo reinforced Rainwater Harvesting
- Solar Street light and lantern
- Day-night Solar cooker with battery
- HEERA Hybrid and JWALA Improved Cookstove
- Energy plantation, horticulture, bamboo, household forestry

Organic Kitchen Garden

Garden

Solar Poly Green House – Bamboo frame

Bamboo reinforced Rainwater Harvesting

Solar Tunnel Dryer – Bamboo frame

Bamboo house/ shelter

Bamboo Compost Basket

Vermi-compost

Organic Kitchen Garden

Bamboo reinforced Rainwater Harvesting

Solar Street light and lantern

Day-night Solar cooker with battery

HEERA Hybrid and JWALA Improved Cookstove

Energy plantation, horticulture, bamboo, household forestry
Huge potential to reduce GHG emissions using local solutions as 60% to 80% population is in rural areas in four countries

**Improved Cookstove** – 150 million families in India can save
- 100 Mt firewood and 150 M t CO₂ per year

**Biogas** - 75 m BGP (2cum) from 300 million bovine population
- Can save at least 200 Mt of firewood and 300 M t CO₂ Per year

**Rooftop rainwater harvesting**
- 150 m families in India can save 1.5 b cum water

**Solar Home System**
- the 6 m SHSs have reduced GHG emissions by 10 M t CO₂ per year.

**Induction cookstoves**
- 25% (1.5 m) households in Nepal can use electric cooking by 2030, saving GHG

**Anagi cookstove**
- There is potential of installation of at least 1.5 m anagi stoves in Sri Lanka

**Environment and Social Impact**
- Increased climate resilience, mitigation and adaptation
- Reduction of GHG emissions and pollution.
- Conservation of water and soil.
- Improved soil health.
- Carbon sequestration.
- Enhanced income of poor communities.
- Clean kitchen Improved health of women and children and reduced drudgery.

**Bamboo plantation helps in**:
- Reducing use of environmentally harmful brick that consumes topsoil baked using coal & wood
- Drawdown CO₂
- Environment restoration
- Soil rejuvenation
- Reforestation and erosion control
- Moisture conservation
- Adding source of income for farmers and women
- Improves the local and surrounding environment

**EVD Model** - an integrated development approach to help reducing emissions and to provide social benefits

- Bamboo plantation helps in:
  - Reducing use of environmentally harmful brick that consumes topsoil baked using coal & wood
  - Drawdown CO₂
  - Environment restoration
  - Soil rejuvenation
  - Reforestation and erosion control
  - Moisture conservation
  - Adding source of income for farmers and women
  - Improves the local and surrounding environment
EVD Solutions as climate change mitigation and adaptation

Biogas plant
- Helps in mitigation - firewood eliminated and adaptation as wood availability is becoming scarce.
- Slurry adds humous and improved soil quality thus adapting to climate change by reducing use of chemical fertiliser
- Adaptation - Families are not dependent on energy supply from outside and will not get impacted in case of extreme climate event.

Improved Cookstoves
- Reduction in use of firewood - mitigation (saves CO₂) and adaptation - as wood availability is becoming scarce.

Rooftop Rainwater Harvesting
- Helps in adaptation in the scenario of water scarcity to some extent due climate change event.
- Saving in energy in water pumping

Solar tunnel dryer
- Helps in climate change adaptation by providing additional income with better quality produce while utilising solar energy
- Reduces the wastage of crops by drying perishable items

Bamboo compost basket
- Manure helps in soil rejuvenation, Reduced use of chemical fertilizer

Other EVD solutions

<table>
<thead>
<tr>
<th>Other EVD solutions</th>
<th>Emission reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solar streetlight/ lanterns</td>
<td>• Reduced use of dry batteries</td>
</tr>
<tr>
<td>Vermi compost</td>
<td>• Reduced use of chemical fertiliser</td>
</tr>
<tr>
<td>Poly Green House - SHG</td>
<td>• Reduces chances of crop damage in extreme climate event</td>
</tr>
<tr>
<td></td>
<td>• Off season crops can be grown</td>
</tr>
<tr>
<td></td>
<td>• Less use of insecticide/ pesticides</td>
</tr>
<tr>
<td></td>
<td>• Increased yield means less energy consumption</td>
</tr>
<tr>
<td></td>
<td>• Less water consumption</td>
</tr>
<tr>
<td>Plantations (Energy + horti)</td>
<td>• Works as carbon sink</td>
</tr>
<tr>
<td></td>
<td>• Conserves soil and moisture</td>
</tr>
<tr>
<td>Greenhouse nursery</td>
<td>• Less chances of crop damage</td>
</tr>
<tr>
<td></td>
<td>• Off season crops can be grown</td>
</tr>
<tr>
<td></td>
<td>• Less use of insecticide/ pesticides</td>
</tr>
<tr>
<td></td>
<td>• Increased yield means less energy consumption</td>
</tr>
<tr>
<td></td>
<td>• Less water consumption</td>
</tr>
<tr>
<td>Bamboo Bus Shelter</td>
<td>• Less use of brick which is environmentally harmful as topsoil is baked using coal and wood in making bricks</td>
</tr>
</tbody>
</table>
Thank you

Read More: www.inforse.org/SB58.php

For more information please contact:
Dr. Raymond Myles
INSEDA, WZ, A-5, First Floor, Asalatpur, Janakpuri
New Delhi-110058, India
www.inseda.org
Mobile: +(91) 9212014905, 9899094905
E-Mail: ray.myles06@gmail.com, rmyles@inseda.org
sanjivnathan@inseda.org, sanjiv.nathan@gmail.com

RELEVANT WEBSITES:
www.inforse.org/asia/EVD.htm
www.ecovillagedevelopment.net
www.inforse.org/asia/Pub_EcoVillageDev_TOT_Manual_Sou
thAsia.htm

EVD Catalogue:
www.inforse.org/evd

Publications

Eco-Village Development as Climate Solution Proposals from South Asia

White Paper: Mitigation and Adaptation with Eco-Village Development (EVD) Solutions.
  • Describes calculation for CO2 reduction through various EVD solutions
  • The calculations can be used in NDCs

Training of Trainers Manual on Eco-Village Development in South Asia
Available in English and four South Asian languages - Hindi, Bangla, Nepali, Sinhala.