






CHOOSING AND IMPLIMENTING RENEWABLE ENERGY  
 BASED SUSTAINABLE ENERGY SOLUTIONS FOR  
 POVERTY REDUCTION IN SOUTH ASIA

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INFORSE Side Event: Sustainable Energy  
 for Development to Reduce Poverty  
 NGO experiences from India, Nepal, South Africa

9th December, 2009, 13.00-14.30, Grey Room  
 Klimaforum09, DGI-Byen, Tietgensgade, Copenhagen  
[http://www.inforse.org/europe/conf09\\_COP15.htm](http://www.inforse.org/europe/conf09_COP15.htm)



NGOs have been involved in the development of Poor  
 People for Decades



NGOs have learnt the following two  
 major lessons in promoting  
 technological oriented poverty  
 reduction programme

*FIRST LESSON:*

- Technology may be size neutral
- But it is not:
  - Gender Neutral and
  - Resource Neutral

*SECOND LESSON:*

Technology is like fire-this means that:

- \* It is a good servant and
- \* Bad Master

*In other words those who can control the technology  
 can become powerful but those who can't control  
 will get further marginalized*

Development Organizations were of the  
 opinion that:

- ❖ Give a fish to a poor and he/she will come  
 back to you again and again

**BUT**

- ❖ If you teach him/her to fish he/she will sustain  
 him/her self

*But poor is where it was before  
 such interventions- WHY*

- ❖ BECAUSE NOW WE HAVE LEARNT THAT  
 TEACHING ALONE HAS NOT EMPOWERED  
 THEM AND MAKE THEM SUSTAINABLE, AS  
 WE DIDN'T PROVIDE THEM THE RIGHT TO  
 FISH (OR IN OTHER WORDS PROVIDE THE  
 RIGHT CONDITIONS, MEANS AND  
 RESOURCES TO USE THE TECHNOLOGY  
 AFTER TRAINING, FOR HIS/HER BENEFIT)

## NEW DEVELOPMENTAL APPROACH SHOULD BE

- ❖ **STEP-I**
- ❖ Teach Poor how to fish
- ❖ **STEP-II**
- ❖ Also Give the poor the right to fish

## INFORSE Strategy for Promoting Sustainable Energy Technologies (SETs) for Poverty Reduction

- ❖ Based on lessons learnt from the past following steps were proposed for implementation of poverty reductions using RET solutions in South Asia:
- ❖ 1). In the first phase, undertake the capacity building of different stakeholders including the poor, who is the end user of the RET, and

## INFORSE Strategy for promoting RETs for poverty reduction

- ❖ 2). In the next phase;
- ❖ (a) undertake appropriate project/ programme which will improve his/her income and generate employment
- ❖ (b) To make available resources to the poor using the micro-financing for the funding RET activities (which other wise they couldn't afford), and they can repay the amount in easy installments with out pressure on them

## Problems of Centralised Energy Solutions

- Power grids are very unreliable in rural areas of many developing countries, days without any power are common,
- In areas with small power demands, construction costs and transmission losses are high, resulting in a very high real cost of power
- High costs of connection and use make power unreachable even in many electrified villages
- LPG & kerosene for cooking leads to dependency on imports and high costs due to high oil prices.

## Local, Sustainable Solutions

- ❖ In many areas there are enough local sources for energy (and is renewable) to provide all with basic energy needs for households and small businesses
- ❖ Renewable energy could provide clean and affordable energy solutions in most rural areas
- ❖ Efficient utilisation of energy is an important part of the solution.
- ❖ The challenges are to disseminate successful RETs, choose the right solutions in each area/village, have availability of micro-funding, build capacities for installations, maintenance etc.

## Promotion of local, sustainable energy solutions for poverty reduction in INFORSE South Asia

- ❖ As a first step collected regional experiences from Bangladesh, India, Nepal, Sri Lanka, using its members
- ❖ Prepared Manual to introduce sustainable energy solutions for poverty reduction & choose the right solutions
- ❖ Also prepared a Financial Manual on sustainable energy solutions based on Grameen Shakti & others' experiences
- ❖ Compiled best practices in sustainable energy technologies collected by members in these four countries
- ❖ These Manuals, compiled information and other relevant information have been published in CD in 5 languages
- ❖ INFORSE South Asia is using these two manuals is now undertaking national dissemination with partners (Grameen Shakti in Bangladesh; INSEDA, AIWC, SDA & WAED in India; CRT in Nepal; and IDEA in Sri Lanka)

**SET MANUAL HAS THE FOLLOWING FOUR CHAPTERS**

- ❖ Chapter-1: Introduction
- ❖ Chapter-2: How to choosing right RET Solution
- ❖ Chapter-3: Different Renewable Energy Technologies (RETS)
- ❖ Chapter-4: Local Organizations managing sustainable energy

**Some of the RE Technical solutions included under Chapter-III of the SET Manual**

- ❖ Improved cook stoves, as part of the integrated solutions with appropriate kitchen facilities to prevent indoor pollution and biomass fuel management
- ❖ Biogas for cooking, and lighting etc.
- ❖ Biomass (Biogas plants and Gasifier) based decentralised power generation (off-grid)
- ❖ Solar cookers
- ❖ Biomass Briquettes for cooking
- ❖ Solar PV electricity
- ❖ Micro hydro
- ❖ Solar dryers
- ❖ And many other solutions for space heating, transport,...



**Local Organizations managing sustainable energy solutions included in the Chapter-IV of the SET Manual**

- ❖ Self-help groups
- ❖ Micro-financing groups
- ❖ Village cooperatives/societies
- ❖ Private sector involvement
- ❖ Micro-utilities
- ❖ Micro-entrepreneurs
- ❖ Trade associations



**SOME OF THE RENEWABLE ENERGY TECHNOLOGIES (RETs) INCLUDED IN THE SET MANUAL**

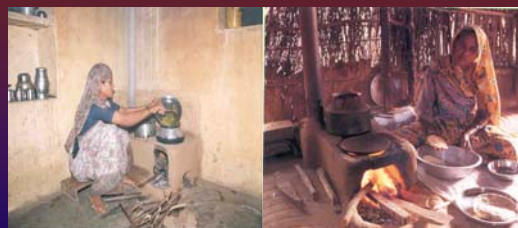


**Anagi Cook Stove in Sri Lanka**


**ANAGI Improved cook stove (ICS) promotion in Sri Lanka**



**Improved Cook Stoves in Indian villages**



### Cooking with briquettes made from biomass wastes in India and Nepal




### Different stages of construction of Grameen Bandhu biogas plant

Employment to poor rural women in their own villages in spare time and at their convenience for weaving bamboo structures for building bamboo reinforced Grameen Bandhu biogas model being promoted by INSEDA & WAFD in India

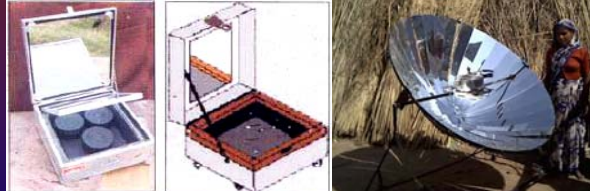


### Animate Energy

Treadle Pump (Krishak Bandhu) for irrigation- Marginal farmers using this technology for vegetable cultivation can recover the cost in 1-2 years, by selling the produce. Treadle Pump is popular in the eastern part of India, where the water table is less than 24 feet



### Cooking with box type and Parabolic Solar Cookers in South Asian Countries



### Solar Dryers for vegetable and fruit drying in India

Domestic Solar Dryer      PV operated community Solar Drying system



### Solar Lanterns being promoted in Indian Villages by NGOs

Solar PV Lanterns



### Solar PV Irrigation Pump Set in Rural India



Solar PV operated decentralized water purification unit for round the clock drinking supply in non-electrified/ uncertain power supply villages

- Being promoted by 2500 INSEDA and its partners in Indian villages for sustainable drinking water supply for Community.
- Liters water (removes Bacteria & Virus)/day
- 800-1,000 people get safe drinking water each day



### Promotion of Jatropha Curcas for bio-fuel and manure production for sustainable livelihood in an NGO villages



### Solar PV home power system for lighting and mobile charging in Bangladesh

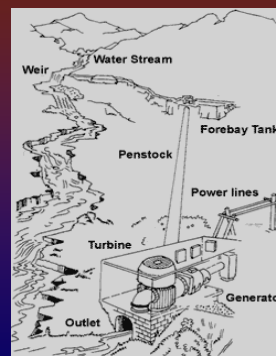


### Solar PV Home Lighting System

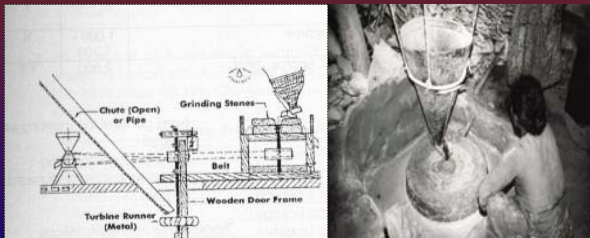
Operates two lights and one DC fan or black and white TV



### Micro hydro system in Sri Lanka



### Improved Water Mill for Multiple Applications (Operation for Grinding on the right) in Nepal



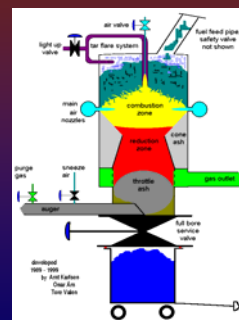
### Operation of dual fuel engine on biogas for generating electricity and mechanical operation in a village in Rajasthan, India



### Solar PV system for village street lighting and community use



### Biomass gasification for village level/ small-size decentralized power generation



### Wind Energy for small scale Irrigation and Power Generation

Wind Mill for Irrigation



Small size Wind Generator



### Contact INFORSE or INFORSE-South Asia:

For details and CDs of the project on capacity building project for NGOs in SETs for poverty reduction in South Asia

Available in English, Hindi, Nepalese, Bangladeshi, Singhalese.





INSEDA has recently got involved in getting carbon credit for the household biogas plants of members and partners

INSEDA with the assistance of GTZ International, Carbon Procurement Unit (CPU)-India, has already prepared the Project Design Document (PDD) and submitted to the Gold Standard Foundation (GSF) for registry

THANK YOU

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<http://www.inseda.org/>

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