

SUSTAINABLE ENERGY FOR POVERTY REDUCTION:

AN ACTION-ORIENT REVIEW OF
NGO SOLUTIONS FROM SOUTH
ASIA, LEADING TO NEW USER-
FRIENDLY MANUAL ON
SUSTAINABLE ENERGY FOR
DEVELOPMENT

Raymond Myles

Regional Coordinator
INFORSE South Asia

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Developmental Agencies with long experience in poverty reduction programme have learnt the following two major lessons in promoting technological oriented :

FIRST LESSON:

- **Technology may be size neutral**
- **But it is not:**
 - **Gender Neutral**
 - **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 burned or 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 EMPOWER THEM AND MAKE THEM SUSTAINABLE, AS THEY DIDN'T HAVE THE RIGHT TO FISH

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 RETs for poverty reduction

- ❖ Based on lessons learned from the past the following step is proposed to be followed in the 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 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), which they can repay in easy installment with out pressure on them

SOCIAL IMPERATIVES

- Today about 1 billion people rely on traditional cooking with biomass, mainly inside their houses, with no proper ventilation and chimney, causing indoor pollution and health problems
- The same people have no access to electricity, or electricity is not reliable and/or unaffordable
- The majority of people without basic energy supply are living in Africa and South Asia
- Provide all with basic energy needs and
- Allow developing countries to develop, as well as use cheap and affordable energy supply

PROBLEMS OF CENTRALISED 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 successes, choose the right solutions in each area/village/family, have availability of micro-funding, build capacities for installations, maintenance etc.

Technical solutions

- ❖ Improved cooking 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 cooking
- ❖ Briquetting
- ❖ Solar PV electricity
- ❖ Micro hydro
- ❖ Solar drying
- ❖ -and many other solutions for space heating, transport,...



Organisational solutions

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

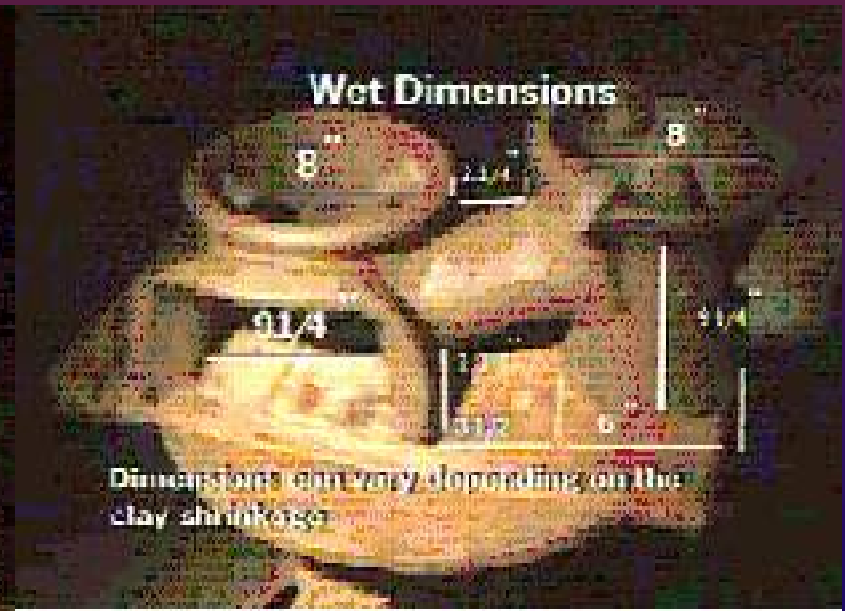


Promotion of local, sustainable solutions

- ❖ INFORSE South Asia collected Regional experiences (Bangladesh, India, Nepal, Sri Lanka)
- ❖ Manual to introduce sustainable energy solutions for poverty reduction & choose the right solutions
- ❖ Manual has been published in CD in 5 languages
- ❖ Financial manual on sustainable energy solutions based on Grameen Shakti and others' experiences
- ❖ INFORSE South Asia will undertake national dissemination in 2007 with partners (Grameen Shakti in Bangladesh; INSEDA, AIWC & SDA in India; CRT in Nepal; and IDEA in Sri Lanka)

Agani cook stove in Sri Lanka

AGANI Improved stove promotion in Sri Lanka



Improved cook stoves in Indian villages



Cooking with briquettes made from biomass wastes in 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

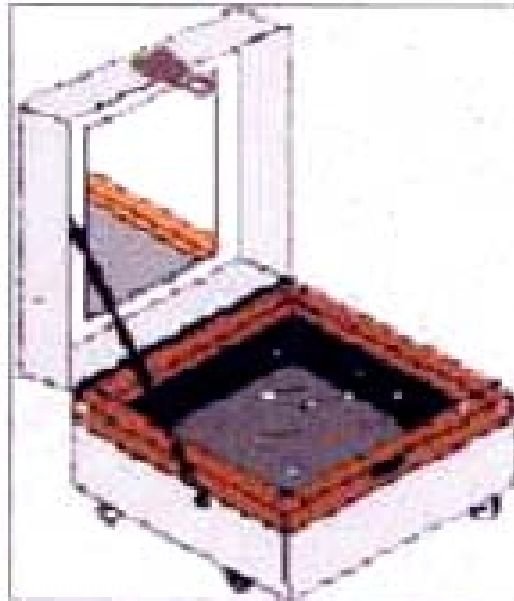


Animate Energy

Treadle Pump 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

Domestic Solar Dryer

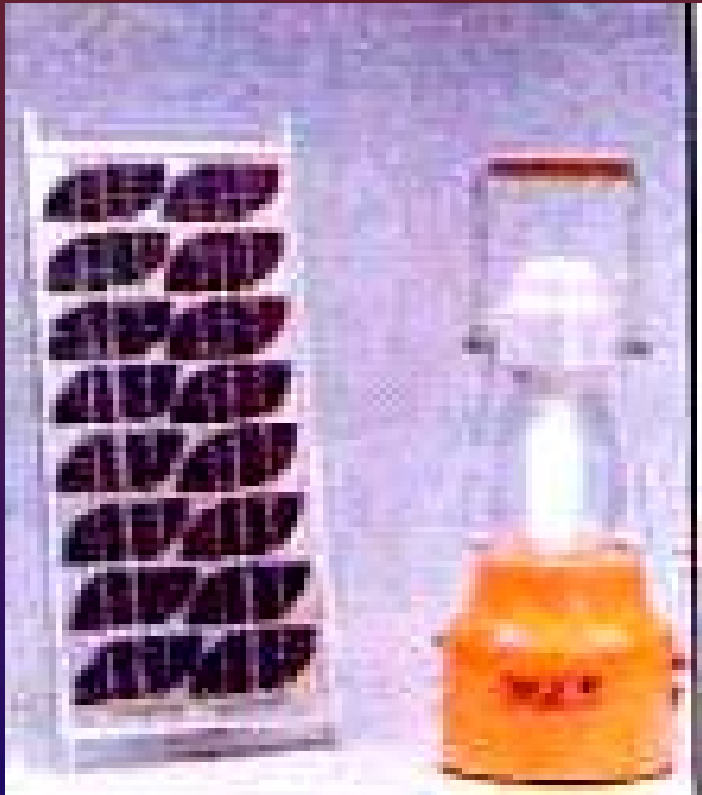


PV operated community
Solar Drying system



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 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 villages



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

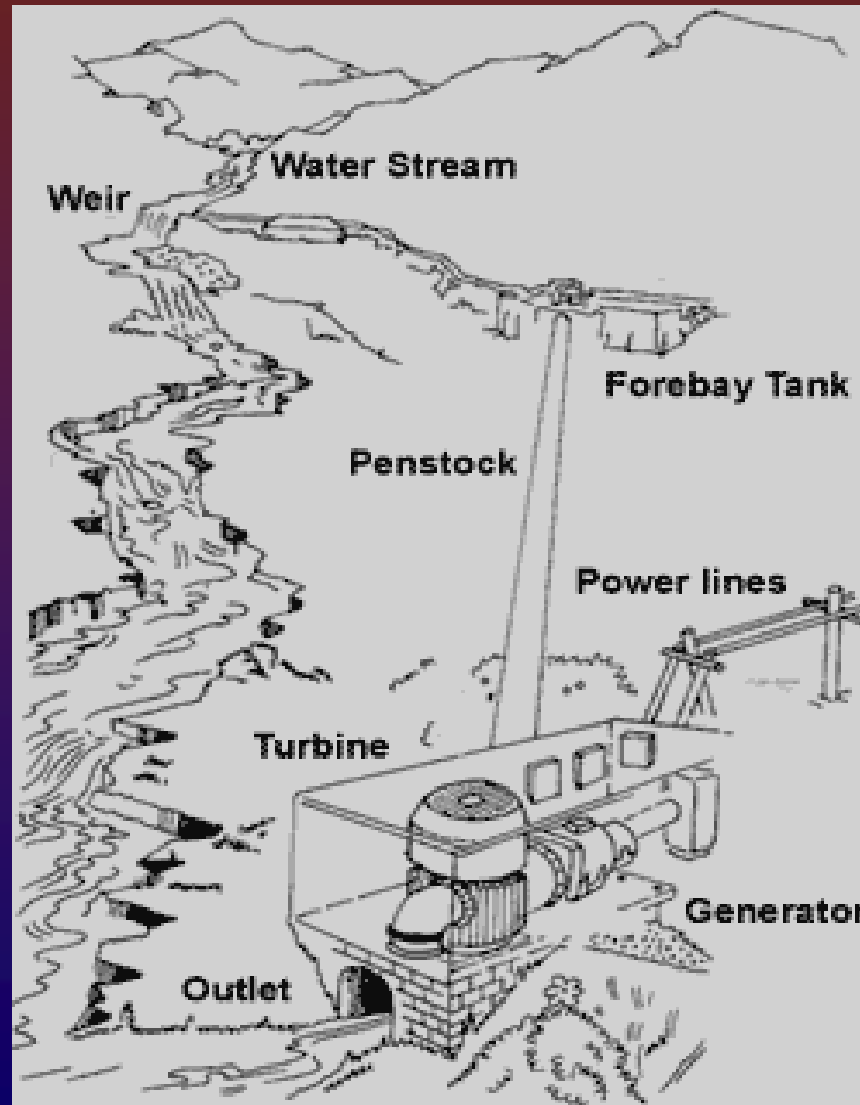


Solar PV Home Lighting System

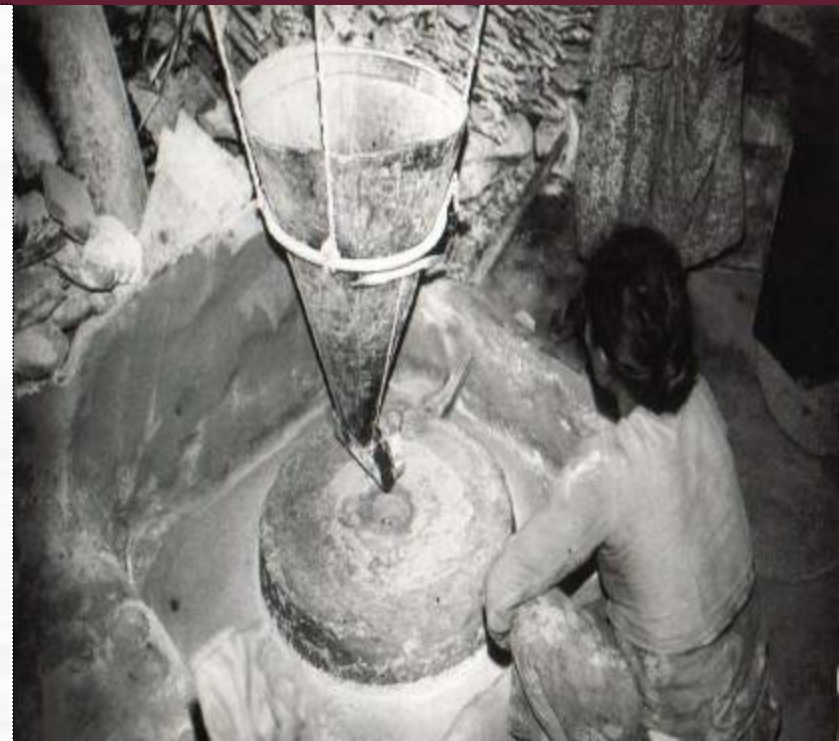
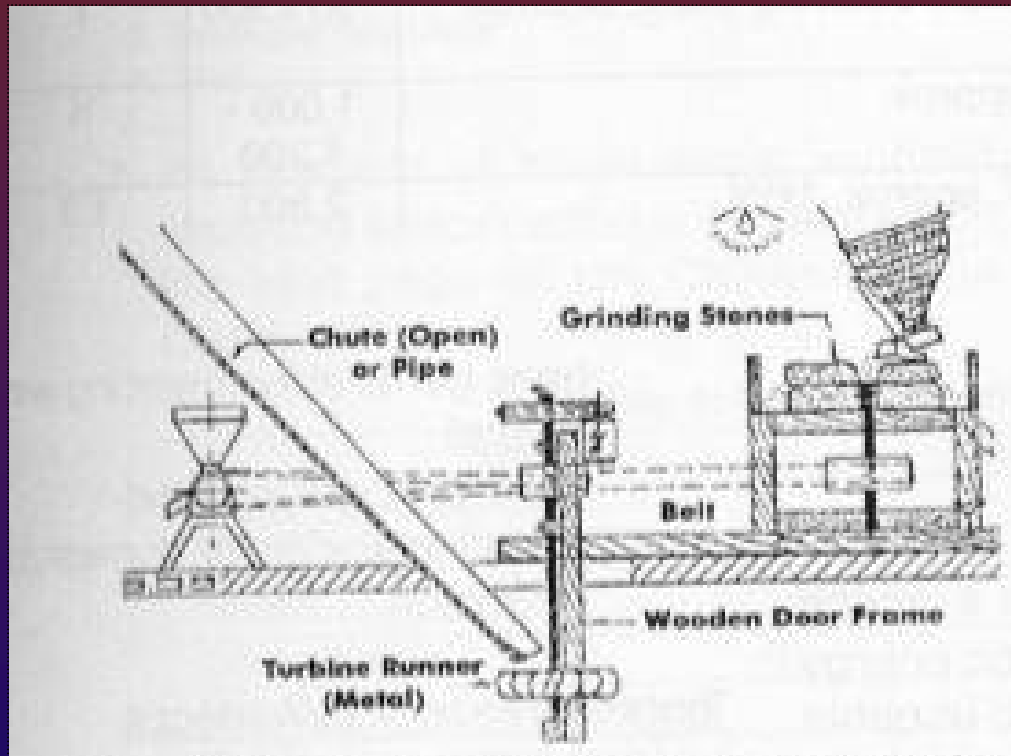
Operates two lights and one DC fan or black and white TV



Micro hydro system in Sri Lanka



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



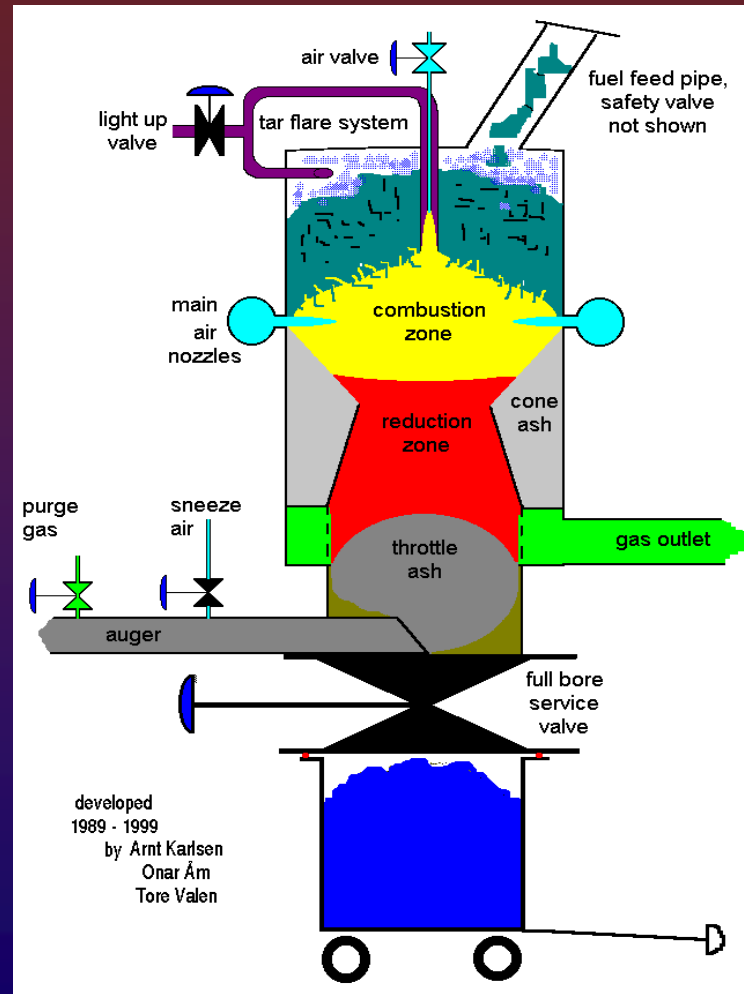
Operation of dual fuel engine on biogas for generating electricity and mechanical operation in a village in Rajasthan, India



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



THANK YOU