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SARI/Energy Small Grants

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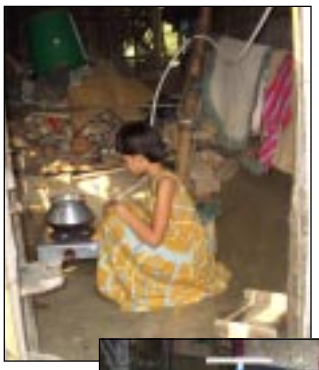
Increasing Access to Clean Energy – Large Impact From Small Grants

Wendy Aulakh, *Managing Director, Clean Energy Group, Winrock International*



We had a busy end of 2005 as we issued the fifth round of grants for Pakistan and Afghanistan in September; worked with grant recipients from earlier rounds to complete their projects; and held the Round 3 & 4 SARI/Energy Regional Grantees Meeting (RGM) in early December. The RGM was held in Dhaka, Bangladesh, coinciding with the SARI/Energy Semi-Annual Meeting (*RGM details follow later in this issue)*.

The focus of the SARI/Energy Small Grants Program in 2006 will be to complete all five grant rounds, and to assess the impact these grants have had on the SARI/Energy Program's goals to harmonize regional markets and increase access to diversified clean energy in South Asia. The Small Grants Program is currently supporting 38 projects involving 63 NGOs and academic institutions. Ranging from US$10,000-30,000 and running for 6-18 months, these projects have resulted in the creation of regional resource centers and networks, technical research, and programs promoting new technology, all of which are helping mostly rural, low-income communities gain access to more and better energy options. During the most recent RGM, participants had the opportunity to visit two grantee projects in the Dhaka area that represent good examples of this achievement *(see photos)*.

With funding from the Small Grants Program, Grameen Shakti (GS), famous for its delivery of solar energy to the people of Bangladesh, is now helping families use simple biodigestion technology to convert animal waste into cooking gas and fertilizer. Families have a cleaner, more efficient cooking option for themselves, and often have enough gas to sell to neighbors, providing them with additional income. GS trained with the successful Nepal Biogas Program and utilized their best practices to help them begin a program in Bangladesh. GS now has 104 systems in their network with another 100 under commissioning. Meeting participants visited a few of the new biogas systems.

International Development Enterprises (IDE) India and Bangladesh are working together under the Small Grants Program to test a new low-energy, low-cost water sprinkler for irrigation. This model will be more affordable for farmers than currently available, comparable options. IDE is working to get it on the market as soon as possible. Meeting participants were able to visit an IDE test site outside of Dhaka to see the technology in action.

This is a small snapshot of two out of 38 examples of great work from the men and women working in dedicated NGOs and institutions throughout South Asia, demonstrating that small grants can have a large impact on improving people's lives. More examples will be documented throughout the year. We look forward to a productive 2006, and wish all of you a healthy, happy and prosperous New Year!

Participating Nations

Afghanistan *Bangladesh* *Bhutan* *India* *Maldives* *Nepal* *Pakistan* *Sri Lanka*

Sharing Experiences & Lessons Learned

Thirty-eight projects have been awarded grants under Rounds I-V of USAID's SARI/Energy Small Grants Program since 2003 *(see www.sari-energy.org/SmallGrants)*. We continue to cover the grantees' progress in their endeavors to promote regional energy cooperation in South Asia.

Training Service Providers of Rural Electricity Systems in South Asia

The South Asian region, (Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka) is home to 1.3 billion people, close to a quarter of the world's population. The rural off-grid population in South Asia is currently half a billion. In these isolated areas, an estimated 75% do not have electricity. At current rates of grid extension for rural electrification and population growth, it would take at least 35 years to completely electrify rural South Asia.

In Sri Lanka, the Ceylon Electricity Board increased grid access to around 70% of the country's households. The Ministry of Power and Energy also plans to reach 80% of Sri Lankan households by the year 2010. However, even if this goal is reached, around 1-1.5 million households in Sri Lanka still will not have access to grid-connected electricity. To fill this gap, a number of community-based and household-level rural off-grid electricity systems using micro-hydro, dendro, biogas, wind and solar PV have been developed, and are being implemented.

Demonstrating a solar lantern during a training program for North Central Provincial officials in Sri Lanka in July 2005 to help them formulate energy plans for the province

- **Solar Home Systems:** In Bangladesh, Grameen Shakti is installing an average of 300 solar systems per month and has marketed and installed 5,206 solar PV systems by 2001. Solar PV is also a major technology for the Non-conventional Energy ministry's rural electrification program in India for electrifying 18,000 villages by 2012. Typically a solar PV system of 34 kWp costs Taka 17,000 (US$ 309) in Bangladesh. In Sri Lanka, household level units are in the range of 30-60 W; but community solar PV projects have often suffered from management issues. All the 13-odd firms in Sri Lanka import PV panels. The total number of units installed is 85,000 currently, with the capital cost of a 35-W unit as US$ 350 and the running cost as US$ 1 per month. Potentially, about 200,000 households can afford these costs in Sri Lanka.

Country	Electri-fication (%)	Population without Electricity in South Asia (million)
Bangladesh	20.4	104.4
India	43	579
Nepal	15.4	19.5
Pakistan	52.9	65
Sri Lanka	62	7.4

Source: World Energy Outlook, 2002, IEA

- **Village Micro Hydro:** Nepal, which pioneered off-grid micro hydro in the 1970s using simple technology, has established over 1,000 projects that are owned and operated by the private sector (4,700 kW). Another 5 MW of micro hydro projects electrify over 100,000 households, mostly funded by rural development projects and donors. In India the potential exists for 8,000 micro hydro schemes covering 25,000 villages. Sri Lankan schemes include community-based mini-grids. The turbines are manufactured locally. The water heads are in the range of 20-50 m. Here there are about 15 trained manufacturers and 30 trained developers for providing technical inputs. Currently there are 250 such schemes in Sri Lanka providing electricity to about 7,000 households (10-50 households per scheme with 100-250 W of power per household depending on their purchasing capacity). Accordingly, the average capital cost per household is around US$ 300 if 200 W of power is provided. The running costs are very low for village hydro schemes. The potential market for village micro hydro in Sri Lanka is estimated as 1,000 villages covering 30,000 households.
- **Wind Home Systems:** In Bangladesh, Grameen Shakti has installed 6 wind turbines in coastal areas, four of which

Cost Comparison of Off-grid Energy Technologies in Sri Lanka

Technology	Installation Cost per kW (US$)
Micro hydro	1,500
Dendro	3,000
Biogas	3,000
Wind	5,000
Solar PV	10,000

are hybrid systems with diesel backups. One system is of 10 kW and the rest are 1.5 kW. The power is being supplied to cyclone shelters of Grameen Bank and some customers.

In Sri Lanka, there are domestic-level wind units that are currently at the pilot stage. ITDG has established 12 wind turbines with capacities ranging between 150 and 250 W. The cost of a 150 W system is about US$ 800. In Sri Lanka there is only one trained turbine manufacturer. The potential is limited due to the lack of required wind velocity throughout the year.

■ **Village Dendro Power:** These schemes include community-owned mini-grids. Gasification technology (gasifiers imported from India) is used for power generation. India leads the way in biomass energy development and there are about 10 Indian companies manufacturing gasifiers. In Gosaba Island, West Bengal, India, there is a 5 x 100 kW-system providing power to five villages with a population of 10,000. In Sri Lanka the capacity of the dendro power plants range from 3 to 35 kW. Currently 2 x 3 kW and 1 x 35 kW pilot plants provide electricity to 160 households. The capital cost per household will be around US$ 450 for a provision of 150 W. If successful, this has the potential to provide electricity to off-grid villages in Sri Lanka. The running cost is comparatively high due to fuel wood purchase and the need for a full-time operator and helper.

■ **Village Biogas Power:** Biogas units are currently at the domestic level. The technical potential for biogas plants in India is estimated as 12 million and the cumulative achievement as of September 2005 is 3.7 million. Nepal is also widely using biogas technology for thermal applications. In Bangladesh around 10,000 biogas plants exist, which have been installed by the Bangladesh Council of Scientific & Industrial Research and a few other organizations, with another 20,000 units planned. There are two main types in Sri Lanka – the Chinese unit linked with cattle sheds, and the dry batch unit linked with paddy farming. Using biogas for electricity generation is currently under pilot testing with small generators of 450 W and 2.5 kW. The running cost of a biogas power project will be about US$ 2.5 per household per month. The potential for biogas for electricity generation is not estimated as yet.

A training program for village leaders conducted in April 2005 to demonstrate solar PV technology

The Need

Due to the lack of proper mechanisms in place for capacity building and financing, most marginalized communities are still struggling to get off-grid energy services for satisfying their minimum energy needs. These decentralized energy services are yet to be fully accepted and incorporated at the national and decentralized level energy planning.

Donor-driven and private sector-oriented community-based energy services and projects are being implemented in certain countries in the region. They have introduced implementing structures and approaches for private-public-civil society partnerships to serve these communities. The standards, accreditations and regulatory aspects of these projects are yet to be addressed by existing regulatory bodies. The areas that have to be addressed for the development of the sector include access to financing and

Subject Area	Target Group
Formulating off-grid energy plans	Provincial level officials of the Government, including the utility, and Divisional Secretariat Officials; Government officers and community Leaders in off-grid villages
Conducting a pre-feasibility study to identify the most appropriate technology	Off-grid energy technology developers
Conducting feasibility studies for each technology	Off-grid energy technology developers and sales representatives
Designing and installation of power systems	Manufacturers
Design and installation of mini-grids and house wiring	Linesman on establishing mini electricity grids and technicians wiring houses
Verification of off-grid projects	Verifying engineers
Operation and maintenance of off-grid projects	Operators and consumers
Administration of off-grid energy service programs	Provincial officials and leaders of community-based organizations
Financing mechanisms	Bank managers, micro financing managers and officers
Accreditation and certification	Officials of financing institutions

insurance, mitigation of liability and risk, workforce growth, reduction of cost and development time through stakeholder coordination, the provision of professional credibility and recognition, safety promotion, and quality workmanship. The absence of adequate regional training facilities and software training material for capacity building is a key issue in the sector.

SARI/Energy Interventions

In the above context, capacity building and training of trainers are very vital elements that had to be initiated with the view of establishing a comprehensive regional training center to ensure the sustainability of the sector.

This SARI/Energy Small Grant Round 4 project, implemented by Energy Forum, Sri Lanka under the SARI/Energy Rural Energy Training Network (RETN) focuses on strengthening off-grid rural energy services through developing a curriculum for capacity building and networking. There are a number of stakeholders involved in off-grid electricity systems. Hence the training requirements of technical and non-technical personnel had to be addressed in a proper way.

The project gathered information at the regional level and reviewed best practices for identifying good models for replication. A study was conducted to assess training needs of off-grid energy service providers in the region. Identifying best practices, preparing case studies and developing training curricula are the key activities of the project. The target groups are service providers, verification engineers, project developers, bankers, community leaders, maintenance technicians, etc. This curriculum is targeted for developing the skills and knowledge of stakeholders to perform their duties better.

A training program on concrete pole manufacturing for micro hydro societies in September 2005 in Sri Lanka

The subject areas covered under this study are the technologies relating to village hydropower, solar PV, village dendro power, wind home systems and village biogas power. Each course is targeted to a particular stakeholder to enhance their capabilities (*see table on previous page*).

The draft curriculum and other materials have been circulated for comments among some stakeholders and RETN partners. All the draft course materials will be pilot tested at a three-day workshop to be held in March 2006 in Colombo, with the participation of regional expertise and local stakeholders before finalizing the training materials. The process will lead towards developing a regional strategy for further promotion across the region for producing quality workforce to cater to off-grid community based electricity schemes and to ensure improved services for them. On the other hand, this project probably will create an environment and opportunity for setting up a regional training center for rural community based off-grid electricity services.

Courtesy: Asoka Abeygunawardana, Executive Director, Energy Forum, 239, High-level Road, Colombo 05, Sri Lanka;
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Previous Grants

Consequent to the SARI/Energy Small Grants Program Round I **South Asian Lightning Awareness Program or SALAP (see http://www.sari-energy.org/SmallGrants/Downloads/Report_SALAP.pdf**), we have established 7 institutions in the region to take care of lightning safety and protection awareness. The Lightning Awareness centers in Bangladesh and Bhutan and the South Asian Lightning Awareness center established in Sri Lanka have been working extensively to promote lightning safety and protection in the region. Out of the 7 institutions mentioned above, three have been established as a part of SALAP (Sri Lanka, Bangladesh and Bhutan). Another 3 (India-2, Nepal-1) have been established as a result of the collaborative links established at the SARI/Energy Annual meeting held in Colombo (all three were SARI/Energy grantees of other programs).

We have developed a proposal for UNDP on a 'South Asian Lightning Protection Awareness & Entrepreneurship Training (SALPAET) Program' to promote lightning protection awareness while developing entrepreneurs to cater to the needs of each region.

Also, Dr Munir Ahmed, a partner of SALAP and the CEO of the Lightning Awareness Center, Bangladesh was honored with the 'International Lightning Safety Award-2005' by the National Lightning Safety Institution, USA, for his efforts in promoting lightning safety in Bangladesh, a region highly affected by lightning. SARI/Energy has a special stake in this case as Dr Munir was introduced into the lightning safety field through the SARI/Energy Small Grant-funded SALAP Program.

Dr Chandima Gomes, University of Colombo, Sri Lanka; Email: gomes@phys.cmb.ac.lk

SAARC Energy Center in Pakistan

During the South Asian Association for Regional Cooperation (SAARC) Energy Ministers meeting in Islamabad on 1 October 2005, chaired by the Federal Minister for Petroleum & Natural Resources, Mr Amanullah Khan Jadoon, who was elected Chairman of the SAARC Energy Ministers, it was decided to establish a SAARC Energy Center in Pakistan, in a step towards creating an energy ring in South Asia. It was also agreed to promote cooperation in the energy sector, which would cover planning, development, trade, transportation, information exchange, capacity building, encouraging private sector participation and international cooperation.

This was revealed in a Joint Statement issued at the concluding session of Day I. According to the statement, the ministers agreed to focus on the promotion of cooperation in the energy sector.

A senior Petroleum and Natural Resources Ministry official told Daily Times, Pakistan, that the SAARC Energy Center would strengthen the region's capability in addressing energy issues by enhancing coordination in strategies among SAARC member states. He said that it would facilitate inter-regional energy trade through interconnecting arrangements of electricity and natural gas within SAARC, such as the proposed power grid stations and trans-national gas pipelines.

He said that the SAARC Energy Center will also study the viability of a SAARC power interconnection master plan, including the establishment of policy, institutional, technical, financial, contractual and regulatory frameworks for linking the electricity networks of member states.

He added that the SAARC Energy Center would also promote cooperation in energy efficiency and conservation as an effective mechanism for demand-side management. He said the Center would also promote the development of new and renewable resources in the region as an instrument of sustainable energy development in SAARC member states. "It will serve as an energy information network and exchange center at both the regional and global scales," he said.

The Energy Center will also promote private sector investment and participation in energy activities and management, the official said, adding that a Regional Energy Database, Policy Analysis and Planning Wing would also be established to oversee the creation of the energy ring.

Excerpts from the Joint Statement...

The SAARC Member States shall cooperate in the development and use of all forms of energy, whether commercial, non-commercial, renewable or non-renewable, in modalities that may be appropriately designed by them for this purpose so as to achieve the objective of creating an Energy Ring in South Asia;

The cooperation in the energy sector will cover, inter alia, planning, development, trade, transportation, information exchange, capacity building, encouraging private sector participation and international cooperation including, but not limited to, the following areas:

- Establishment of a SAARC Energy Centre in Pakistan;
- Facilitation of private investment in the energy sector;
- Accessing resources from International Financial Institutions for harnessing regional energy potential;
- Development of a regional energy database;
- Promotion of energy trade including establishment of regional energy grids;
- Exploitation of vast coal resources using economic, clean fossil fuel technologies;
- Exchange of geological information for expediting fossil fuels exploration and development;
- Development of hydro power resources;
- Development of renewable and alternate energy resources, particularly in the rural areas, for poverty alleviation;
- Sharing of best practices in the energy sector including, but not limited to rural electrification, (compressed natural gas (CNG), solar, wind, biofuels, and other technologies;
- Promoting energy efficiency and conservation;
- Human resource development in the energy sector and exchange of experts; and
- Cooperating with regional and international organizations and learning from the experience of energy cooperation programs in other parts of the world.

Source: http://www.mpnr.gov.pk/Press%20Release%2001-10-2005.php

It was also announced that India would host the next SAARC Energy Ministers Meeting in the last quarter of 2006.

Source:http://www.dailytimes.com.pk/default.asp?page=story_2-10-2005_pg7_6

SARI/Energy Small Grants Program Regional Grantees Meeting, Dhaka, Bangladesh

The third Regional Grantees Meeting (RGM) for Round 3 (six grants) and 4 grantees (three grants) was held on 7-8 December 2005 in Dhaka, focusing on research, outreach and training projects *(project titles and partners are described on the next page)*. Each grantee sent one representative from its project team to participate and make a presentation in this two-day event to update SARI/Energy implementing partners and other regional stakeholders on progress to date on their grant projects, and to share lessons learned, problems encountered, and approaches for overcoming these obstacles.

The workshop commenced with Ms Robyn McGuckin *(see photo below)*, Regional Coordinator & Program Manager, SARI/E Program, USAID, welcoming the participants. She mentioned that the SARI/Energy program is operational since 2000 in eight countries, and that the main focus this year would be on energy security. She added that a top down approach for regional energy markets and a bottom up approach for access to clean energy at the community level is what is required for making significant impacts.

The following is only a summary of discussions during the Q&A sessions:

The SARI/Energy Small Grants team with the Round 3 & 4 grantees in Dhaka

Grameen Shakti (GS)

What are the specific features of the biogas plants designed by GS?

GS did not replicate the designs of biogas plants from India, China, or Nepal, but developed its own improved design, which has the advantages of operational ease and cost reduction. There is no mixing device in GS' design and bricks are used for the dome construction. The GS design basically incorporates positive aspects of the India, Nepal and China designs.

Technology and financing is not a problem in such interventions, but what is important is the institutional set up. There are cases of failures in India's biogas program due to the lack of appropriate institutional mechanisms. How is this taken care of in your project?

The financial mechanism implemented by GS itself ensures sustainability of the biogas project beyond SARI/Energy. Since women use biogas, GS has appointed 10 engineers (all women) for training women. GS has also prepared a user manual and established 20 technical centers. They are hoping policy makers will now come forward to support this initiative. The Government of Bangladesh has planned to set up 30,000 biogas plants.

What is the capital cost of a biogas plant and how are outreach activities planned in this project?

Five different sizes of biogas plants were designed and constructed by Grameen Shakti under the SARI/Energy project for domestic cooking purposes with capacities of 2, 3, 4, 5 and 6 cubic meters. The digester capacity varies from 7 to 14m^3. The total cost of the biogas plant is in the range of 15,000 to 30,000 Taka* depending on the capacity. Four households can be connected to one biogas plant. For propagating this technology in rural areas, focused group meetings were held for potential customers and leaflets distributed.

What are the charges to the households? Is the biogas consumption at the household level monitored?

Meters for monitoring gas consumption are not installed at household levels as they are costly. However, users are charged on the basis of hours of biogas supply. The charges are 2,000 Taka as advance/security and 500 Taka as monthly charges.

Other information

There are 104 biogas plants constructed by GS with another 100 plants under commissioning in Bangladesh. There are more than 100,000 poultry farms in Bangladesh so about 50,000 biogas plants can be constructed using the poultry waste. The cost of biogas plants developed by GS is affordable. To ensure sustainability of the program, no subsidy is provided but GS arranges for soft loans for entrepreneurs.

** US$ 1 = 68 Taka approximately*

Round III

Enhancing Regional Energy Security Through Training on Renewable Energy Technologies Among Rural Women

The Center for Rural Technology (CRT), Nepal & All India Women's Conference (AIWC), India prepared a training module to enhance the technical and management skills of solar drying enterprises run by women's self-help groups (SHGs) in India and Nepal.

Establishing National and Regional Micro-Hydro Standards

Energy Forum, Sri Lanka facilitated and set up national technical committees in Sri Lanka, India and Nepal, and a regional technical committee to develop micro-hydro standards and establish quality programs. This activity is a follow on to their Round II project (*see http://www.sari-energy.org/SmallGrants/Downloads/EnergyForum_MicroHydroStandards.pdf*).

Development of a Sustainable Biogas Program

Under this project, Grameen Shakti (GS), Bangladesh & Biogas Support Program (BSP), Nepal, worked together to transfer lessons of successful Nepali biogas programs to Bangladesh.

Renewable Energy Traveling Education Centre (RE-TEC™): Technical Assistance for Sri Lankan Replication

As a follow on to the Himalayan Light Foundation's (HLF) Round I SARI/Energy SGP project *(see http://www.sari-energy.org/SmallGrants/Downloads/HLF_NGOConsortiumRETPoverty.pdf for the complete Round I report)*, the RE-TEC unit and operation training was introduced into Sri Lanka, in partnership with Sewalanka Foundation, to assist them in disseminating RET information to provincial councils and vulnerable populations in conflict areas of Sri Lanka.

Study of the Impact of Low Energy Water Application (LEWA) Technology in Energy Savings

International Development Enterprises India (IDEI) and Bangladesh (IDEB) tested and studied opportunities for advocating and promoting the use of the Low Energy Water Application (LEWA), an energy efficient sprinkler device which operates at low pressure heads. The project is developing subcomponents to make the system more cost-effective, and is testing/validating its performance, water savings and energy savings in the lab and field.

A site visit was organized for all the participants on the first day to Round 3 project sites of Grameen Shakti and IDE. These included a solar photovoltaic system installed in five small shops for lighting purposes, and two biogas plants (one using cow dung and another using poultry droppings). A visit was also made to IDE's SARI/E demonstration project to look at their low energy water efficient irrigation system.

Technical Research Study to Generate Test Data on the Performance of Identified Products on Energy Efficiency to Promote a Labeling Program

As a follow on to their Round I project (*http://www.sari-energy.org/SmallGrants/Downloads/VOICE_EnergyEfficienyStandards.pdf*), the Voluntary Organization in Interest of Consumer Education (VOICE), India & Sri Lanka Energy Managers' Association (SLEMA), tested the energy efficiency of three products (CFLs, ballasts and ceiling fans) based on national standards. They will now propose minimum Energy Performance Standards for these products to harmonize an energy efficiency and labeling program in India and Sri Lanka.

Round IV

For the Rural Energy Training Network or RETN members only *(see http://www.sari-energy.org/retn)*

Curriculum Development for Training Service providers of Community-based Off-grid Rural Electricity Systems in the South Asia Region

Under this project, Energy Forum (an RETN member), Sri Lanka, develops a curriculum for training practitioners and other key players of community-based off-grid rural electricity systems in the South Asia region *(refer detailed article on pg 2 of this issue)*.

Developing Case Studies and Training Curriculum on Community Based Rural Electricity Services in South Asia

Another RETN member, the Institute of Rural Management, Anand (IRMA), India, is developing an institutional system for sharing information and best practices on the governance and management of community-based models of grid-connected rural electricity distribution in South Asia.

Capacity Building of Community-based Electricity Supply Co-operatives in Nepal

The Society of Electrical Engineers, Nepal (SEEN), an RETN member, is training technical as well as non-technical staff of various Electrical Users Groups of Nepal on the proper use and handling of electrical fixtures, appliances and equipment. Training modules and kits for replication are being developed, produced and marketed, and trainers for replication of the program are being identified.

IDE

What are the maintenance costs, and are there any replaceable parts of the LEWA? Was the system field tested in agricultural farms?

The only maintenance required in LEWA is cleaning of nozzles regularly to avoid clogging. It doesn't require any replacement of parts. The onsite LEWA demonstration was carried out in farmers' agricultural lands in two places each in India and Bangladesh.

How was the LEWA developed?

The LEWA technology was developed in association with the Indian Council for Agriculture Research (ICAR), India. IDE operates through 1,400 dealer networks for commercializing the technologies developed by them. As LEWA operates on low pressure, it does not require high cost material. The cost of a low-pressure LDPE pipe is IRs 16 per meter whereas the high-pressure material costs around IRs 54 per meter. The technology offers about 67% energy savings as compared to impact sprinklers. Conventional sprinkler systems are operated on 5 HP diesel/electric pumps, whereas LEWA can be operated using a one-HP pump. There is further scope to reduce the cost of the LEWA by approximately 20%.

CRT Nepal

What is the capital cost of a solar dryer developed by CRT? What is the time required for drying?

The capital cost of a 5-kg solar dryer is NRs 5,200. With 50% capital subsidy from the Government of Nepal, the net cost becomes Rs 2,600. The time for drying depends on the material being dried. However, during field tests, it was proven that the drying is three times faster than the conventional solar dryers available in the market today. The Indian solar air dryer, which can also operate on electricity, costs about Rs 75,000.

The VOICE (Round 3 grantee) technical report being formally launched by Richard Smith, COP, SARI/ Energy TA & Training, Nexant, Inc at the recent Small Grants RGM in Dhaka

What is the promotional strategy for marketing the dryers? How are delivery mechanisms created for dried products?

It is not economical to transport dryers to villages. Hence CRT has adopted a strategy to build the capacity of local partners for manufacturing solar dryers. A commercial outfit is created within CRT, which will market the solar dryers. The quality of service and dried products is going to create a demand for the dryers. The dried food product can be marketed through various established brands that already exist in the market.

More Information

For complete reports of earlier grants, please refer to www.sari-energy.org/SmallGrants/grant projects.htm Various progress articles of earlier grantees are available in our earlier newsletter issues as well (www.sari-energy.org/SmallGrants/newsletter.htm)

HLF

What is the hardware cost of RETEC and what are costs of training? Does the RETEC unit attract any subsidy from the government?

About 20% of the SARI/Energy Small Grants fund was spent on hardware and the balance is used for organizing various training and awareness programs. RETEC is not a product but a mobile unit for education, training, etc.; so no subsidy is available.

Was other funding leveraged?

Funding to the tune of $150,000 is approved by the World Bank and UNDP for replication of this program. This success is largely due to the SARI/Energy Round 1 project.

Energy Forum

What is the status of micro hydro standards in South Asia currently?

India and other South Asian countries are yet to develop standards for micro hydro projects. Drafting of micro hydro standards for Sri Lanka was completed and shared with India and Nepal. Developing a consensus for national micro hydro standards in Nepal, Sri Lanka and India is under preparation.

For a copy of the complete Proceedings of the third Regional Grantees Meeting, please email <somon @ winrockindia.org>

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