



Energy: Empowering Women Uplifting Lives (Advocacy Project)

CRT/N as the lead organization along with National Association of Community Electricity Users- Nepal (NACEUN) and Nepal Forum of Environmental Journalists (NEFEJ) is implementing this project with policy support from Alternative Energy Promotion Centre (AEPCC) This project is financially supported by ENERGIA, the International Network on Gender and Sustainable Energy hosted by Hivos, The Netherlands.

School Awareness, School Competition and Curriculum Development

Advocacy project conducted school awareness programmes at various schools of Sindhuli, Udayapur, Dhading, Lalitpur and Kavre districts. This campaign was done with the aim of creating awareness on energy conservation and renewable energy. The main objective was to create energy awareness among students, teachers, and parents with the primary focus being the school students. Students are the best catalyst to bring about a change in the society. Building a new energy conscious generation by imparting education to school children can prove to be effective for a developing country like Nepal in the long run.

After school level awareness programmes, competition among students was organized. During competition essay writing, speech, art competition on green energy were carried. Prizes were distributed as an encouragement to the winner students. School competitions were held among four schools Katari, Udayapur and four schools of South Lalitpur.

One of the achievements of this project is that, after the awareness programmes, in the self initiation of Gotikhel Resource Centre, South Lalitpur developed curriculum for Renewable Energy for classes 1-5 and are now

Held MFI Interaction Programme

The workshop was held on Aug 18, 2017 by CRT/N under Advocacy Project. Various representatives from micro-financial institutions (MFIs) including the representatives from AEPCC, Central Rural Energy Fund (CREF), Agricultural Development Bank, Winrock International, UNCDF- Clean Start Project Coordinator, partner organizations (NACEUN and NEFEJ) and the women entrepreneurs were invited in the programme. Most of the invitees were from higher level decision making positions. In Nepal and many other developing countries, women are more credit constrained than men. They are more restricted in their access to finance and control over land and capital. Consequently they are considered less creditworthy by banks. Thus women entrepreneurs face difficulties to

in function. The curriculum includes introduction, importance, uses, types and relevancy of RE. This curriculum is now being taught in 15 schools under Gotikhel Resource Centre.

Mass Awareness and Street Dramas

Advocacy project has been promoting the renewable energy among masses by creating the much-needed awareness. This has stimulated mass awareness about the need, benefits, the relevance of renewable energy and gender nexus in the present scenario. Advocacy project has produced many radio PSAs, visual documentaries and posters on the RE, which are displayed in the mass. Mass awareness programmes were conducted at various parts of Sindhuli, Udayapur, Dhading, Lalitpur, Kavre and Khotang districts.

Street dramas also play greater role to create awareness among masses, thus advocacy project has also been using this method for raising awareness on RE and gender. Visual of dramas are captured and displayed in other places as well.

Sensitization to Local Elected Body

Local government has an increasing role in the governance of provincial power. Local leader and representative can play greater role in the sector of renewable sector if awareness of RE is created among them. Thus, advocacy project has planned sensitization programme to sensitize local representatives. It is within the authority of local government to influence the

promote their enterprises and business due to lack of financial resources. Lower education levels, as well as limited time and mobility also prevent them from engaging with the complex and lengthy procedures usually requested by the formal banking sector. Social norms are another factor for women to get access to loan. As Advocacy project and WEE Nepal project have been promoting women entrepreneurs based on energy and ICS. They require linkages with loan for the growth of business. WEE Nepal and advocacy project are promoting the technology based on energy. The technologies will support to preserve the natural forests and the environment. The project is striving to develop a market system for ICS by encouraging woman stove masters to become local stove entrepreneurs and promoting private distributors at the districts and bigger suppliers in the cities in the ICS market chain. Since the ICS reduces a woman's workload, they can be involved in other income generating employment. Hence if the women are given the opportunity, there will not only be economic transformation

energy choices of their community people. Local government can play a greater role for community renewable energy. Thus first of all it is important to sensitize the local leaders on the importance of renewable energy so that they can act and influence accordingly.

Keeping in this view Advocacy project conducted a sensitization programme in which, 60 participants had participated. Participants were, elected local Gov. Bodies of Halesi Tuwachung Municipality, Kharpa Rural Municipality, representatives of Women networks, Health workers, energy based and ICS entrepreneurs from Khotang & Halesi, representatives of MFIs etc. Among them 80% were female from different organization.

The discussion was focused more increasing the awareness on renewable energy and on developing coherence with local government, identifying gaps and possibilities to collaborate for efficient and effective implementation of gender and energy projects with increasing productive uses.

Sensitization and Fellowship to Journalists

The objective of this sensitization programme was to develop capacity of journalist on the gender and energy nexus and exposing them to field realities. This will raise awareness of RE among the journalist and will bring issues around. It will present a huge opportunity for media to open up new avenues in RE activities and will create debate and bring the RE issue. In the media this issues is given lesser priority. The workshop emphasized the importance of including gender in reporting on green energy issues.

The workshop was organized from NOV 20-21, 2017 in coordination with project partner Nepal Forum of Environmental Journalists (NEFEJ). Initially 15 journalists from various media participated in the sensitization programme, Later 10 (4 journalists from print media, 4 from radio and 2 from TV) out of 15 were selected for the fellowship. Each of the selected fellows published one articles in their respected media. Out of 10 best 3 will be awarded for the best performance.

but also social transformation. Thus the workshop was organized in order to sensitize MFIs regarding women entrepreneurship and encourage them to provide easy access to finance. For growth of women-owned businesses. During the workshop it was understood that there is high demand of ICSs, there are supplier as well and they are highly interested in investing on ICSs/ RE technology. Financial institutions could do more to address their own constraints in reaching out to the women entrepreneurs as potential clients. During the programme, it was requested to MFIs to develop gender responsive plans, policies and budget for women empowerment and social inclusion in their respective organizations. Ms Niru Shrestha, one of the ICS entrepreneur shared that, there are many who cannot afford to buy ICS. Thus if MFIs provide microloan to ICS buyer, it will be great to support to buyers and to the entrepreneurs.

Representatives from MFIs highlighted that, finance is not the issue, the major issue is the lack of coordination and knowledge on women entrepreneurship/ RE/ICS. Hence first of all creating awareness among MFIs regarding gender mainstreaming and RE is very important.

Conducted Knowledge Sharing Workshop- WEE Nepal and Advocacy Project



Dr Indira Shakya, Project Manager, sharing experiences of advocacy project

The sharing workshop of WEE-Nepal and Advocacy Project took place on August 29, 2017 at the Himalayan Hotel, Kupondol in Lalitpur district. The WEE-Nepal Project was launched in September, 2014 which aims to contribute to women's economic empowerment by scaling up proven business models that strengthen the capacity of women to deliver energy products. While the Energy: Empowering Women Uplifting Lives (Advocacy Project) was launched in January, 2015 as a supporting programme to WEE Nepal Project, in order to campaign/advocate at the national and sub-national level on WEE and promoting energy access for both domestic and productive energy use. Both the projects have been completed successfully in August, 2017 thus this workshop was held as a project closing workshop in order to: disseminate the lessons learnt, recognize the contribution of various individuals and organizations and reward outstanding performances

of woman entrepreneurs as well as stove masters.

Representatives from the Project Lead Organisations, Project Partners-Central Level, Project Partners-Field Level, National Planning Commission(NPC), Alternative Energy Promotion Centre (AEPC), Micro Finance Institutions (MFIs), Community Rural Electrification Entities (CREEs), Woman Entrepreneurs (WEs), Team members of WEE- Nepal and Advocacy project, members of management and board Members of CRT/N participated in the workshop.

The workshop provided an excellent opportunity to bring all the working partner organizations and supporting organizations together; to share the views about all the activities conducted, to know about the achievements and challenges faced during the project phase, to exchange the best practices adopted; this might also help to develop strategies for the next coming phases of these projects and to encourage women entrepreneurs.

Ms Soma Dutta, Programme Coordinator of WEE programme from ENERGIA (The funding agency) congratulated and thanked all the supporting hands for their efforts. She shared out that the project WEE Nepal has been implementing in the seven countries- Senegal, Kenya, Nigeria, Tanzania, Uganda, Indonesia and Nepal. These programme of ENERGIA has remained successful in achieving its goal, it has reached up to 2.4 million women together with empowering them and developing entrepreneurship. According to Ms Dutta, the reason of Nepal Programme being unique is due to its close coordination with the local institutions. Government of Nepal (GoN) has planned to provide Clean Cooking Solutions to All the households by 2022, thus the programme is much more relevant and align with the Government of Nepal's programme.

GIE Programme Nepal, Conducted Outcome Harvesting Training

The Outcome Harvesting Training was carried out for four days in September 20-23, 2017 in Ageno Café, Bhanimandal Lalitpur by Centre for Rural technology, Nepal (CRT/N) under Green and Inclusive Energy (GIE) Nepal programme. Team of GIE Nepal Programme from all the consortium partners- National Association for Community Rural Electricity Users Nepal (NACEUN), Nepal Forum of Environmental Journalists (NEFEJ),

Dr Indira Shakya, Project Manager of GIE programme. Nepal facilitated the workshop. Ms Winny Ho from ENERGIA remained the trainer while Ms Sheila Operacha, from ENERGIA supported Ms Winny during whole training period and all the participants to make the outcome harvesting clearer. The objectives of the training were to:

- Have an in-depth understanding of the Outcome Harvesting Tool
- Understand the different methodologies as is practiced in projects and organizations
- Develop Outcome Harvesting Statements by the partner organizations and its analysis

The following contents were covered during the training:

- Update of the context analysis
- Adjustment/revision of the Theory of Change
- Related to that review of strategies and interventions
- Learning Agenda and Questions



Ms Sheila Operacha from Energia, facilitating during training session

- Capacity Assessment and Development results

Workshop helped to understand on outcome, outcome harvesting, ToC and the cycle of project management. At the end of workshop the participants were able to develop the outcome statement of their own organization; each of the consortiums developed one to three outcome statements of their organization. All the final outcome statements were shared with all the participants on the final day of workshop.



Ms Winny Ho, the Trainer from Energia facilitating training session

Renewable Energy Confederation of Nepal (RECoN), Indoor air Pollution and Health Forum (IAPHF), Practical Action, all total 14 participants participated in the workshop in all the training days.

Knowledge Sharing Workshop

“The Rural Community Electrification with Water Mill and Micro Enterprise Development in Nepal (IWME Programme)” has been completed in December 2017 and thus had organized a Knowledge Sharing Workshop on its completion at Hotel Himalaya, Kopundole Lalitpur on December 27, 2017. The main objective of the workshop was to share the activities and outcome, to disseminate the lessons learnt and to recognize the contribution of various individuals and organizations for their outstanding performance during the project period. The key participants of the workshop were the representatives from AEPC, EnDev/GIZ, SNV/N, CRT/N, RETSC, Survey Companies, IWME installer companies, Users’ Committees, Local Partner Organizations (LPOs) working in programme districts and other partner organizations. During the workshop, a book, which was a compilation of case studies from IWME, prepared by SNV, was launched by Chief Guest Mr. Ram Prasad Dhital (Executive Director, AEPC) and Special Guest Dr. Peter Foerster (Chief Technical Advisor, EnDev/GIZ).

The IWME Programme, was implemented under Rural Energy Technology Service Centre (RETSC) with financial support from Endevo and SNV Nepal, technical support from Centre for Rural Technology, Nepal (CRT/N), and policy support by Alternative Energy Promotion Board (AEPC).

During the project period, the IWME Programme remained successful to install 23 IWME / pico hydro sites, with aggregated generated power 83 kW. This provided electricity facility to 1226 rural households of 6 project districts namely Kavre, Sindhuli, Khotang, Makawanpur, Udayapur and Nawalparasi. Beside the electrification services, it developed 53 micro-enterprises based on electricity and mechanical energy, where 14 enterprises were led by women. In order to match a gap of equity fund required for installation of IWME / pico hydro projects, the programme was able to manage credit support from local cooperative financing institutions for four projects.

Insightful Visit to EVD Site by Government Officials

On July 7, 2017, CRT/N coordinated a field visit to EVD site (Dhunkharka, Kavre district) for the government officials and other stakeholders. During the visit, they observed different kinds of environment friendly technologies introduced by EVD project in the community like Hydraulic Ram pump, Improved Water Mill, plastic tunnel house, organic farming, organic pesticide making process etc. After the insightful visit, interaction programme was held at Dhulikhel.

Dr. Prabhu Budhathoki, Honorable member from National Planning Commission (NPC), Nepal was invited as a Chief Guest in the programme. Mr. Ram Prasad Dhital, Executive Director of Alternative Energy Promotion Centre (AEPC), Mr. Prem Bahadur Timilsina, Chief and Ms. Sarita Lamichane, Deputy Chief of Bethanchok Rural Municipality, and representatives from other government and non-government organizations also joined the interaction programme. Dr. Budhathoki and Mr. Dhital appreciated the outcome of the programme and thanked CRT/N for creating positive impact on the lives of community people. Both of them assured Mr. Timilsina to provide necessary and urged him to replicate such endeavor in other parts of their rural municipality as well. Mr Ganesh Ram Shrestha, Executive Director of CRT/N, welcomed the honorable guests and participants in the interactions programme.

Participation in COP 23



Ms Shovana Maharjan, Participating in COP23

Training on Bee Keeping at EVD Sites

Centre for Rural Technology, Nepal (CRT/N) conducted five days training on Bee Keeping under EVD project from



January 2-6, 2018 in

Participants during Practical Session

collaboration with Bethanchok Rural Municipality of Kavre District. Beneficiaries from EVD village (Chyamrangbesi, Dhunkharka and Chalal Ganesthan of Kavre District) as well as people from adjoining wards participated in the training. In total about 44 community people participated in the training. The objective of this training was to train people on modern bee keeping practices, including management of disease and other harmful pesticides for bee, increase in honey production process and marketing of honey etc.



Observation Visit of Government Officials at Field in Bethanchok

Ms Shovana Maharjan, Project Coordinator of EVD Project of CRT/N, participated in the United Nations Climate Change Conference (UNFCCC) COP 23 held at Bonn, Germany from November 6-17 2017. Ms Maharjan also delivered a presentation on “Linking EVD with National Climate and Sustainable Development Commitment of Nepal” on November 9, 2017.

The forum provided the opportunity to interact with national/ international negotiators to promote EVD and local climate solutions, as a mean to combat climate change and poverty. This also provided the opportunity to advocate for inclusion of policies and practices promoting local solutions in Paris Rulebook and to increase support for EVD among negotiators as well as among other stakeholders and like-minded organizations.

Participation in Fifth Asia Pacific Forum on Sustainable Development

Dr. Purushottam Shrestha, Director, CRT/N participated in the *Fifth Asia Pacific Forum on Sustainable Development: Transformation towards Sustainable and Resilient Societies*, which was held on 28 to 30 March, 2018 in Bangkok, Thailand. The forum was attended by more than 750 participants of about 52 countries including representatives from Governments, intergovernmental organizations, United Nations bodies, international organizations, civil society organizations and other entities. Dr Shrestha's participation was supported by ENERGIA/ hivos, the Netherland.

The purpose behind the conduction of this forum was of three fold: first was to engage member states, United Nations bodies, other international organizations, major groups and other stakeholders in highlighting regional and sub-regional perspectives on the theme of the high level political forum in 2018 "Transformation towards Sustainable and Resilient Societies", second was to review in depth the cluster of Sustainable Development Goals to be discussed in high level political forum as well as the interlinkages within the cluster and with other goals and the last but not the least was to support the presentation of voluntary national reviews and all assess the progress made with regards to the regional road map for implementing the 2030 Agenda for Sustainable Development in Asia and The Pacific.

Some major discussions held were:

- Strengthen implementation of 2030 Agenda in the region
- Ensure "No one was left behind", discussed on social factors such as gender inequality, lack of social protection, rural urban inequality and lack of financial inclusion and diversification of economic activities.
- Capacity building and regional cooperation as opportunities to develop mechanism for mutual support, with a view to defining common approaches, strengthening, climate change response and building resilient communities, including in coastal areas and low lying islands.
- Development of action at local level. Need to assess the sectorial impact of climate change across the economy.
- Need for attention to grassroots and marginalized constituency and for focus on human rights and the priorities of poor communities, including populations in urban slums and unlivable areas.

Successful Completion of Project: Product Development and Labeling of Clean Cookstoves and Standardized Biomass Fuels for Nepal

This project was conducted by CRT/N together with its partners, Centre for Energy and Environment, Nepal (CEEN) and Energy Environment Research and Development Centre (EERDC). It was carried out in close coordination with AEPC and WB. The project period was August 12, 2015–February 28, 2017 (18 months) but later extended till June 30, 2017. World Bank is currently providing technical assistance to the Government of Nepal through the programme titled *Developing Improved Solutions for Cooking* (DISC), with funding from the Energy Sector Management Assistance Program (ESMAP). This project/ assignment on Product Development and Labeling of Clean cookstoves and Standardized biomass fuels for the Nepali market conducted by CRT/N, is a part of this support to GoN through AEPC.

The goal of this study was to establish cookstove labeling criteria, as per the preference of Nepali users, that will help identify and broaden the menu of clean cooking options available to Nepali market.

The project covered about 32 districts of Nepal for multiple studies: User Need Assessment (UNA) Baseline Survey, Focus Group Discussions (FGDs), UNA Validation Survey and User Acceptance Test (UAT).

- **UNA Baseline:** Study of probable preferred attributes and current fuel-stove usage scenario in 476 households in 18 districts
- **UNA Validation:** Validating the attributes scrutinized after UNA Baseline in 199 households of additional 10 districts. The findings aided in further analysis for study design of User Acceptance Test and Labeling
- **User Acceptance Test:** Field based Users Friendliness Testing of the stoves implementing the proposed labeling criteria.

The study has established a labeling scheme for clean cookstove for use by Nepali households. The labeling scheme has considered laboratory performance parameters and user friendliness attributes that will help identify high quality biomass-based Tier 3 or higher cookstoves that best meet the preferences of Nepal's users.

The study has also established preliminary labeling criteria for processed biomass fuels available in Nepal. This will help identify the highest quality fuels that best meet international standards and the preferences of Nepal's users. However, these criteria will need further validation through more testing. Some recommendations on possible next steps for the operationalization of a biomass based cookstove and processed fuel standardization and labeling system for Nepal.



Dr Purushottam Shrestha, Sharing experiences and giving feedback in the Forum

RTKC Updates

SCI PEP Test Station for Solar Cookers:



RTKC team undertaking first Solar test

With the equipment support of Solar Cooker International (SCI), RTKC Nepal has now acquired solar cooker testing station for performance evaluation process (PEP) for solar cookers. With PEP test station, RTKC Nepal can test different types of solar cookers: panel, box, parabolic, etc.

Thermal performance results are acquired by the test instrument, which is capable of recording temperature, wind speed and solar irradiance to a space delimited file on an SD card for later post-processing to compute a standard cooking power. The test

station is expandable to monitor temperatures in up to 3 different cookers simultaneously. There is flexibility in test duration, test interval, test medium loading as well as software configurable according to sun elevation. It uses data smoothing and performs ASAE calculations so the user only needs to import the data into a spreadsheet for graphing and analysis.

UNOPS Field Study of Black Carbon Emissions from Biogas Stoves in Nepal:

Three successful field campaigns have been conducted in Kavre, Nepal led by Ryan Thompson from Mountain Air Engineering. Measurements and Cheryl Weyant from University of Illinois. RTKC Nepal provided equipment and field support for the study. The measurements include: include:

1. CO and particle emissions of biogas, LPG, and biomass stoves;
2. Stove end uses (tasks), demographics, and economics using household surveys;
3. Daily household fuel use and fuel consumption rates in each stove;
4. Stove use (hr/day) using temperature sensors.

Client Testing:

RTKC Nepal completed lab test of biomass stoves for the national and international clients using Laboratory Emission Monitoring System and ISO-IWA Tier reporting. The clients were: Pure Flame Cookstove, USA- Ganesh 4, Integrated Development Company Limited, Bangladesh-, Swami Smart Electronics Pvt. Ltd, India-Conducted only single test, Filament Engineering Ltd, Bangladesh- MUSPAN2, Jan Pak Enterprise Pvt. Ltd- Pakistan- Jan Pak Supreme Stove with Chimney, BEN Research Student of Nottingham University, UK- BEN IICS batch feed, Infrastructure Development Company Ltd, Bangladesh and Binaya K.C, PhD student of University of Nottingham. "Emission characterization of Biomass after its combustion in Improved Cooking Stove (ICS) and its impact on Health."

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towards action for development... since 1989

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Background

Centre for Rural Technology, Nepal (CRT/N) is a professional non-governmental organization engaged in developing and promoting appropriate rural technologies effective in meeting the basic needs and improving livelihood of rural people. Established in August 1989 under the Company Act, CRT/N has been re-registered with Government of Nepal (GoN) under the Social Organization Registration Act 2034 since October 1998. The organization is actively engaged in upgrading traditional technologies as well as developing new technologies with diversified and versatile applications to meet rural needs

Vision

CRT/N as a professional/innovative organization and knowledge centre in renewable energy/appropriate technology delivering quality services to local communities for improving their livelihood

Mission

Develop, promote and disseminate environmentally sound rural/appropriate technologies and strengthen capability of rural communities in creating better opportunities through mobilisation of local resources to improve their livelihood conditions.

Objectives

- Promote and disseminate rural/appropriate technologies to meet the basic needs of the people and improve their quality of life.
- Conduct adaptive and action-oriented research on indigenous and improved rural/appropriate technologies.
- Train and transfer technical information and know-how on production, installation and management of rural/appropriate technologies.
- Assist in development of technical and institutional capabilities for sustainable development.
- Provide technical support and consulting services in the field of rural energy and environment conservation and climate change.

Interaction Programme with Bethanchok Rural Municipality for Scaling-up EVD



CRT/N organized a half day interaction programme with the representatives of Bethanchok Rural Municipality on October 31, 2017 at their office in the involvement of Local Partner's and users committee. The basic objective behind holding the meeting was to seek support and collaboration from municipality to implement EVD phase 2 "Advocating for up scaling for local climate solutions as Eco Village Development as a mean to strengthen pro-poor climate agenda in South Asia" programme.

Mr. Hari Gopal Gorkhali, Senior Director, Mr. Lumin Kumar Shrestha, Advisor, Ms. Shovana Maharjan and Mr. Subas Lamichane from CRT/N participated in the programme and briefed about the objective and proposed for the collaboration. Mr. Prem Bahadur Timilsena,



Chairperson of Bethanchok Rural Municipality while thanking to CRT/N, showed his consensus to work in collaboration. Mr. Timilsena, advised few environmental friendly activities which also needs to be

feasible for that area. He put emphasized on the activities related to the agro-based enterprises, livestock's, health and livelihood of the people.

He mentioned Bee Keeping as a strategic way to motivate people to adopt environmental friendly activities, because chemical pesticides and fertilizer, adversely affect bees thus it will discourage people to use chemicals and will ensure adoption of organic farming. Similarly, he suggested including activities like cowshed management, sanitation programme in the EVD phase 2. At the end, Mr Timilsena also suggested for developing training package on enterprise development and market linkage.