Final Report

Effective Communication Tools for Green and Inclusive Energy Promotion in Nepal

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Foreword

Though energy remains vital for human development, billions of people are left without its access. The decisions made in energy investment in the coming years will determine human development in many ways. In Nepal, one fourth of the population mostly from rural areas live with poor quality of energy supply with predominant dependency on solid biomass fuel using traditional cookstoves which emit high indoor air pollution, harmful to human health and environment. Lack of adequate awareness at different level of energy market system is a major barrier towards poor energy access. Communication with effective strategy, approaches and tools among the market system actors of Renewable Energy Technologies (RETs) is a must for achieving behavioural change, adoption, optimum utilisation and market promotion of RETs. This research therefore, was carried out by Practical Action under Green and Inclusive Energy (GIE) project implemented by Hivos Energia and funded by The Netherlands Ministry of Foreign Affairs as per the need of project consortium members. The study made research on effective communication strategies and tools for promotion of renewable energy technologies to achieve SE4ALL and SDG-7 targets in Nepal.

First and foremost, our gratitude goes to the women and men from sampled survey sites for providing valuable information for this study. We are also very thankful to our GIE project consortium partners and other respondents from various organisations for providing necessary information and feedback to this study. For their contribution to prepare this report, I would like to thank my colleagues from Practical Action, Pooja Sharma, Min Bikram Malla, Manjari Shrestha, and Ujjal Raj Acharya (consultant) including Archana Gurung and Upendra Shrestha for editorial support. We also thank a team of consultants from Phulchoki Energy Pvt. Ltd and Nepal Energy Foundation, Mahesh Acharya, Dil Raj Khanal, Devendra Aryal, Shreya Thakali and Dilli Prasad Ghimire. Our special thanks also goes to Ben Garside and Kavita Rai from International Institute for Environment and Development (IIED), whose review, feedback, support and contributions to the report were truly invaluable. Finally, I would like to thank Sheila Oparaocha (ENERGIA) and Dr. Indira Shakya for their valued feedbacks and overall coordination.

I hope this document will be a valuable entity in strengthening communications to better achieve the targets of SE4ALL and SDG-7 in Nepal.

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Abbreviation

ADB	Asian Development Bank
AEPC	Alternative Energy Promotion Centre
CBS	Central Bureau of Statistics
CBOs	Community-based Organisation
CCS4All	Clean Cooking Solutions for All
CREE	Community Rural Electrification Entities
CREF	Central Renewable Energy Fund
CRT	Center for Rural Technology
CSOs	Civil Society Organisations
DAGs	Disadvantage Groups
DFID	Department for International Development
GESI	Gender Equality and Social Inclusion
FGDs	Focus Group Discussions
GIE	Green and Inclusive Energy
GIS	Geographic Information System
GoN	Government of Nepal
GRM	Grievance Redress Mechanisms
ICIMOD	International Centre for Integrated Mountain Development
ICS	Improved Cookstoves
IIED	International Institute for Environment and Development
INGO	International Non-Governmental Organisation
KIIs	Key Informant Interviews
MHPs	Micro Hydropower Plants
NRREP	National Rural and Renewable Energy Programme
NTNC	Nepal Trust for Nature Conservation
NEA	Nepal Electricity Authority
NACEUN	National Association of Community Electricity Users Nepal
NGO	Non-Governmental Organisation
NPC	National Planning Commission
PHPA	Public Hearing and Public Auditing
PAF	Poverty Alleviation Fund
RESDM	Renewal Energy Subsidy Delivery Mechanism
RE	Renewal Energy
RETs	Renewal Energy Technologies

RERL	Renewable Energy for Rural Livelihood
REDP	Rural Energy Development Program
SE4ALL	Sustainable Energy for All
SDGs	Sustainable Development Goals
UN	United Nations
WB	World Bank
WWF	Worldwide Fund for Nature

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Executive Summary

In Nepal, more than 25 per cent of the population (7.4 million) mainly from rural areas still have no access to electricity. Those with electricity also have poor quality supply. For cooking and heating applications, majority of the population (74%) is predominantly dependent on solid biomass fuel using traditional cookstoves, which emits very high air pollutants harmful to human health and environment. Lack of adequate awareness at different level of energy market system (supply chain, support services and enabling environment) is one of the key barriers for poor energy access. Effective communication among the market system actors of Renewable Energy Technologies (RETs) is a must to achieve behavioural change, adoption, optimum utilisation and market promotion of RETs. Effective communication can play a significant role in creating vibrant and sustainable market system of RETs. There is a need to give adequate attention on it to achieve SDG-7 targets.

The research was carried out using participatory research methods and tools like Focus Group Discussions (FGDs) and Key Informant Interviews (KIIs) to collect data and information. A total of six FGDs and KIIs were conducted to obtain the information. Likewise, interview was carried out with executive committee members of Community Rural Electrification Entities (CREE) and Micro-hydro systems. Additionally, sample household survey was administered in 139 households in 11 districts (Shyangja, Banke, Palpa, Glumi, Dhading, Tanahun, Kaski, Parbat, Baglung, Surkhet and Dang). Additionally, interviews were conducted with national level key stakeholders like Asian Development Bank (ADB), World Bank (WB), Department for International Development (DFID), International Centre for Integrated Mountain Development (ICIMOD), Practical Action, National Association of Community Electricity Users Nepal (NACEUN), and Alternative Energy Promotion Centre (AEPC).

The findings suggest that there has been application of various communication tools to promote RETs. However they are not adequate enough to motivate people to adopt renewable energy technologies. Majority of population lack sufficient information about different available energy technology options, their cost benefits and subsidy provision. While at the supply, planning and policy side, they lack information on the local preferences, capacity and willingness of target groups to pay and data on local energy potentials. Nepal being a heterogeneous country with lots of dynamism in culture, ethnicity and class needs different communication approaches and tools to meet the need of diverse group of people and due considerations must be made at different stages of behavioural changes.

The study result shows that, there are number of barriers that have been distorting effective communication, which include: i) Physical (infrastructural) barriers; ii) Attitudinal/cultural barriers; iii) Language barriers; iv) Physiological barriers; v) Financing; and vi) Gender barriers. There is need to overcome these barriers for effective communication for RETs promotion.

Women are the primary users of household's energy system because of their key role in the household and social attribution. During Survey, Women were found to be more interactive and receptive to information through community meetings, group interactions, training /workshops and with social media. Likewise, there is need for enhancing capacity of

general public, journalists and media personnel through training and encourage their cooperation and collaboration in promotion of RETs. These facts suggest that gender responsive communication tool must be designed and implemented to meet green energy requirement of target audiences.

There is need to design communication approaches, channels and tools as per the preferences, capacity and access of the target audiences. There must be two way (top-down and bottom-up) communication between needy people at grass root level and implementers, policy makers, planers and donors at higher levels to increase access of RETs to needy people, increase its use and achieve SDG-7 targets. To sensitise and create awareness among the large mass, use of social media, community FM radios, internet and print media are highly effective in terms of cost and time. But to convince the target audiences to adopt the technologies, it is necessary to use interpersonal communication channels as well. Content of awareness materials should be designed considering culture, language, capacity, knowledge and gender issues of the target audiences. There must be strong credible national database of RETs use status, potential energy sources and active supply chain actors. Likewise, there is need to introduce communication mechanism for feedback and complain collocation.

1. Introduction

1.1 Background

One fourth of Nepal's population, mainly from the rural areas still live with no electricity access. Those with electricity access are also suffering poor quality supply. For cooking and heating applications, the majority (74%) are predominantly dependent on solid biomass fuel using traditional cookstoves that cause hazard in human health and environment. Lack of adequate awareness at different level of energy market system is one of the key challenges to poor energy access. Effective communication has a significant role in behavioural change, adoption and market promotion of RETs. In the pretext, this research was carried out to assess existing scenario and identify effective communication strategies and tools for Nepal to promote green energy technologies.

1.2 Research Objective

The study aims to identify effective communication strategies and tools for promotion of green and inclusive energy access/RETs to achieve SE4ALL and SDG-7 targets. The specific objectives of the research include:

- to explore current communication approaches and tools being used in Nepal for dissemination of energy related information and create sustainable market of RETs
- to analyse the current practices and need for two way communication (top-down and bottom-up) and accountability mechanism
- to identify key Gender and Social Inclusion (GESI) related opportunities, problems and barriers on communication to promote RETs
- to explore the need of dissemination practices for promotion of RETs in diverse groups
- to generate recommendation for making communication strategies effective for Green and Inclusive Energy promotion

1.3 Research Questions

The study explored answers to the following pre-determined questions:

- What are existing communication strategies and tools to disseminate energy related information in Nepal?
- What are the communication practices and accountability mechanism in promoting RETs? Do existing communication practices consider both top down and bottom up information flow?
- Are the existing communication approach and tools GESI responsive? What are GESI related opportunities, problems and barriers on communication to promote RETs?
- What are current practices, opportunities, problems/barriers for promotion of RETs in diverse groups and grassroots mobilisation using communication tools?
- How can effective communication be done by maximising impact in promoting green and inclusive infrastructures/technologies development?

- How could communication be one of the priorities of Government of Nepal (GoN) to promote clean energy access?

1.4 Significance of Research

There is a big challenge to increase energy access and achieve SDG-7 targets in Nepal as per the government's commitment. Effective communication is a must to achieve the targets by bringing about behavioural change, market promotion and awareness creation. There are limited researches on effective communication approaches and tools for RETs promotion in Nepal. A meeting of GIE project consortium partners held on 2 May 2017 recommended that a research should be carried out on identifying effective communication tools for dissemination of energy related information. There is a need to conduct an in-depth analysis of effective strategy and tools for two way communication between RETs adopters and RETs implementers. This can help to increase awareness on RETs, and promote its adoption and reflect people's perception, which is useful to policy makers, planners and donors.

1.5 Scope and Limitations of Research

Green and inclusive energy technologies include simple to operate and maintain, smart, clean and off-grid technologies like solar power systems, micro-hydro and other mini-grids, improved biomass cookstoves and biogas among others. This study has considered RETs as the synonym of the Green Inclusive Energy (GIE) as this word is more familiar in Nepal.

This study collected information on existing communication tools and strategies of the government, development partners, national/international government organisations and different actors for RETs promotion. Analysis was done on existing communication gaps and problems in promotion of RETs through field surveys, interview with key informants, organisational analysis and literature review. Critical analysis was done on effectiveness of communication tools for disseminating energy related information to diverse population.

The field survey was administered in 18 Community Rural Electrification Entities (CREE) and Micro-hydro Plant (MHP) project sites of 11 districts, mostly from mid-hills. Additionally, interviews were conducted with national level key stakeholders like ADB, WB, DFID, ICIMOD, Practical Action, NACEUN, and AEPC. One of the limitations of the study may be that the interviewed CREEs and MHP sites might not represent geographical and ethnic diversities of Nepal and thus, a separate study might be required to capture the diversity. Additionally, this study is confined to the RETs to rural areas and focused on the promotion of RETs.

2. Review of Literature

Nepal is bestowed with good potential of renewable energies which include mini and micro hydropower, solar energy, various forms of biomass energy, biogas and wind energy. Despite huge renewable energy potential, about 7.4 million people live without electricity access. Those having the electricity also have poor quality of electricity supply. The annual energy consumption per capita of Nepal is 150 kWh (NPC, 2018), almost 4.5 per cent of the world average of 3126 kWh. For cooking and heating applications, majority (74.7%) of households in the country still use solid fuels as the primary source of energy for cooking

(NPC, 2017). Burning solid fuels in kitchen cause very high air pollution harmful to human health and environment.

The GoN has pledged to provide electricity access to 99 per cent households and increase the share of renewable energy to the total energy consumption to 50 per cent by 2030 (NPC, 2017). The government is also committed to provide Clean Cooking Solutions for All (CCS4All) by 2022 with a plan to completely stop the use of Tier-0 cookstoves by 2030. The Constitution of Nepal, 2015 seems to have set high priority to renewable energy and energy access to all. The constitution shows government's committed "to ensure reliable supply of energy in an affordable and easy manner, and make proper use of energy, for the fulfilment of the basic needs of citizens, by generating and developing renewable energy." Additionally, the constitution has provisioned that "every citizen shall have the right to demand and receive information on any matter of his or her interest or of public interest."

There is need of coordinated effort of public, private and civil society organizations joint effort to promote RETs. Commercialization of the RETs is must for sustainable promotion of RETs. In the context of Nepal, commercialization of RETs is still inadequate, although it had been promoted in Nepal since the early seventies. However, intensive promotional packages through donor supported projects and programs were designed and implemented about two decades later, duly supported by subsidy policies and other incentive packages (SREP, 2011). Now there is need to promote commercialisation of renewable energy technologies. There are inadequacies in commercialisation of renewable energy solutions; mainly due to lack of orientation and effective marketing approach for penetration of these solutions in rural areas. For up scaling the commercialization of energy access in rural areas, awareness and related behaviour change interventions and effective marketing are needed (NPC, 2016).

One of the working principles of AEPC is to carry out public awareness and promotional activities with the participation of local stakeholders for effective and efficient use of biomass energy and for expansion of modern, efficient and affordable technologies. By the year 2030, awareness of clean energy to the total targeted households lies within the goal of AEPC (GoN, 2017).

Effective communication is a must for promoting adoption, use and sustainability of energy. To create effective communication system, communication channels must be efficiently applied to communicate a message to the desired market. There are various communication channels to promote RETs which include: i) Advertising; ii) Personal selling; iii) Direct marketing; iv) Sponsorship; v) Communication; vi) Promotion; vii) Public relations; and viii) Digital technologies. The appropriate mix of these tools and the choice of media provides myriad of opportunities to reach the market (Jamieson & Fill, 2014). Communication mode may include verbal or written communications, visual or multi-model, face to face or mediated, formal or informal, direct or indirect. These communication channels encourage the adoption of RETs. By recognising the importance of communication, Rural Energy Policy 2006 of Nepal has provisioned for providing adequate information campaigns and educational programmes to stakeholders and also requires involvement of broad stakeholders to ensure the whole process of technology development to project identification, design and implementation.

RETs encounter several market barriers during its development and deployment. In developing country markets, weak institutional frameworks are the major challenges for the innovation and commercialization of RETs. Lack of awareness about the technologies, poor knowledge base for installing and maintaining technologies, poor perception of related stakeholders about new technology are the key barriers associated with RETs promotion in Nepal (NPC, 2016). There are number of barriers that can distort effective communication, which include: i) Physical (infrastructural) barriers; ii) Attitudinal/cultural barriers; iii) Language barriers; iv) Avoiding barrier; v) Financing; and vi) Gender barriers. There is need to overcome these barriers for effective communication for RETs promotion.

For commercial promotion of RETs, the effect of behavior change needs to be assessed (Jamieson & Fill, 2014). The behavioural change that promotes RETs can be assessed in three stages: i) Awareness and participation for uptake of RETs; ii) Demand for RETs; and iii) Adoption of RETs. Adoption of RETs passes through several stages of behavior change starting from initial stage of awareness and terminating at the maintenance or adoption stage. Awareness is useful when the people are in pre-contemplation stage, and it is needed to turn people to contemplation stage, after which planned intervention from policy level is necessary. This leads to the preparation stage, action and maintenance stage respectively and ultimately people are ready to adopt the renewable technologies.

Non-governmental Organisations (NGOs) have been playing a major role in promoting RETs by dissemination of information and awareness creation to communities (Rai, 2016). Establishing an energy information and management system to support analysis and decision making in energy related initiatives is one of the four major objectives of Nepal Energy Efficiency Programme (NEEP/GIZ). Similarly, it is a priority area for RETs promotion by Practical Action, Winrock, Worldwide Fund for Nature (WWF), Netherlands Development Organisation (SNV), Center for Rural Technology (CRT) and many other I/NGOs (Annex II).

There is need of two way communication to promote RETs. A good example of two way communications can be taken from the biogas support promotion sector (SNV/BSP). In the project, client satisfaction was regularly measured through consumer surveys, analysing a cross cutting sample of all biogas users and comparing them with non-biogas users. The findings from these surveys were processed to further improve product quality. The client surveys were also able to influence others with the benefits of biogas systems and as a result others members of the community were interested in obtaining one for themselves. Thus people satisfaction survey based on two way communication played an important role for growth in biogas user[1].

The role of good data is crucial but there is a gap between availability of data of potential energy sources and access to RETs in Nepal. There is need of effective mechanism for consolidation, sharing and ownership of all data available throughout the country (NPC 2016). It has also been difficult to assess the impacts and effectiveness of biomass energy promotion programmes due to lack of adequate data related to operational status of the RETs (Biomass Energy Strategy, 2073). There is need for updated data and planning, and policies for evolving new markets. Data and information needed on a central information

[1] *Sundar Bajgain, Indira Shakya, 2005. A Successful Model of Public Private Partnership for Rural Household Energy Supply*

system and geographic information system (GIS) mapping will be very useful to promote RETs (Rai, 2016).

Additionally, there is need for adequate attention to gender issues in designing effective communication tools. Incorporating gender issues into communication pertains to increase transparency, improved planning, enhanced effectiveness and better results (UNDP, 2015). Likewise, there is need to design communication tools according to the capacity, preferences and access of the target audiences. The aged and illiterate people prefer the use of conventional communication practices such as person-to-person meeting, community consultation, *Katawal*, festival gathering whereas youth generation prefer use of email and internet along with TV/Radio for conservation related communication. Effective communication requires ffective use of multiple communication channels (WWF, 2016). Likewise, it is equally important to mobilise and pass on accurate information to local communities and also the media for RETs promotion. At the local level, many individuals/ communities do not have sufficient information and capacity to file necessary documentation as per government's requirements. In almost all Renewable Energy (RE) technologies, awareness and imparting of 'right and appropriate information' to consumers were put forward as a major gap. Thus, capacity development has to go hand in hand with a solid information base. The capacity development plan for the RE sector should seek to enable local experts and institutions to provide up-to-date knowledge and information to build up capacities of relevant stakeholders including decision makers (Rai, 2016).

There are very few researches in Nepal on the role of communication for RETs promotion. Most of the studies are focused on technical aspects of RETs. Likewise, there has been significant change in communication tools and appliances use in recent years. In that context, there is need to do an in- depth analysis to find effective communication tools considering trend, diversities in terms of ethnicity, geography and infrastructure access.

3. Research Methodology

The research was based on the primary sources through household survey, FGDs, and KIIs. Data/information was collected as per the matrix of research work (Annex 1). Additionally, required information was collected from secondary sources from literature review. Mainly qualitative method was used to obtain stakeholders perception on communication tools in disseminating RETs promotion in diverse population. In summary, the survey methods adopted for this study are listed below:

Table 1: Planned Research Methods and Tools

Research Methods	Tools/Techniques
Literature Review	Reference and abstracts guide, contents analysis, web surfing, survey of policy documents, assessment reports, progress reports, among others related to the study
Observation	Interactional recording, possible use of voice recorders, photographic techniques, supervision and monitoring of field studies performed by others
Opinionative	Structured questionnaire
Household survey	Use of a detailed schedule with open and closed question, semi-structured questionnaire/checklist
Focused Group Interview	Small groups of respondents interviewed simultaneously, FGD
Case Study	Compilation of cases of success and failure of different communication methods
Key Informant Interview (KII)	Interviews with key stakeholders at the national level, which include: • ADB, WB, GIZ, NORAD, DFID • ICIMOD, WINROCK • Practical Action, CRT-N, NACEUN • NBPA,SEMAN, ICS-Association

Key informant interview was held with policy makers and representatives from RET promoting and implementing organisations mainly from government organisations, development partners, Civil Society Organisations (CSOs), networks and national/international government organisations as listed in Annex II. Likewise, close consultations were held with the GIE project consortium members (Annex II). Additionally, a national level workshop was organised to get feedback of the key stakeholders on the report (Annex VIII).

Similarly, FGDs and KIIs using checklist/questionnaires, household survey using questionnaires (Annex V-VII) were administered in 11 districts (Annex III & IV) to collect necessary information and case studies for this study as mentioned below in detail:

3.1 Households Survey

Survey was administered in 139 households from 11 districts as described in table below:

Table 2: Districts and Household Surveys

S.No	Districts	Number of HHs	Percentage
1	Dhading	16	11.5%
2	Dang	9	6.5%
3	Shyangja	10	7.2%
4	Tanahun	20	14.4%
5	Surkhet	8	5.8%
6	Gulmi	11	7.9%
7	Baglung	26	18.7%
8	Parbat	8	5.8%
9	Kaski	8	5.8%
10	Palpa	5	3.6%
11	Banke	18	12.9%
Total		**139**	**100%**

Source: Survey Data, 2017

Effort was made to include diverse population in survey. Among the respondents 34.5 per cent were Brahmin and Chettri, 38.8 per cent were indigenous community people, 25.9 per cent were *Dalits* and 0.7 per cent were Chepang and marginalised indigenous community.

3.2 Focus Group Discussions

FGDs were conducted in 6 locations with total number of 61 participants as described in table below:

Table 3: Focus Group Participants

Districts	Female Participants	Male Participants	Total Participants
Dhadhing – Amilichhap	5	7	12
Dhadhing – Malekhu II	5	2	9
Shyanja – Putpute	-	14	14
Tanahu - Chheranga Khola	5	4	9
Surkhet – Babiyachaur	1	9	10
Gulmi – Musikot	3	6	9
Total	19	42	61

Note: The participants were mainly energy management committee members and local leaders so there was low participation of women in the FGDs.
Source: Survey Data, 2017

4. Research Findings

4.1 Barriers to Adopt RETs and Role of Communication

About 43.2 per cent of survey respondents perceive that lack of information about RETs is the main reason for low RETs adoption. Other perceived barriers include lack of finance (by 23.1 per cent respondent), operation and maintenance problem (by 15.9 per cent respondents) as described in figure below:

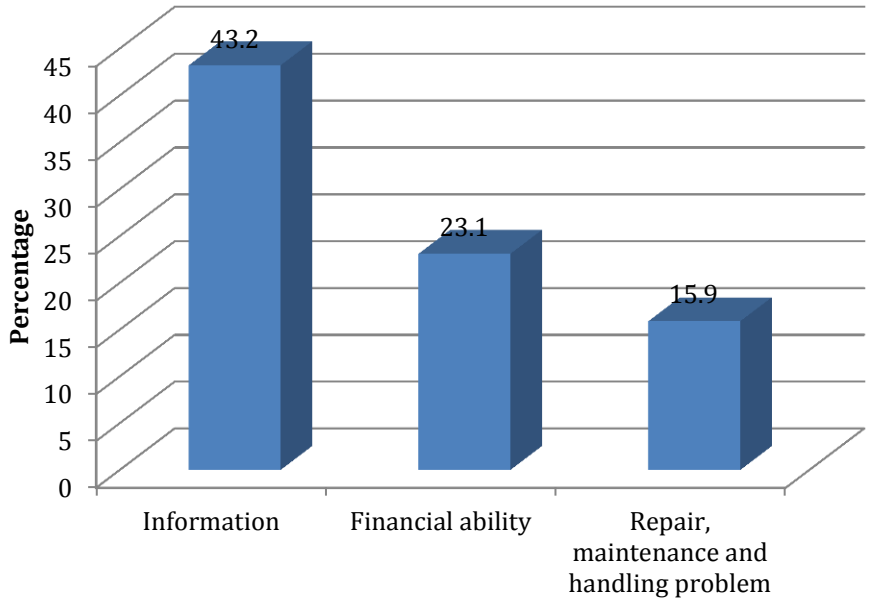

Figure 1: Barriers in shifting to RETs

4.2 Awareness about RETs

The survey result shows that respondents are familiar with the terms Energy (*Urja*) as they were already using some form of energy for basic lighting and cooking purpose but were unable to distinguish between RETs and Non-RETs. One of the principal requirements was identified to make them aware them about social, health and environmental benefits of RETs and convince them to use RETs instead of traditional energy solutions. The following figure shows existing interest of the respondents towards RETs:

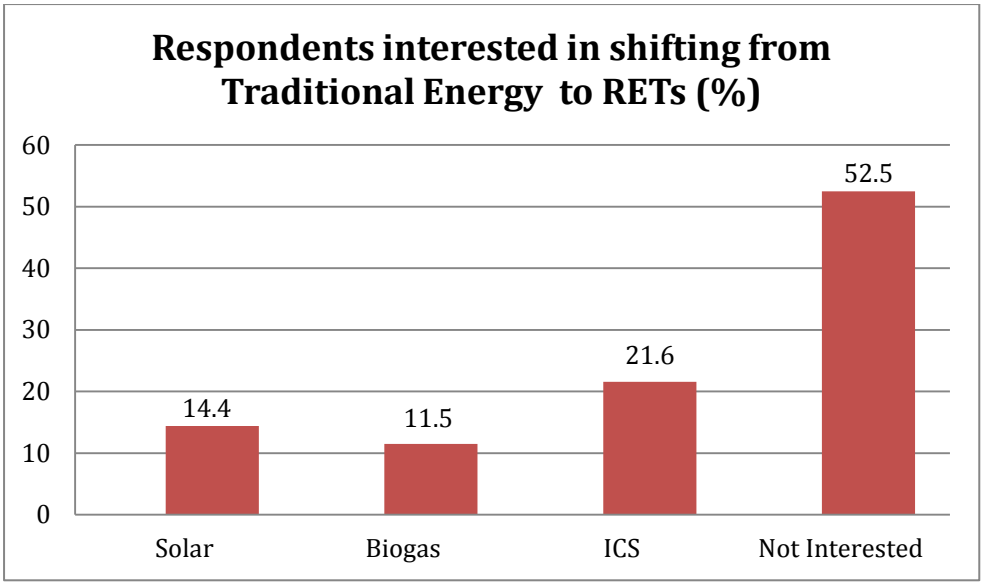

Figure 2: Percentage of respondent's interest in shifting traditional to RETs

The figure shows that majority of respondents (52.5%) are not interested in shifting from traditional energy sources to RETs, which shows respondents were unaware of RETs benefits and seemed to be at pre-contemplation or contemplation stage. There seems to be knowledge limitations especially the knowledge on unavailability of different renewable technologies and their long-term benefits. On contrary, 47.5 per cent of them showed interest to shift to RETs in which 21.6 per cent showed their interest to shift to Improved Cookstoves (ICS) from traditional cook stoves followed by solar (14.4%) and biogas (11.5%) respectively. Despite majority of people dependent in agriculture sector, only 11.5 per cent HHs interested in biogas seem to have cultural barrier to accept livestock dung or utilisation of human excreta in the biogas digester to cook their food.

The subsidy for renewable energy technologies has been playing a very important role in making various sources of energy affordable. There has also been a subsidy delivery mechanism created for different interventions. However, these subsidy delivery mechanisms are not directly communicated to the end users or people at the community level. Most of the policies regarding subsidies do not have a proper means to reach the community directly which has created a gap in people's knowledge about provision of subsidies.

Case Study 1: Role of Community FM in awareness generation

After the establishment of *Girindikhola* MHP, a FM station (Radio Sarathi: http://www.radiosarathi.com.np) was established in Kharbang, Baglung by Rudrawati Media Pvt. Ltd. At present, there are 28 shareholders of the FM radio but there is plan to transfer the ownership to the local cooperative. The radio is now an important local community FM station which has been regularly providing local news, community notices and information to the people of Baglung and some of the adjoining districts (Parbat, Gulmi, Arghakhanchi, Palpa, Syangja, Myagid and Rolpa) since 15 January 2011. This initiative by MHP and community FM station has helped to dissemination information effectively at remote. It is an example of effective communication tool at community level which has been contributing to RETs promotion and also getting benefitted from the renewable energy facility.

According to majority (66.2%) of the respondents, they know about RETs. However their knowledge on subsidies provided and the overall benefits of using RETs are very limited. Most of the HHs (71.2%) are still using solid biomass fuel with inefficient traditional cookstoves. Use of LPG is also very significant (by 53,2%) and in increasing trend. Fuel stacking is quite high and most of families are using LPG just for tea making during day time only. *

4.3 Communication Media Preferences

4.3.1 Mass Communication/Media

Majority of the people still prefer traditional communication media to receive information which include television radio, newspaper and public advertising such as posters and hoarding boards. Radio is preference of majority of respondents (74.8%) followed by both (70.5%) audio/visual advertisements and posters and pamphlets by 64.1 per cent respondents. Use of internet and social media is also increasing specially among young generation (51.1%). A significant number (46.8%) of respondents expressed preference to get information through social media networks like Face book and through YouTube.

Table 4: Media Preference at the community level

S.NO	Type of Media	Percentage
1	Radio	74.8%
2	Audio/Visual Advertisement	70.5%
3	Posters and Pamphlets	64.0%
3	Internet	51.1%
4	Newspaper	49.6%
5	Social Media	46.8%

Source: Survey Data, 2017

Mobile phones penetration is rapid in remote villages. In this survey, 90.6 per cent respondents possessed mobile phone/s. These phones can be used as a communication tool to get RETs related information from support organisations and service providers. The use of mobile phones for internet services and social media has also created viable opportunity to utilise this emerging mode of communication to disseminate RETs related information. This would also create two-way communication between community, development organisations, private sector actors, policy makers and planners.

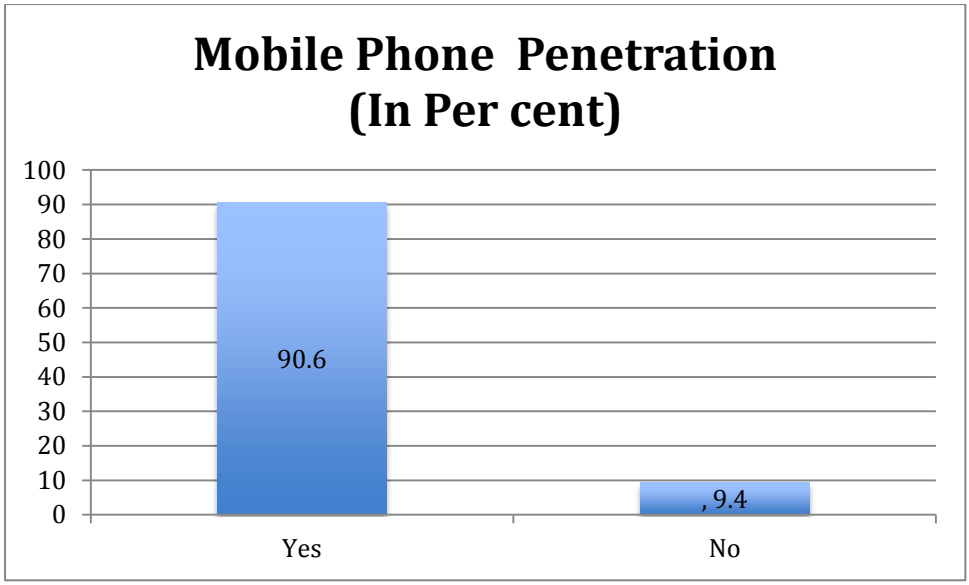

Figure 3: *Mobile Phone Penetration*

Majority of HHs (61.9%) had a television set in the sampled region. It can be an effective medium of communication for RET development, however only 8.6 per cent had received information regarding RETs through television programs and 9.4 per cent from visual advertisements. Though television is considered one of the most effective tools to communicate and is an effective source of information, people were mostly found using it only for entertainment purpose rather than as a source of information and awareness.

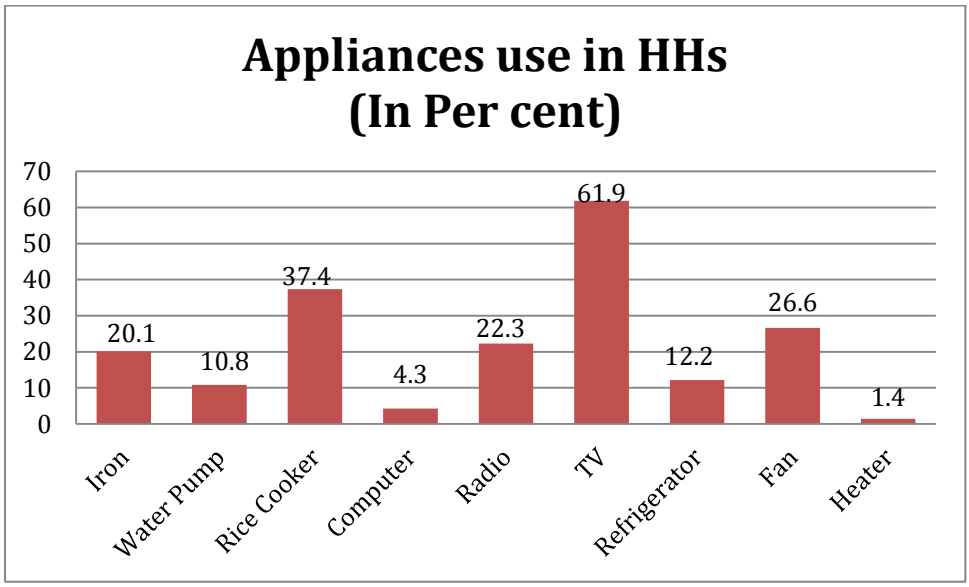

Figure 4: Appliances use in HHs

More traditional forms of media like radio and television are said to have the most impact on behavioural changes but there are new opportunities that can be explored using new technologies to communicate information and awareness regarding RETs with the use of Internet and social media.

4.3.2 Interpersonal Communication

People in the study areas were found to rely heavily on community meetings and informal face-to-face communication for RETs as well as other information. Interpersonal communication is very important for RETs promotion. Although it may be time and cost intensive, this type of communication may be effective to close the gap between the top down and bottom up approach. Among the respondents, 66.90 per cent of the total respondents preferred community meetings for getting information regarding RETs followed by women group's meetings (31.70%). Similarly, 24.50 per cent people preferred public announcements, 23.70 per cent informal community interactions and 14.40 per cent preferred training and workshops.

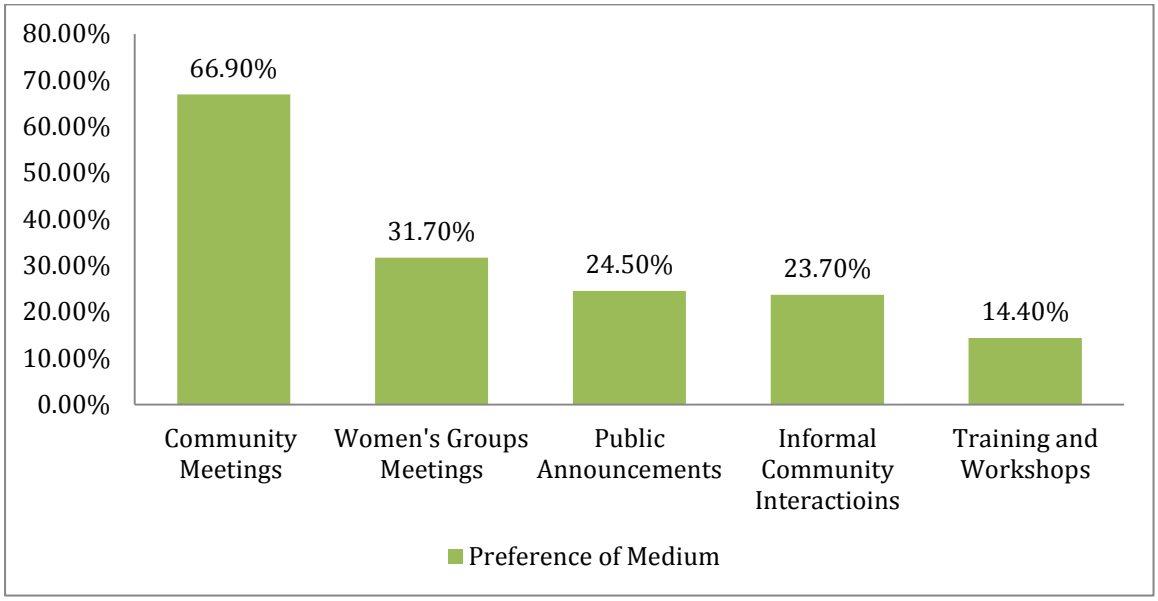

Figure 5: Preference of medium to access RETs related information

Traditional communication tools like *Katuwal Karaune and Sankha fukne* are still in use in some areas. *Katuwal Karaune* is one of the oldest communications practiced in Nepal where a person (*Katwal*) shouts out messages to the village communities. The survey findings indicate that 20 per cent of people are still dependent on *Katwal Karaune system* to get information.

Table 5: Traditional communication tools use for sharing information

Traditional tools	**Preference for traditional media (%)**
Katwal karaune system and *Sankha Fukne*	22
Feasts/Festivals	3
Community meetings	74
Total	**100**

Source: Survey Data, 2017

In survey, majority (about 74.1 per cent) of the respondents showed their interest to receive information regarding RETs through the trainings, workshops and programs (interpersonal communications). However referring to the past practices, it was found that only 7.2 per cent had participated in such events. No significant difference was observed in men and women

participation. Among the men respondents, 7.4% had got opportunity to participate training, number of women having training was 7.1% among the respondent women.

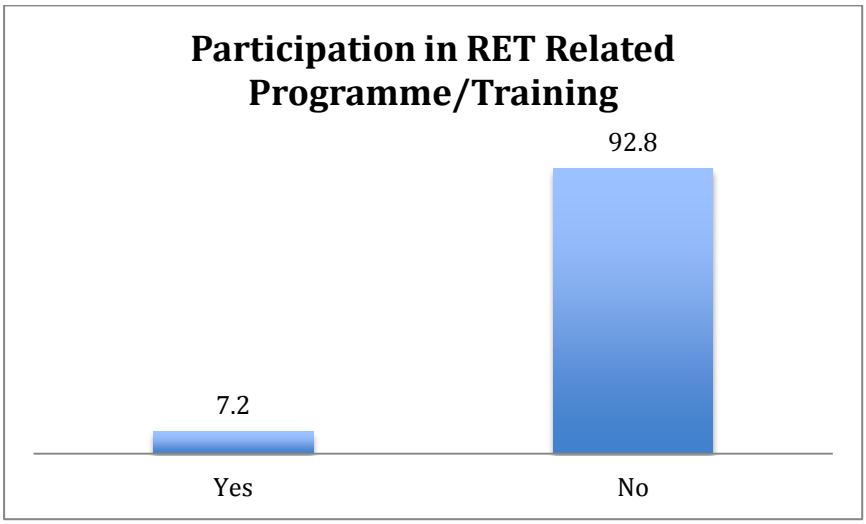

Figure 6: Percentage of Respondents' Participation in RETs Programme

Interpersonal communications such as training, orientation and workshops seem more effective for motivating people to RETs compared to mass media. It can help to upscale awareness and capacitate communities with information and technical knowledge. Lack of trainings and workshops have been delaying the adoption of clean technology.

4.4 Gender and Communication

Significant difference was observed in choices of communication channels amid demographic variation as well. Women prefer interpersonal communication compared to mass communication media while male preferred other mass communication channels. Women prefer to discuss about RETs in their group meetings while majority of men preferred to get information through radio news. Gender difference was clearly observed in terms of radio news as a source of information. Radio news is more popular among male members compared to female. Similar difference was observed in terms of soap operas or tele-serials. It shows need of different communication channel as per the target audiences.

Table 6: Preference of Communication Channel to Receive RETs Related Information

Media	**Gender (%)**	
	Female	Male
Radio Drama	13	17
Radio News	7	24
Reports	2	2
TV Programs	8	9
TV Advertisement	9	11
TV Drama/ Tele Films/Daily soaps	12	11
Telephone	12	9
Internet	5	2

Social Media	13	9
Tea Shop Gossip	9	9
Women Group	44	13
Face to Face Interaction	27	19

Source: Survey Data, 2017

With respect to the content, the survey result suggests that women preferred visual media in form of drama and story. Information in form of news is more popular among men compared to women. According to the women respondents, the presentation of content used in the form of news is not compelling to them. The effectiveness of most preferred communication tools also depends on the content and the way of information provided. There is a big challenge to integrate the need of effective communication tools and content, for the benefit for RETs promotion to different sections of people

Women representation and participation in user committees and other energy related activities are comparatively low. Being primary users of energy, women have expressed interest in learning proper use and technical aspects of renewable technologies due to dependency on technicians or male members of the family. The effective communication is a key to the empowerment of people living in rural areas, particularly women and marginalised groups, to make better decisions towards improving their lives. The increasing numbers of women group especially in rural areas can be the vehicle of communication that helps to promote the RETs programmes. Women have demonstrated good skills in community mobilisation through involvement in community forestry groups, mother groups and cooperatives. They are found to be more interactive and receptive to information through community meeting, group interactions, training/workshops and even with social media.

Table 7: Percentage of Selection of RETs in Households

Gender	**Selection of RETs in HHs (%)**
Male	54
Female	46

Source: Survey Data, 2017

Survey results show that both male and female respondents were almost equally involved in decision making on selection of RETs in households. Therefore, both should be equally involved in providing and receiving information and decision making process. As women are the primary users and managers of the household's energy system, their involvement is more crucial.

4.5 Community Engagement

The study results suggest that local communities and people's participation also plays vital role in promoting public awareness. Community forests, CREEs and Community based Micro Hydro are examples of how local communities can successfully participate in the management of resources and its sustainable use. Similarly, such local participation in renewable energy interventions has helped to enhance awareness about RETs benefits and helps to create a sense of ownership.

4.4 Challenges in Communication

4.4.1 Low Literacy in Rural Nepal

Lower literacy rate is the most formidable challenge for increasing access to information and communication. Particularly among women and people from marginalised groups, the illiteracy rate is still significant (25%) in rural Nepal.

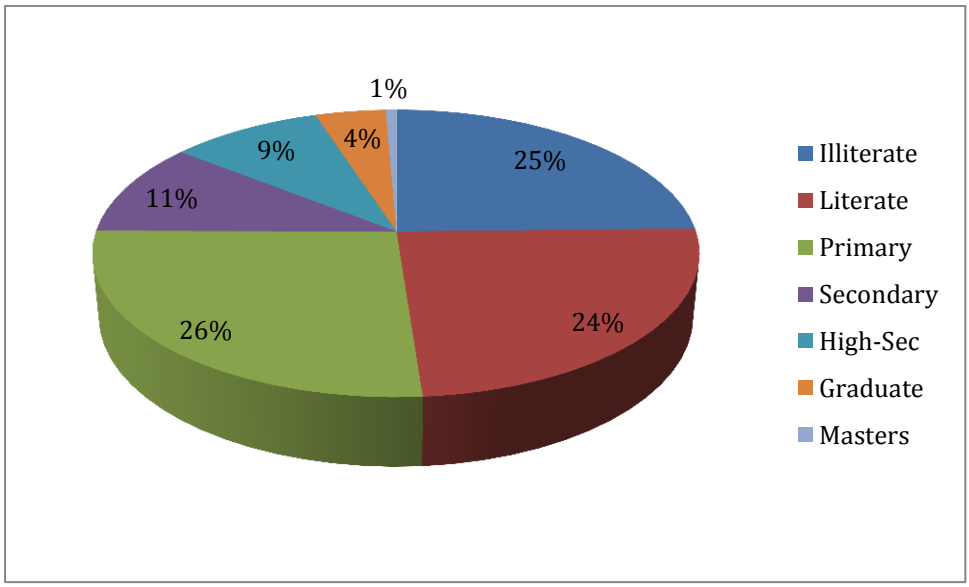

Figure 7: Literacy rate in surveyed locations

Also, high level of poverty with limited income source pose more challenges in communication. The other challenges that causes the gap in information and communication at the community level is high migration. Most of the literate and skilled populations from rural communities are either abroad or moved to urban areas, which has caused brain drain and created knowledge gap at the community level. Most of the people residing in rural areas are women, elderly or children.

The disparities in the level of access to information were a result of low level of literacy, increase in foreign employment and lack of awareness at the community level.

Case Study 2

Lack of Awareness on Health and Environmental Benefits of ICS

In the survey sites, use of traditional stoves was found very high (71.2%). A significant number of people still prefer traditional forms of energy with traditional cookstoves. Their perception and priorities on energy services, energy use habits and behaviour pattern reject newer forms of cooking technologies like ICS. According to the villagers, there are many benefits of traditional cookstoves, which include:

- cooking time is faster with traditional cookstoves compared to ICSs
- requires minimum maintenance compared to ICSs
- during winters, many households prefer using traditional stoves as people can sit around the fireplace and have a chat and it also keeps them warm

People are giving higher value to above mentioned benefits instead of health and environmental benefits. There seems clear gap in two way communication on the use and benefits of ICSs and health and environmental harm caused by traditional fuels.

4.4.2 Lack of Appropriate Media Content

During discussion with the stakeholders, it was found that the need of people in terms of clean energy was not reflected adequately in the communication content. The mass media were found giving low priority to RETs compared to issues of climate change, community forestry and gender violence.

There is need for providing adequate and right knowledge and information among people regarding investment, use, conservation and underlying opportunities for using renewable energy technologies. It has been depriving people from socio-economic, environmental and health benefits that can be reaped by using renewable energy technologies. For example, dung cakes are common source of biomass producing inferior energy for cooking. However, the same animal residue when used in biogas plant can produce environment, health and agriculture friendly energy.

4.4.3 Lack of Data, Coordination, Integrated Viewpoint and Action Plans among Stakeholders

It has been difficult to assess the impacts and effectiveness of renewable energy promotion programmes due to lack of adequate data related to operational status of RETs. There is also a challenge to increase awareness on effective use of RETs with utilisation of appropriate modern technologies.

There are various sectors like agriculture, livestock, forestry and climate change which are directly or indirectly related to renewable energy resources and needs coordination among these bodies which have not been adequate hitherto. There is also a lack of human resource and other resources within local bodies for effective management and efficient use of RETs. The institutions responsible to handle RETs related matters have weak mechanism for effective information dissemination regarding subsidies and technology adoption.

Lack of adequate information sharing and awareness at different level of energy market system (supply chain, support services and enabling environment) is one of the key barriers for poor energy access. From Government side, Alternative Energy Promotion Centre (AEPC) coordinates RETs promotional works in Nepal. AEPC has good coordination with the donors and I/NGOs. But still more communication and data sharing are required among all stakeholders (including private sectors and local governments) to solve energy access issues in Nepal.

4.4.4 Blanket Communication Approach for Diverse Population

Nepal is a heterogeneous country with diverse culture, ethnicity and class. There is a need of area and ethnicity specific communication tools and strategies for diverse population. Since the communication opportunities are key interventions to bridge information gaps communication and information sharing mechanisms needs to be effective. Its effectiveness

depends on its content and tool as per the socio-economic, cultural, education level and infrastructure of the targets groups. In Nepal, there is generic communication content and tools, which is not able to meet need of diverse population.

There is a need to have appropriate communication channels that can effectively communicate RETs related information and knowledge to the diversified community. An effective communication channel should ensure that there is two way communication between the information source and receivers' end. In order to create ownership and inclusion, there should be active participation on the part of the community. While taking into consideration the aspect of geographical, cultural and ethnic diversities, there should be situation analysis and contextualised communication models and framework that can be specific to the target audience.

4.4.5 Lack of Proper Monitoring and Evaluation Mechanism

Along with limitation in communication models, monitoring/evaluation and impact analysis of communication interventions, there is absence of feedback and complain collection mechanism from the target communities to solve the issues and gaps.

4.4.6 New Government Structures and Change in Responsibilities

As per the new federal constitution promulgated on September 2015, power has been divided amongst three tiers of government (central, provincial and local/municipal), each of which has autonomy to make development plan, raise and spend revenue. The local governments have extensive fiscal autonomy, resource mobilisation and management responsibilities as ensured by the constitution. The local governments have mandate to promote small scale renewable energy and other climate friendly initiatives embedded into their planning cycle. But there is lack of clarity on their responsibilities, and there also lies question on their capacity to plan and manage resources to achieve energy access targets. Additionally, without clear understanding of positive externalities of RETs, it may not get top priority from the local government. Likewise, there is still no clarity on role, responsibility and authority of AEPC[2] to coordinate RET related sector in Nepal in the changed scenario. It may be a short term phenomenon but it is a pertinent issue to be given adequate attention to be resolved soon.

[2] AEPC is as the national focal government organization for promoting renewable and alternative energy technologies in Nepal. It as an intermediary institution between the operational level i.e. NGOs/private promoters of renewable energy and the policy decision levels in relevant ministries.

5. Conclusion and Recommendations

5.1 Conclusions

Lack of adequate awareness at different level of energy market system (supply chain, support services and enabling environment) is one of the key barriers for poor energy access. Effective communication among the RETs market system actors is must for achieving behavioural change, adoption, optimum utilisation and market promotion of RETs. Effective communication can play a significant role to create vibrant and sustainable market system of RETs. There is need to give adequate attention on it to achieve SEforALL and SDG-7 targets.

The study result shows that, there are number of challenges for effective communication, which include: i) Low literacy rate; ii) Lack of appropriate media content; iii) Physical (infrastructural) barriers; iv) Financial barrier; v) Gender issues; vi) Lack of data, information sharing and coordination among Stakeholders; vii) Blanket communication approach for diverse population; viii) Lack of proper monitoring and evaluation mechanism and ix) New Government structures and change in responsibilities. There is need to address the challenges for effective communication for RETs promotion. Likewise, there is need to design communication content as per the need and background of the targeted audiences. There is strong need to apply awareness and education models that emphasise on various benefits of utilising RETs like time saving, health benefits, minimising labour, better education, among others.

Additionally, there is a gap between the end-users/market needs and concerns and implementing organisations. There is need of careful assessment of needs and capabilities of the end user while at the same time assessing already available renewable technologies to determine the suitability of these technologies. It is necessary to shift the promotion of RETs from being supply-driven towards being demand-driven and supporting empowerment at community level to decision makers.

5.2 Recommendations

There is need to design communication tools as per the access, preferences and capacity of the target audiences. Likewise, there must be communication mechanism to convey needs and voices of grassroots communities to the policy makers and planners. It is important to select communication channels/tools as per the objectives, resources and stages of awareness and project cycle as mentioned below:

- A communication plan must be prepared as an integral part of the programme or project design. The plan should be based on the need and capacity assessment of target audiences.
- Mapping of stakeholders and audiences is must while planning RET program/projects.
- Selection of communication channels should to be based on objectives, target audiences, budget and time availability.
    - Mass communication media is more effective among men while interpersonal communication is more effective to reach women and poor.
    - To sensitise and create awareness to large mass there is need to use social media, community FM radios, internet and print media like newspaper, posters, leaflets, pamphlets, etc. Mechanism should be made to aware journalists about new and pertinent issues on energy access particularly on green and inclusive energy. Development and use of mobile apps would be very useful for near future as use of mobiles has been increasing rapidly in rural areas.

- To convince the target audiences to adopt the technologies, use of interpersonal communication channels like community meetings, briefings, drama, demonstration and presentations is more effective, but it is little costly and time consuming.

- Content of awareness materials should be designed considering culture, language, capacity, knowledge and gender issues of the target audiences.
- Communication mechanisms for feedback and complain collection must be in place. The local governments, particularly rural and urban municipalities have mandate to promote small scale renewable energy. So it is necessary to involve them in all RETs promotion related communications and build their capacity and infrastructures accordingly.
- There must be inter-institutional co-operations, coordination and information sharing mechanism. There must be strong credible national database of RETs use status, potential energy sources and active supply chain actors.

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Annexes

Annex I: Matrix for Research

Research Objective	Research Question	Research Method	Source of Information
A. Tools and Strategy			
Obj.1. to explore the current communication tools used in Nepal in disseminating energy related information;	RQ 1: What are exiting communication tools and strategy to disseminate energy related information?	• Literature Review • Key informant interviews with the key stakeholders	• Reference and abstracts guide, content analysis report, web sites, policy documents, assessment reports, progress reports etc. related to the study. • Key Informants-Semi Structured Interview Questionnaire (IV.1)
Obj.6. to develop communication strategy for Green and Inclusive Energy.	RQ7. How have communication strategies improved understanding about RETs and communicate facts relating to it.	• Personal Interview • Interaction meeting • Contents analysis In-depth analysis of interview • FGD • Triangulation/Validation at National Workshop	• Key Informants-Semi Structured Questionnaire(IV.1) • Stakeholders-FGD Checklist(IV.2) • Workshop Participants
	RQ 8: How could communication be one of the priorities of Government to promote clean energy access?	• Personal Interview • Interaction meeting • Contents analysis In-depth analysis of interview • FGD	• Key Informants-Semi Structured Questionnaire(IV.1) • Stakeholders-FGD Checklist(IV.2)
B. Needs, Problems, Opportunities and Challenges			
Obj. 2. To identify the opportunities , problems and barriers on communication to promote RETs for grassroots mobilization;	RQ 2: What are current practices, opportunities, problems/barriers for promotion of RETs in diverse groups and grassroots mobilization?	• Personal Interview • Observation • In-depth analysis of interview • FGD	• Key Informants-Semi Structured Interview Questionnaire • Users-Household Survey /Structured Questionnaire (IV.3) • Stakeholders-FGD Checklist (IV.2)

Obj. 5. To explore the need of dissemination practices for promotion of RETs in diverse groups;	RQ 5. What is the current understanding of communication tools and means of coordination between and among National, Provincial and Local level.	• Personal Interview • In-depth analysis of interview • FGD • Opinionnaire • Validation at National Workshop	• Users-Household Survey /Structured Questionnaire (IV.3) • Workshop Participants
C. Investments			
Obj.4. To provide recommendations on effective communication tools which will maximize public awareness in the promoting of green and inclusive energy infrastructures/technologies development, and	RQ4: How can communication tools leverage maximum public awareness in promoting green and inclusive infrastructures/technologies development?	• Personal Interview • In-depth analysis of interview • FGD • Opinionative	• Key Informants-Semi Structured Questionnaire(IV.1) • Stakeholders-FGD Checklist (IV.2) • Users-Household Survey /Structured Questionnaire(IV.3)
D. Accountability and Capacity Building			
Obj. 3. to analyze the current practices and need for two way communication and accountability mechanism	RQ3. What are the communication practices and accountability mechanism in promoting RETs? RQ9. What are the capacity building initiatives in promoting RETs?	• Literature Review • Personal Interview • Analytical Framework • Content analysis • Web surfing • FGD	• Policy documents, assessment reports, progress reports etc. related to the study. • Key Informants-Semi Structured Interview Questionnaire(IV.1) • Web-pages • Stakeholders-FGD Checklist(IV.2)

Annex II: List of Organizations consulted

S.No.	Organizations	Name of Resource person	Designation
1	Badhigad Khola MHP	Gazar B.K	Secretary
2	Khamari MHP	Keshav Raj Pathak	President
3	Chherangakhola MHP	Ser Bdr Mall	Ex. President
4	Amilichhap CREE	Laxman Katiwada	Chairman
5	NACEUN	Narayan Gnyawali	Chairperson
6	World Bank	Robin Shrestha	
7	ADB		
8	NEFEZ	Sahaj Man Shakya	Chairperson
9	AEPC	Ram Prasad Dhital	Executive Director
10	AEPC	Krishna Chandra Poudel	Senior Officer
11	CRT	Gyanu Bista	
12	NEA		
13	Practical Action	Min Bikram Malla	Project Manager
14	Practical Action	Archana Gurung	Communications Officer
15	Indoor Air Pollution and Health Forum	Madhab Sharma	Coordinator
16	RECON	Guna Raj Dhakal	Chairperson
17	RECON	Purna Ranjitkar	
18	CRT	Purushottam Shrestha	Director

Annex III: Selected Sites for Field Survey

SN	Name of MHPs	Physical location (districts)	Local level (Municipality/ Rural Municipality)	States Province	Capacity (KW)	HH	Criteria		
							Project scale*	Road access	Ethnicity composition
1	Putpute – II	Sangja		4	98	834	L	Yes	Mix
2	Urja -1	Baglung	Rangkhani	4	26	273	S	Yes	Mix
3	Urja - IV	Baglung	Surkuwa	4	14	133	S	Yes	Mix
4	Malekhu Khola –II	Dhanding	Mahadevsthan	3	18	166	S	Yes	Mix
5	Daram khola	Baglung	Malama	4	50	475	M	Yes	Homogeneous (Magar)
6	Mid Grindi Khola	Baglung	Riga	4	45	337	M		Homogeneous (Magar)
7	Khamari Khola	Surkhet	Babiyachaur	6	55	620	M	No	Mix
8	Badighad Khola	Gulmi	Neta	5	100	912	L	Yes	Mix
9	Chherang a Khola	Tanahu	Baidi	4	35	190	S	Yes	Mix
10	Chane	Kaski	Ghandruk	4	35	25	S	No	Homogeneou

	Khola					0			s (Gurung)
11	Jhumsa Khola	Palpa	Mathagadi	5	30	310	S	Yes	Mix

- Above 75 KW – Large (L), 49-75 KW – Medium (M), Less than 50 KW - Small (S)

Annex IV: Selected CREEs for Field Survey

SN	Name of CREEs (Cooperative/Company)	District	States	Local level (Municipality/ Rural Municipality)	HHs	Ethnicity composition
1	Nawajyoti samudayik gramin vidhut upaqvokta samuha, Kusmishera	Baglung	4	Tunibot, Kusmisera	185	Magar/ Braman
2	Amilichap	Dhading	3	Siddalek	900	Mix
3	Gramin vidhut upavokta samiti , pakuwa Pakuwa	Parbat	4	Kusma Municipality	460	Mix
4	Gramin Purbhadhar thata Batabaran Bikash Mancha	Tanahu	4	Khaireni	1400	Mix
5	Naubasta	Banke	5	Naubasta	1300	Mix
6	Bela Gramin Bidhut Company	Dang	5	Bela	480	Mix

Annex V: Checklist for Focus Group Discussion (FGD)

1. Awareness/Knowledge about Renewable Energy Technologies
2. RETs use in the community (Electricity, Solar,Biogas,ICS,Wind)
3. RETs use in Cooking (Electricity, Solar,Biogas,ICS,Wind)
4. RETs use in Lighting (Electricity, Solar,Biogas,ICS,Wind)
5. Information receiving about RETs from (Print-News Paper, Pamphlet, Posters, Brochure ,Media-TV, Radio-National , Local FM,Social Media-Facebook, You tube, Concerned agencies (including local government bodies, community-based organizations)
6. Sources of information on RETS–Male-Female
7. At the community level which form of communication (media) has been the most effective for Women and DAG's?
8. At the community level who (men, women, DAGs) optimally utilizes the information disseminated through the different from of communication?
9. Types of info sought (Availability of different RETs, RET Promoters' accountability to the community Investment in RETs promotion, Services of related to RETs, Coordination between and among national, provincial and local level)
10. Shifting (transition) technologies from non-renewable to renewable one.
11. Problem/barrier to shift from non-renewable to renewable technologies
12. Sector's priority in communication to promote clean energy access
13. Are the communication practices in the Energy sector programs and projects inclusive?
14. At the community level have there been unintended benefits for women and DAG's from communicating renewable energy technologies?
15. Are there GESI related materials or GESI related trainings included in the communication packages created?
16. What do you think about reliability and accuracy of contents?
17. Is information received or sent in a timely manner?

Annex VI: Questionnaire Key Informant Interviews with the RET Promoting Institutions

A. Background Information

1. Name of respondent
2. Designation: Name of Organization
3. Organization Type:
4. Address:

……

B. Vision and Strategies for RET promotion and development

5. What vision does your institution emphasize?

……

6. Where do the RET fall into this larger picture of development strategy followed by your institution?

……

……

C. Coverage

7. How many types of RETs are you promoting with?

S. No.	Types of RETs	Capacity , kW	Address

8. What is the number of total users covered by these organizations?

S. No.	Renewable Energy Service Provider	VDC	Tole	Ward No.	HH

8.1 How is the structure of communication? Upward and downward Flow

8.2 Do the existing communication tools, strategies and the process of information dissemination consider the Gender and Social Inclusion aspects? If yes how?

8.3 How can we make the communications tools, strategies GESI friendly and also consider both top down and bottom up information flow?

8.4 Have the communication team or project staffs from different Energy related programs have any form of GESI related training or workshops?

D. RETs Promotion

9. Does your organization have prescribed policy for RETs promotion? Yes…… No……

If Yes, what are those?

……

10. Does your organization have RETs promotion strategy? Yes…… No……

If Yes, How have communication strategies improved understanding about RE and communicate facts related to RETs?

……

If No, How do you ensure effective communication to and from the users?

……

11. Does your organization have developed communication package for RETs promotion?

Yes……..No……..

If yes,

- What is the package?
- What are the contents of the package?
- When that package was implemented?
- What are their main objectives?
- Who are the primary audience of the package?
- Who are the secondary audience of the package?
- Which channels are used? a) Print b) Radio c) Media d) Social Media e) Others?
- Is this package in use till now?
- Where the package is being used?
- How effective? a) Reach b) types of message c) adaptability d) cost e) possibility of use
- Problems/Barriers
- Have you measured success/failure? Is there any limitation of not measuring it?

12. What steps do you follow to promote RETs?(Training, Subsidy etc.)

……

13. What are the supports provided to promote RETs?

……

14. Are there adequate tools and techniques in promotion of RETs? If No, what should be?

……

15. What are the communication tools and means of coordination/communication at different levels between national, provincial and local authorities?

……

16. How were investments made in communication tools to provide information on RET technologies?

……

17. Is communication one of the priorities to promote clean energy access by the GoN?

Yes…….. No……..

If yes, what are the supporting *initiatives?*

……

……..

18. What are the communication practices and accountability mechanism in promoting RETs?

……

E. Suggestions

19. What can be the best communication tools in disseminating information of clean energy services to its diverse population?
……
……

20. Does your organization have any plan to support the promotion of RETs further?
Yes…….. No……..

If Yes, How?

By	**How?**
By diversifying the types of services being offered	
By expanding the scope for RETs	
By helping consumers to change behavior in using RETs	
Others (Specify)	

21. Any other comments and suggestions to enhance the effectiveness of RETs:

……
What constraints they should overcome?

……

Annex VII: Household Survey Questionnaire[3]

Address of Interviewee

a) Household Number:
b) District:
c) Municipality/Rural Municipality/Ward:
d) Village:
e) Code:
f) Interviewer:
g) Date of Interview:

1. General Information about the Household

1.1 Name of Respondent:

1.2 Gender of Respondent:

1. Male
2. Female
3. Other

1.2 Age of Respondent

1.4 Which caste/ethnic group do you belong to?

1. Bramhin
2. Chhetri
3. Janjati
4. Dalit
5. Chepang

1.5 How many people are in the household?

(Fill in according to age.)

1. 0 - 6 years: ……Persons
2. 7 - 17 years: …….Persons
3. 18 – 60 years: ……..Persons
4. 61 years & over: ……Persons

5. Total:…… Persons

1.6 How many members in your family

1. One
2. Two
3. Three
4. Four
5. Five
6. Six

1.7 Literacy level of Family

1. No of Illiterate

[3] This household survey questionnaire was designed to collect information for all three separate researches (communication, financing and good governance) so only few questions from this set have been used for analysis in this financing research.

2. No of Literate
3. No of Under SLC
4. No of SLC
5. No of +2
6. No of Bachelors
7. No of Masters and above

1.8 Major Sources of Income

1. Agriculture
2. Livestock
3. Service
4. Business
5. Remittance
6. Other (specify)

1.9 Could you please tell us your annual income?

1. Below Rs. 100,000
2. Rs. 100,000- Rs. 200,000
3. Rs. 200,000- Rs. 300,000
4. Rs. 300,000- Rs. 400,000
5. Rs. 400,000 – Rs. 500,000
6. Rs. 500,000 above

2 Energy Related Information

2.1 :Source of Energy and use

Source of Energy	Unit	Rate / Unit	Consumption / Month	Energy Use						Remarks
				Cooking	%	Lighting	%	Heating	%	
Fuel Wood	Bhari									
Kerosene	Liter									
Liquid Petroleum Gas	Cylinder									
Electricity	Unit									
Battery	Pair									
Straw and/or Dung	Bhari/Doko									
Other (Specify if any)										

2.2 What kind of appliances do you use? (Fill in Number and Wattage)

FL/CFL	ICAN	Iron	Computer	Rice Cooker	Radio/VCR	TV	Refrigerator	Pumps/	Fan	Heater	Other

								Tools			

a) FL=Florescent Lamp, ICAN=Incandescent Lamp, CFL=Compact Florescent Lamp, PP=Power Point

2.3 Would you be willing to pay more for electricity if more reliable service will be provided (yes or no)? : Yes No

2.4 Type of system you would like to buy in the near future:

a. Washing Machine
b. Micro-Oven
c. Electric Sewing Machine
d. Other

2.5 How much did you spend on energy resources last month?

	Fuel Wood	Kerosene	Diesel/Petrol	LPG	Electricity	Others
In Rupees						

3 Information Related to Renewable Energy Technologies

3.1 Do you know about the RETs?

1. Yes
2. No

3.2 What types of RETs you are using at house? (tick all those apply)

1. Electricity
2. Solar PV
3. Wind
4. Bio-gas
5. ICS

3.3 Do you want to shift the technologies from non-renewable to renewable one?

1. Yes
2. No

3.4 If yes, in what technologies?

1. Electricity
2. Solar PV
3. Wind
4. Bio-gas
5. ICS

3.5 What is the problem/barrier to shift from non-renewable to renewable technologies?

1. Information about RETs
2. Finance
3. Availability of Appliances
4. Difficulty in handling

4. Communication in RETs

4.1 Which channels of communications do you use to receive message and information related to Renewable Energy? (tick all those apply)

1. Newspaper/Magazine
2. Brochure/Pamphlets
3. Radio
4. Visual Aids
5. Training/workshops
6. Reports/Case Studies
7. Information Communication Technology (ICT)
8. Information sharing in community
9. Traditional tools

4.2 Have you listen to the following to receive messages and information on Renewable Energy Technologies? (tick all those apply)

1. Public Service Announcements
2. Audio materials
3. Radio drama
4. Radio News
5. Report

4.3 Have you watched the following to receive messages and information on Renewable Energy Technologies? (tick all those apply)

1. TV program
2. TV Commercials
3. Talk show
4. Telefilm
5. Documentary videos
6. Video Projection (Narrow casting)

4.4 Have you used the following tools to receive messages and information on Renewable Energy Technologies? (tick all those apply)

1. Telephone communications
2. SMS messages
3. Internet
4. Website
5. Social media

4.5 What are the existing practices of sharing information within community members related to Renewable Energy Technologies? (tick all those apply)

1. Tea shop chat
2. Women groups chitchat (*MahilaBhetghat*)
3. Information through community leaders, teachers, health workers
4. School students
5. Community meetings
6. Festivals
7. Special events

4.6 What are the traditional tools still in practice in your community for communications? (Traditional tools refer self-styled indigenous methods practiced by the community in reaching out message to people)

1. Sarangi
2. Sankhafukne
3. Katwal karaune system
4. Feasts/Festivals
5. Community meetings
6. Special events
7. Others (specify)…….

4.7 Have you participated in RE related program and Training ?If yes, what , who provided and duration?

4.8 Do you own a mobile phone? (If answer is 'No' go to Q. 20)

1. Yes
2. No

4.9 How many phone connections (SIM cards) do you have? (If answer is 'One' escape next question)

1. One
2. More than one

4.10 What type of mobile phones do you use?(Ask them to show the mobile phone/s)

1. Bar phone
2. Smart phone
3. Both

4.11 Do you have Internet access in your mobile phone?

1. Yes
2. No
3. Don't know

4.12 Rank the communication tools which you use mostly as number 1 and least as number 9 in receiving information/message of Energy Sector Program?

1. Newspaper/Magazine
2. Brochure/Pamphlets

3. Radio
4. Visual Aids
5. Training and workshops
6. Reports
7. Information and Communications Technology (ICT)
8. Information sharing in community
9. Traditional tools

4.13 Are you satisfied with the communication tools used by Energy Sector Program to give message and information related to you? If No, Why are you not satisfied, what are the reasons?

5. Gender and Social Inclusion

5.1 Who decide on selection of RETs

1. Household Head
2. Father In Laws
3. Mother in Laws
4. Husband
5. Self

5.2 Do you avail time to read newspapers/magazine? If yes how many hours?

1. Half an hour
2. One hour
3. Two hours
4. More than two hours

5.3 Do you avail time to listen radio program ? If yes how many hours?

1. Half an hour
2. One hour
3. Two hours
4. More than two hours

5.4 Do you avail time to watch Television Program? If yes how many hours?

1. Half an hour
2. One hour
3. Two hours
4. More than two hours

6. Comments and Suggestions

6.1 What types of information you need to have regarding RETs?

6.2 What time is appropriate for you to get information regarding RETs?

6.3 What channel do you thing appropriate for you?

6.4 What frequency of messaging you thing appropriate?

6.5 What further opportunities the RETs can take advantage of?

6.6 What constraints the users should overcome?

Annex VIII: List of Participants of Green and Inclusive Energy Access Workshop

Date: 24th January 2018

Venue: Annapurna Hotel, Kathmandu, Nepal

S.No	Name	Organization
1	Anil Shrestha	Smart Power Pvt. Ltd.
2	Bhanu Bhandari	Smart Power Pvt. Ltd.
3	Anocita Pun	Adhibara Neplai Halte Kagaz
4	Hemkumari Pun	Adhibara Neplai Halte Kagaz
5	Bhume Lama	Lama Metal Seat Udhyog
6	Aadit Malla	MinErgy Pvt. Ltd.
7	Guna Raj Dhakal	RECON
8	Asmita Sodari	Husk Power Nepal
9	Nabin Panthi	NMB Bank Ltd
10	Reesab Raj Acharya	NBPA
11	Sahaj Man Shrestha	NEFEJ
12	Min Bikram Malla	Practical Action
13	Madhab Sharma	IAPHF-Nepal
14	Pooja Sharma	Practical Action
15	Prem Sagar Subedi	UNCDF
16	Ganesh Shah	Former Minister
17	Subarna Kapali	ABF
18	Chudamani Joshi	Embassy of Finland
19	Xu Youde	Yunnan Dalitida Energy Techiniuea Research
20	Xiong Ying	Yunnan Dalitida Energy Techiniuea Research
21	Bibek Chapagai	Royal Norwegian Embassy
22	Roshan Manandhar	Practical Action
23	Yadav Shaha	KhokhuG
24	Ganesh Ram Shrestha	ID/CRTIN
25	Kiran Gautam	SEMAN
26	Deepak Bdr. Mahara	RRSC
27	Bharat Khadka	MRC/N
28		
29	Milabh Shrestha	FNCCI
30		WWF
31	Tripeshwar Purbe	NEA
32	Ashish Raumal	OMCN
33	Biruparshya Dikchit	Practical Action
34	Prabhu Buddhathoki	NPC
35	Rago B. Thapa	AEPC
36	Apekshya Shrestha	Practical Action
37	Suvekshya Shrestha	Practical Action
38	Manoj Khadka	DFID

S.No	Name	Organization
39	Gopal P. Ghimire	Practical Action
40	Pal Pasa	Practical Action
41	Sundar Bahadur Khadka	AEPC
42	Padam Dhahal	NBPA
43	Ela Thapa	NBPA
44	Deepak Adhikari	DPA
45	Aryal Niraula	Gham Power
46	Rijan Shrestha	EU
47	Nabaraj Dhakal	AEPC
48	Mahendra Kumari	Nisi Laghu Uddhami Sisno Powder
49	Kumaya Gharti Magar	Nisi Laghu Uddhami Sisno Powder
50	Dhan Kumari Gharti Magar	Nisi Laghu Uddhami Sisno Powder
51	kumari Pun	Nisi Laghu Uddhami Sisno Powder
52	Man Kumari Gharti Magar	Nisi Laghu Uddhami Sisno Powder
53	Bionod Acharya	Nisi Laghu Uddhami Sisno Powder
54	Yogendra Shah	ECCA
55	Tapendra Chand	PEEDA
56	Sunhuli Singh Kunwar	Christian AID
57	Prof. Krishna R. Shrestha	CEEN
58	Mukunda Kalikote	Reporter Club Nepal
59	Dil Raj Khanal	Reporter Club Nepal
60	Dr. Purushottam Shrestha	CRT/N
61	Krishna Adhikari	RSS
62	Dharma R. Bista	Practical Action
63	Prabina Lama	Practical Action
64	Binod Shrestha	GIZ
65	Gaurav Dahal	WWF
66	Keshab Poudel	Spotlight
67	Narayan Guawali	NALEUN
68	Thakur Pd. Adhikari	TP Adhikari & Associate
69	Raj Kumar Adhikari	TP Adhikari & Associate
70	Moushumi Shrestha	Shreenagen
71	Monica Chitrakar	Practical Action
72	Bhoj Kumar Rai	Practical Action
73	Diwakar	HTV
74	Buddha Maharjan	Practical Action
75	Rabindra	Practical Action
76	Dinanath Bhandari	Practical Action
77	Bhairaja Dewali	Practical Action
78	Kriti Bidhya	PAC
79	Umang Bhattarai	PAC
80	Purna N. Ranjitkar	
81	Ayush Acharya	WindPower Nepal Pvt. Ltd.

S.No	Name	Organization
82	Devashis M. Shrestha	WindPower Nepal Pvt. Ltd.
83	Vabish Karki	WindPower Nepal Pvt. Ltd.
84	Ishwor Lal Raj Bhandari	DCRDC-Baglung
85	Lakeshwar Pokhrel	ECCA/Future Now Pvt.
86	Sarmila Rayamaji	NMHPA
87	Gaurab K. Adhikari	Nepachi Wanda
88	Shreya Jhakali	NEFEJ
89	Shisher Shrestha	Sunfarmer
90	Manjari Shrestha	Practical Action
91	Dilli Ghimire	NEF
92	Bal Ram Shrestha	BSP-Nepal
93	Gokul Gautam	REMREC
94	Vishwa B. Amatya	Independent Consultant
95	Biraj Gautam	PEEDA
96	Reshu Bashyal	UNDP/SEforALL
97	Shital Regmee	JVS
98	Lisa Shrestha	RW
99	Raja Ram Pote Shrestha	WHO Nepal Office
100	Surya P. Hada	
101	Kiran Gautam	WECS
102	Kushal Gurung	WindPower Nepal Pvt. Ltd.
103	Roshan Parajuli	RETS
104	Suman Thapa	Media
105	Karuna Bajracharya	Global Alliance For Clean Cookstoves
106	Gyanendra Raj Shrestha	CRTIN
107	Tek Bdr Balayar	RDSC
108	Achyut Subedi	Practical Action
109	Shruti	UNDP
110	Nawaraj Sanjel	ENEP/KU
111	Suyesh Rajpati	MinErgy
112	DR. Ramesh Maskey	KU
113	Dilman Singh Basnyat	PAP
114	Prajwal Shrestha	Practical Action
115	Dr. Govinda Nepal	ISSR
116	Ishrat Shabnam	Practical Action Consulting
117	Shristi Kafle	Xinhua News Agency
118	Santosh Neupane	Nagarik Daily
119	Ram Pd. Dhital	AEPC
120	Gopal Pd. Bhhata	NID
121	Mahesh P. Acharya	NEF
122	Prakash Tamang	Nepchiulanda
123	Sambarddha Pradhan	Sunfarmer
124	Devenda Aryal	NEF

S.No	Name	Organization
125	Indira Shakya	CRT/N
126	Naresh Sharma	MOPE
127	Arjun Dhakal	NEFEJ
128	Anita Bohara Thapa	GIZ Endev
129	Archana Gurung	Practical Action
130	Jay Shrestha	OMCN
131	Ahana Shrestha	Practical Action
132	Bhim Kumar Shrestha	Practical Action
133	Sanjib Chaudhary	Practical Action
134	Anuj Dhoj Joshi	Practical Action
135	Sachin Sapkota	Practical Action
136	Yelisha Sharma	Practical Action
137	Nagendra Chaudhary	Practical Action
138	Khommaya Thapa	Practical Action
139	Raju Maharjan	MOEn
140	Niraj Tamang	Himalaya-TV
141	Thirtha Bhatta	Practical Action
142	Dinesh Rai	Practical Action
143	Bipin Basnet	PAC
144	DR. Ram Manohar Shrestha	AIT

Annex IX: Notes from consultation with KIIs

AEPC	Communication Activities	Communication tools	Challenges	Remarks
	Communication focus on following activities a. Information on available technology b. Subsidy provision for RETs c. Success Story from RETs	• Radio • Print media • Social Media(face book page) • You tube Channel • Press meet • Exhibition • District level School quiz competition • Photography Contest • Websites • News Bulletin • Print media	• Absence of feedback mechanism from target communities • Absence of impact analysis • Absence of overall monitoring and Evaluation of RETs.	• Communication strategy is in Preparation phase
NEFEJ	Communication Activities focus on the importance of renewable energy sources especially ICS, Biogas, Briquette and Solar home systems.	• Radio • Television • Documentary • Magazines • advocacy • Website	• Absence of strong mechanism in feedback collection and addressing	• No communication strategy is prepared
CRT/N	Communication activities involve in capacity building and demonstration of ICS and Bio-mass fuels at community level.	• Radio • street dramas • Appointing brand ambassador • Inclusion of renewable energy into school curriculum (12-15 schools of south lalitpur) • Mass rally • website	• Absence of feedback system	• No communication strategy is prepared
Winrock International, Nepal	Awareness program in collaboration with partners in Project sites through • Orientation Training • Micro credit	• video Documentary • Success story • Manual • Media person • orientation	• Current trends of communication in RETs promotion is not sufficient due to lack	• No communication strategy is prepared

	• Subsidy	Booklet	of co-ordination especially between AEPC, Ministry level and local governments	
GIZ	Promotional activities in RETs through • Training • Micro credit	• video Documentary • Success story, Manual • Media person • orientation Booklet • Brochure • Pamphlet • Toolkit • Posters		No communication strategy is prepared

Annex X: Recommended Strategies for Efficient Communication to Promote RETs

Table 10.1: Communication at institutional level (Central and Local Level)

Objective of communication plan: To capacitate and mainstream communication modality within project cycle for effective promotion of RETs, it is recommended to take measures Target Audience: Institutions at Central, Local and Community Level	
What	**How**
Policy/Legislation • Division of roles and responsibilities of implementing partners in RETs promotion and clearly communicate to all partners • Strengthen policies for central/local government's plan and capacity to respond to RETs • Communicate and advocate the necessity and requirements about RETs so that it is adhered to National Planning of Nepal in the context of energy planning. • Increase Government/Donors commitment to local partners (NACEUN, CSOs/CBOs, Users Groups) on RETs promotion program at central and local level. • Enhance GESI policies, awareness and proactive outreach to vulnerable and excluded groups regarding RETs • Enhance support to central/local government to response to RETs through facilitating provincial laws and regulations to reflect effective strategic response. • Strengthen implementation capacity of Municipality and Rural Municipality on RETs • Enhance meaningful participation of stakeholders in decision making on RETs program. • Empowerment of CSOs/CBOs/Users Groups for policy development at local level	- Campaigns and Awareness Programs - IEC Materials - News Letters - Training, Workshop and Interaction Programs - Meetings and Delegation
2. Capacity Building • Raising awareness of the resource available to government (NEA/AEPC) and Stakeholders and promote a common understanding of local implementing partners on RETs • Increasing efficiency of implementing partners to support of National response; • Facilitate formulation and strengthening existing local level network of energy users • Strengthen the functionality of Energy Service Center within Local Municipality where local partners work together in a coordinated manner towards a common recognized and agreed goal of RET promotion. • Strengthen implementation capacity of Municipality and Rural Municipality on RETs • At the Community Level enhance the capacity of CSOS, CBOs, and Users Groups in RETs implementation.	- Training - Workshop - Interaction Programs - Exposure Visit - Sensitization Camps - Publication - Campaigns and Awareness Programs
3. Communication and Knowledge Management	- Campaigns and

• Facilitating for local level networks • Develop IEC materials at local level, Basic School Level and disseminating through curriculum at Basic School level and at community level. • Empowerment of CSOs/CBOs/Users Groups for social mobilization at local level	Awareness Programs - Meetings and Delegation - Training, Workshop and Interaction Programs
4. Monitoring and Evaluation • Increase accountability of NEA, AEPC and other Implementing partners • Identify resource gaps within effective costing, budgeting and tracking of resources and increase mobilization of local and national resources • Enhance meaningful participation and engagement of CSOs/CBOs/User's Groups in the RETs promotion. • Strengthen monitoring of effectiveness of RETs Program through third party monitoring system, Public Audit and Public Hearing.	- Public Dialogue - Public Audit - Public Hearing - Social Audit - Management Audit - Exposure Visit

Table 10.1: Communication Plan at the Community Level

Objective of communication plan: To increase awareness and understanding of people at the community level through different communication tools and interventions to internalize use of RET Target Audience: Community	
What	**How**
1. Awareness • General Awareness and Information at the community level • Information regarding RETs (Micro Hydro, Solar Photovoltaic, Bio-gas, ICS) • Importance and Benefits (intended and unintended) Technical Awareness • Information regarding Installation, Handling, Efficiency • Spare parts Availability • Trainings on Repair and Maintenance Financial Awareness • Information regarding Cost and Market • Information regarding Loan and Subsidy	- Community Meetings and informal channels of communication - Awareness Camps and Campaigns, - Visual Materials - Brochure, Pamphlet, - Mass Media Mobilization (FM/Community Radio), - Exposure Visits - Sensitization Camps and Awareness Camps - Handbook and Guidelines - Training/Workshop - Onsite Coaching - Coordination and Networking with End Users - Meetings and Facilitated Programs - Social Media Platforms
2. Community Need Assessment (Bottom-up approach of communication) to understand the need of the community in terms of RET needs and understanding	- Feasibility Study - Research and Survey
3. Monitoring and Evaluation • Impact Assessment of RET related programs and interventions at the community level	- Impact Assessment - Social Audits - Public Dialogue - Public Audit - Public Hearing