

Gender review of national energy policies and programmes in Bhutan

Improving gender-inclusive access to clean and renewable energy in Bhutan, Nepal and Sri Lanka



Japan
Fund for
Poverty
Reduction



ENERGIA
INTERNATIONAL NETWORK ON
GENDER AND SUSTAINABLE ENERGY



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Preface

The Improving Gender-Inclusive Access to Clean and Renewable Energy in Bhutan, Nepal and Sri Lanka is Asian Development Bank (ADB) supported project (JFPR Grant-9158 REG). The project aims to increase rural poor women's access to affordable and reliable clean energy sources and technologies in selected project sites in Bhutan, Nepal and Sri Lanka.

This is a report of a gender review of the energy sector policies and programmes undertaken in Bhutan, as part of the Project. It assesses the gender inclusiveness of the energy sector at three levels: policy, programmes and organizations.

The gender review in Bhutan was undertaken by Tshering Choden, supported by Soma Dutta and Tshering Phuntsho.

The report was reviewed by Sheila Oparaocha, Govind Kelkar and the Department of Renewable Energy, Ministry of Economic Affairs. The team acknowledges the support from the Department of Renewable Energy, Ministry of Economic Affairs, the Bhutan Power Corporation, the community of Zhemgang and other organizations and individuals consulted.

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Abbreviations

ADB	Asian Development Bank
BAOWE	Bhutanese Association of Women Entrepreneurs
BLSS	Bhutan Living Standard Survey
CRT/N	Centre for Rural Technology Nepal
CSOs	Civil Society Organizations
DDG	Decentralized Distributed Generation
DMCs	Developing Member Countries
DRE	Department of Renewable Energy
DTs	Dzongkhag Tshogdes
EDP	Economic Development Policy
FYP	Five Year Plan
GLOFs	Glacial Lake Outburst Floods
GNH	Gross National Happiness
GNHC	Gross National Happiness Commission
GTs	Gewog Tshogdues
ICIMOD	International Centre for Integrated Mountain Development
IFAD	International Fund for Agricultural Development
JFPR	Japan Fund for Poverty Reduction
KIs	Key Informants
PHED	Public Health Engineering Division
PPMS	Project Performance and Monitoring System
MAGIP	Market Access and Growth Intensification Project
MoAF	Ministry of Agriculture and Forests
MoEA	Ministry of Economic Affairs
MoLHR	Ministry of Labour and Human Resources
NCWC	National Commission for Women and Children
NFE	Non-Formal Education
NGOs	Non-governmental Organizations
NPAG	National Plan of Action for Gender
NTFPs	Non-timber Forest Products
NWFPs	Non-Wood Forest Products
RE	Renewable Energy
REDF	Renewable Energy Development Fund
RGoB	Royal Government of Bhutan
RSAHP	Rural Sanitation and Hygiene Programme
RSPN	Royal Society for Protection of Nature
SARD	South Asia Department
SFED	Social Forestry and Extension Division
SNV	Netherlands Development Organization
UNDP	United Nation's Development Programme
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund

Executive Summary

The Improving Gender-Inclusive Access to Clean and Renewable Energy in Bhutan, Nepal and Sri Lanka is Asian Development Bank (ADB) supported project (JFPR Grant-9158 REG). The project aims to increase rural poor women's access to affordable and reliable clean energy sources and technologies in selected project sites in Bhutan, Nepal and Sri Lanka.

This is a report of a gender review of the energy sector policies and programmes undertaken in Bhutan, as part of the Project. The report reviews energy sector policies of Bhutan from a gender lens and documents good practices in incorporating pro-poor and gender-related aspects in energy sector policies, laws and regulations. Based on these, it provides recommendations for how energy programmes can mainstream gender more effectively and ensure economic development for women's equality and empowerment. The review was carried out through desk studies, and discussions with representatives of select stakeholders in the energy sector.

Key findings: National gender and development scenario

Among the South Asian countries, Bhutan is regarded as having a high level of gender equality in comparison to others. On the Social Institutions and Gender Index (SIGI), Bhutan ranks second after Sri Lanka. Adult women in Bhutan have a lower mortality rate (194 per 1000 adults) than men (256 per 1000) in 2009, and the country has a positive sex ratio of 1.04 (male to female births). Bhutan's first Gender Pilot Study (2001) showed that women in Bhutan do not face overt discrimination, and institutionalized forms of discrimination against women do not exist.

Nevertheless, the Bhutanese women do face challenges: they lag behind in areas such as politics and decision-making, tertiary education and the economy, with the rural women being more vulnerable. Literacy rate among women is lower; they are under-represented in the Parliament (5 percent after the July 2013 elections) and among the elected representatives at local government level (7 percent); unemployment continues to be higher for women (4.5 percent) than for men (1.8 percent) and constitute 70 percent of the unemployed population. Rural women are inadequately represented in decision making forums in community level groups although they make up the majority in group membership.

The Royal government of Bhutan (RGoB) prepared the National Plan of Action for Gender (NPAG) to provide a national framework for gender mainstreaming in all development sectors covering the period 2008-2013. Gender is a cross cutting theme in the 11th Five Year Plan. The 11th FYP plans that all concerned sectors be made responsible for addressing gender gaps by integration into their plans and programmes on the basis of gender analysis. Subject to relevance, laws, legislations and policies will be reviewed from a gender perspective; Gender Focal Points will be established; a gender responsive budget strategy will be implemented; and the institutional capacity of the National Commission for Women and Children will be enhanced. Each sector shall mainstream gender issues while formulating the Eleventh Plan and strengthen the collection of sex-disaggregated data.

Gender in energy sector policies and programmes

In the energy sector, the thrust of national energy policies has been on electrification. And by the end of 2013, the government of Bhutan aims to achieve 100 percent electrification in the country, advancing a target previously set for 2020. Although there are no specific pro-poor and gender equality promotion and achievement measures committed by the Royal Government of Bhutan in its energy sector policies; the government's commitment to 100 percent electrification of all of Bhutan by the end of 2013 in itself can be seen as a pro-poor and gender sensitive strategy. Rural electrification is seen to bring about improvements in the lives of men and women. However, despite the government bearing connection fees, households still have to bear internal wiring costs, monthly

bills, and maintenance fees, which raises affordability issues especially for the single female headed households and households of elderly and aged persons.

For cooking, while majority of urban households use electricity or gas, almost half the rural population continues to rely on firewood. Indeed 91 percent of the energy demand from household sector is met by biomass, remaining 9 percent is accounted for by LPG, electricity, and kerosene. In the cooking energy sector, improved cookstoves and biogas plants have been disseminated, albeit with limited success.

A review of the energy sector policies indicates that gender equality has not been addressed substantively in the policy framework. The reference to gender/ women in these policy documents is non-existent. Besides the policy documents, the recently prepared “Bhutan Energy Efficiency Baseline Study report 2012” to facilitate the formulation of a National Energy Efficiency Policy, does not mention anything on gender or women.

Currently, the most relevant renewable energy policy in Bhutan is the Alternative Renewable Energy Policy 2013 which was developed with support from ADB. Opportunities for including pro-poor and gender considerations in the policy lie in the following provisions:

- The policy has a provision for enabling, encouraging and facilitating both public and private sectors. There is hence a scope for women’s involvement in renewable energy activities.
- The policy highlights the need to develop RE Master Plan for each of the RE technologies by mapping capacity, generation potential and cost of generation by location across the Kingdom; here also pro-poor and gender considerations can be taken into account.
- Research & Development on renewable needs to ensure that RE products and services are pro-poor and incorporate gender considerations.
- The Policy states that the Nodal Agency (i.e. the DRE) is mandated to prepare Renewable Energy Development Fund (REDF) management guidelines, rules and regulations within one year from the issuance of the RE Policy in consultation with identified financial institutions. Special pro-poor and gender provisions can be integrated in the administering and managing of the newly created (REDF), this can be done through consulting with CSOs that are working at the grass roots in the field of gender and energy (such as Tarayana Foundation).
- Since there is the provision to develop appropriate subsidy and support mechanisms to make RE a viable energy source, the support to people living in extreme poverty (including single female headed households) need to be encouraged.

A review of select energy programmes revealed that renewable energy and electrification have had a positive impact on women’s empowerment by balancing the gender roles and control over financial resources. With electricity, women spend less time collecting fuelwood. Time saved is used to generate income and participate more actively in decision-making processes and other community and social activities. Electricity also has a considerable impact on women’s mobility, freedom in using income and savings, utilization of credit, knowledge about gender inequality issues, household work plans according to convenience, changes in attitude in terms of reducing health care disparities, and years of schooling. A 2010 ADB evaluation reported significant improvement in women's decision making on issues related to health care and education but not regarding finances. Furthermore, access to electricity empowers women through health, education, gender equality, and domestic violence awareness programs on television. Some of the good practices and lessons learned include:

- Involving local community including women representatives, from the beginning of the project creates local ownership and is critical to the success of the project as well as to ensuring sustainability on a long term basis.

- Working with relevant local CSOs working on women's empowerment (such as the Tarayana Foundation) has proven to be effective in terms of up-scaling and sustainability.
- Aligning donor efforts with government plans. Projects are likely to be more successful if they are aligned with national and sectoral policies and priorities.
- Working with women groups for better encouraging meaningful participation in project activities as active development actors can lead to women's empowerment and to project sustainability.

Opportunities and recommendations

Recommendations: Strategies to strengthen women and reducing gender inequalities

Being the primary energy producers and users for the household, it is a globally accepted that poor women particularly in rural areas continually face energy-related hurdles, including having to collect wood and the time and labour this requires and health problems from burning and collecting wood. Despite this reality, the main energy related policies in Bhutan including the recent Alternative Renewable Energy Policy 2013 which will serve as the main guiding policy for any renewable energy related interventions does not have any gender or pro-poor considerations. Some of the opportunities for gender mainstreaming present currently in the Bhutan energy sector are as follows:

❖ *Include gender issues in the rules and regulations of the energy policy*

Since the development of the rules and regulations for the implementation of the Alternative Renewable Energy Policy 2013 is currently underway, it provides an opportunity to ensure that gender and pro-poor considerations are integrated in the rules and regulations which will eventually guide the implementation of the policy.

Gender and pro-poor considerations can also be integrated into the proposed Master Plan for Renewable Energy Technologies; and in the Formulation of energy efficiency policy and Energy Efficiency rules and regulations; that are included in the draft 11th FYP of the DRE.

Specifically, energy infrastructure programme documents should set out explicit objectives for women's energy access, especially disadvantaged groups such as female headed households, addressing issues affecting women in socio economic surveys prior to implementing energy projects, participation in managerial and decision making, and labour mobilization. Where socio-economic studies incorporating gender concerns are done prior to implementation, there should be clear mechanisms for linking these to programme design. Programme documents should also specify time frames, budgets and human resources needed to achieve this, including training of personnel, and appropriate implementation and organizational procedures.

❖ *Ensure participation of women in energy sector planning*

Stipulate targets for representation of existing women's associations and women's NGOs in energy policy planning through public consultations, and provide leadership and confidence building training to these organizations to ensure their effective participation in the public consultations.

It would be useful for DRE to engage with relevant stakeholders including the NCWC and local NGOs who are also active in the energy sector and in promoting women's equality in Bhutan (such as Tarayana) which can result in energy specific gender and pro-poor considerations that need to be included in the policy.

❖ *Provide women with energy-related information and training*

Involve women in training on technical and business development aspects of energy projects, and ensure that they have access to information on available energy options and provisions. Alternative communication channels may need to be employed for dissemination of information to women, especially in remote locations, for example, internet cafes, rural radio, women rural development societies etc.

The ADB funded Solar Warriors project and the “Advancing Economic opportunities of Women and Girls” provide some insights and lessons into training women, which is relevant for future activities:

- Consulting community leaders in selection of participants
- Working with local CSOs terms of up-scaling and sustainability
- Formation and working with self-help groups, especially in the area of income generating activities
- Building on already existing skills (Basic tailoring program; Hairdressing; Basic embroidery program; Basic electrical home appliances repair program)
- Use of local institutions and local graduates from the Technical Training Institutes in providing training to the local community

❖ *Build capacity of energy sector institutions*

The discussion with the DRE personnel revealed that to some extent, sex disaggregated data is collected during the implementation of energy related activities. However, this disaggregated data is not really used due to the limited capacity of the implementing institutions. Therefore, it is recommended that a workshop on gender mainstreaming in the energy sector be carried out for implementing institutions.

The gender workshop should include sessions on gender issues and gaps relevant in the context of Bhutan, specific issues that need to be addressed, links between these and the energy sector in terms of how energy sector interventions can addresses some of the gender gaps, share good practices in gender mainstreaming from energy and other sectors in Bhutan, identify specific entry points and provide tips on integrating gender in their work.

In particular the workshop can focus on the following based on the mandates of one of the key implementing institutions in the energy sector in Bhutan the BPC, including its social mandates:

- To ensure that both women and men equally benefit from the BPC electrification schemes
- To ensure that both women and men equally can take part in the BPC activities
- To ensure that all trainings/seminars/workshops organized by BPC are conducted in a gender responsive manner

This workshop can provide a forum for dialogue on gender between the government institutions and the civil society and it is suggested that gender specialists from the NCWC and local NGOs (engaged in gender work such as Tarayana and RENEW) be invited to the workshop.

Recommendations for integration of gender into ADB’s energy sector work in Bhutan

ADB’s gender policy (ADB, 1998), the Gender Plan of Action (ADB, 2007) and the gender, law and policy toolkit (ADB, 2007) reiterate ADB’s commitment on mainstreaming gender and it provides the basis for gender mainstreaming in all of ADB’s projects and programmes. In Bhutan, ADB’s gender mainstreaming policy can be concretized with the development of a gender mainstreaming strategy for the energy sector given ADB’s actively support in this sector. This will:

- enhance ADB’s overall goal in reducing rural poverty and promoting inclusive growth in Asia and the Pacific;
- strengthen the development effectiveness of all ADB supported operations ensuring that gender and pro-poor being fully integrated into the planned project activities;
- ensure that both women and men (from all segments of society) equally participate in and benefit from project activities;
- an enabling environment is created for effective gender and pro-poor mainstreaming in ADB projects in Bhutan; and
- the capacity of project staff and other relevant stakeholders to understand and address gender and pro-poor aspects in their work and accountability is enhanced.

❖ *Assist RGoB to mainstream gender in the sectoral plans for 11th FYP*

ADB’s greatest opportunity lies in the special gender considerations that are outlined in the 11th Five Year Plan guidelines issued by the GNHC which is required to be used by all Ministries and departments when drafting their 11th FYP. It highlights the following:

- Concerned sectors shall be responsible for addressing gender gaps by integration into their plans and programmes on the basis of gender analysis. The Gender Responsive Budget Strategy shall be developed and implemented to facilitate the conduct of gender responsive activities. Subject to relevance, laws, legislations and policies will be reviewed from a gender perspective.
- The network of Gender Focal Points will be effectively used to achieve the results outlined in the Plan, and the institutional capacity of the National Commission for Women and Children will be enhanced.
- Each sector shall mainstream gender issues while formulating the Eleventh Plan and strengthen the collection of sex-disaggregated data.

Thus, using the GNHC guidelines as a basis, the ADB should support the DRE in making sure that financial resources are allocated for gender mainstreaming in the energy sector in Bhutan. Specific capacity building on Gender responsive budgeting would raise the awareness on the importance of integrating gender in the planning, implementation and monitoring of the energy projects. For this, there is the possibility of either teaming up with UN or if possible ADB can take the lead in organizing a specific gender responsive budgeting for the energy sector.

❖ *Sector coordination and alignment with other gender and energy projects*

Currently, there are several projects aimed at enhancing rural women’s economic opportunities, both on going and in the pipeline (personal communication, UNDP and MoLHR). Specifically the ongoing UNDP Project “Bhutan Sustainable Rural Biomass Energy (SRBE)” aims at promotion and dissemination of efficient cook stoves in the rural areas of Bhutan and implementation of demonstration biomass energy technologies in relevant industries. The NCWC and MoLHR project “Advancing Economic opportunities of Women and Girls” has identified district specific livelihood enhancement opportunities and training in four districts of Samtse, Zhemgang, Trashigang and Pemagatshel. There are other projects being implemented by CSOs such as the Tarayana Foundation and BAOWE (Bhutanese Association of Women Entrepreneurs) that needs to be explored further for possible linkages.

Discussions with People’s Representatives in Zhemgang indicated that there are plans of developing an economic hub concentrating on reviving the food processing plant, a dairy processing plant and a

processing plant related to NTFPs in Zhemgang. The development of this economic hub offers good potential to link with the ongoing ADB JFPR grant.

❖ *Create favourable conditions for women to increase their participation in the energy sector*

Since the current scenario in the energy sector (with particular reference to the DRE) shows male dominance especially in the decision making positions, it is recommended to make HRD (human resource development) policies favourable for women to climb up the ladder to decision making positions. Furthermore, with the current practice of using graduates from the technical training institutes as trainers by the MoLHR in its rural training programmes, it is recommended to encourage female trainers who can then also serve as role models for the female participants, the more women engagement and uptake of existing female personnel the recruitment policies in the energy sector

❖ *Promote use of energy for productive purposes for women*

Women make a vital contribution to household incomes, particularly in the case of households headed by females. Energy sector strategies and interventions need to enable women to enhance their incomes and livelihoods, for example, through processing of food and crops. They also need energy services for their traditional income-generating activities (e.g. small-scale farming, food processing and informal production and marketing activities) as well new types of entrepreneurial activities. Additional inputs that are needed to translate energy inputs into increased incomes is capacity building of women in business management, technical skills, leadership and linked with convenient financing options to support new business opportunities. Such targeted policies and actions can relieve women's household burdens and enable them to engage in more profitable enterprises which can then lead to greater economic independence and security for women. Support the national government in undertaking pilots and up-scaling them that train and empower women to utilize energy services including electricity for income generation and livelihood strengthening, the ongoing JFPR Grant is a step in this direction, the lessons from which need to be integrated into other energy sector projects and programmes.

❖ *Monitor energy sector projects in terms of their impacts on men and women*

In all energy sector projects, track to what extent women and disadvantaged groups are able to access electrification inputs can ensure equitable economic benefits from such projects and maximize the effectiveness of investments. Projects also need to track other non-monetary benefits that energy services offer such as improved security, improved safety for children, more time available, and improved health.

The 2010 ADB evaluation study (ADB, 2010a) established a number of indicators to evaluate the socio economic impacts of electrification on men and women. Using the indicators and data from this study as baseline, ADB could assist the government in monitoring progress in economic, environmental, and social impacts of RE over time for completed, on-going, and planned new projects. Indicators on household income (farm and nonfarm), employment, household expenditure on and consumption of different energy sources, incidence and intensity of smoke-related health ailments, time spent by adults and children in learning within and outside home, quality of graduates, permits issued for felling trees for household and business purposes, type and quality of asset ownership, changes in gender roles in household decision making, damage due to theft or wildlife, etc. could be included, as relevant in on-going and planned RE projects in Bhutan.

1. Background and introduction

1.1 Introduction

The *Improving gender-inclusive access to clean and renewable energy in Bhutan, Nepal and Sri Lanka* project is an Asian Development Bank (ADB) supported project [JFPR (Japan Fund for poverty Reduction) Grant-9158 REG). The project aims to increase rural poor women's access to affordable and reliable clean energy sources and technologies in selected project sites in Bhutan, Nepal and Sri Lanka. The project has three interrelated components:

- Component A: Gender review of the energy sector. This component documents good practice in incorporating pro-poor and gender-related aspects in energy sector policies, laws and regulations in ADB's South Asian Regional Department (SARD) developing member countries (DMCs).
- Component B: Interventions on energy-based livelihoods for women. Direct interventions supporting gender-inclusive access to renewable energy and energy-based livelihoods will be implemented.
- Component C: Monitoring processes and impacts. A Project performance and monitoring system (PPMS) has been designed and used for tracking and documenting social and gender-related processes and impacts of interventions.

In each of the three countries, the JFPR grant Components A and C are implemented by ENERGIA/ ETC Foundation¹ in collaboration with national NGOs, while Component B activities are implemented by the national Implementing Agency². In Bhutan, the Royal Society for Protection of Nature (RSPN) is implementing project activities for Components B and C.

This is a report of the gender review of the energy sector policies and programmes in Bhutan.

This report is organized in four chapters. The Introduction chapter presents the background, rationale, methodology and scope of the gender review. This followed, in chapter 2, by an overview of national level gender and development issues and key indicators on women's development. Chapter 3 presents findings of the gender review in terms of an assessment of key energy sector policies, programmes and institutions. Chapter 4 identifies specific opportunities for gender mainstreaming and makes recommendations for the energy sector as a whole and for ADB specifically.

1.2 Background: Rationale for a gender review of energy sector policies and programmes

Gender and energy linkages

Studies confirm that women's empowerment is crucial for all-round social development, environmental sustainability and ensuring efficiency and sustainability of climate change responses. In the energy sector, incorporating specific energy needs, priorities and contributions of women and men can help programmes achieve better results, in terms of enhancing energy access, targeting the poor and ensuring adoption and use of energy infrastructure. Some of the global gender and energy

¹ The International Network on Gender and Sustainable Energy (ENERGIA) is an international network working in the area of gender and sustainable energy. It is hosted by the ETC Foundation in the Netherlands.

² The implementing agencies for Nepal, Bhutan and Sri Lanka are Nepal Electricity Authority, Department of Renewable Energy, Ministry of Economic Affairs and the Ceylon Electricity Board respectively.

challenges highlighted in the UNDP Gender and Climate Change Africa Policy Brief (UNDP, 2012b) that are relevant to the Bhutanese context are:

- About 1.4 billion people worldwide (one in five) lack access to electricity and about 2.7 billion people (40 percent of global population) rely on wood and charcoal as their primary source of energy.
- 2 million people (mainly women and children) die because of the burning of biomass indoors.
- Poor women, especially rural women, continually face energy-related hurdles – including having to collect wood and the time and labour this requires; scarcity of fuel; and health problems from burning and collecting wood –because they are the primary collectors and users of biomass.

Energy is essential for household purposes such as lighting, cooking and heating. Unfortunately, women's capacity to benefit from productive uses of energy services including electrification is often limited: they have limited productive assets, which makes it difficult for them to obtain credit and access new technologies. At the same time, poor and unreliable electricity supply renders it difficult for women to operate home-based microenterprises, a sector where women predominate.

Since women and girls are responsible for the bulk of household work, cleaner and efficient energy technologies are seen to bring about improvements in their quality of life, including their health and education status. Studies have shown that replacing traditional wood based cookstoves with improved ones can lead to reduction in acute lower respiratory infections, chronic obstructive pulmonary diseases, and lung cancer; and time savings from reduced needs to survey fuel areas and collect fuel, as well as quicker cooking times. Providing cleaner, efficient energy sources and technologies can also enhance women's opportunity to engage in income generating activities. Additionally, it is imperative to couple this access to energy and technology with training, financing and support for business activities—including designing, producing, marketing and managing new energy products and services (UNDP 2012a). Combining energy service delivery with efforts to support income generation, with a focus on women, can help lift communities out of poverty. Energy interventions have demonstrated significant benefits for women, when carefully designed and targeted based on a context-specific understanding of energy scarcity, household decision-making and prevalent gender inequities.

The year 2012 was declared as the International Year of Sustainable Energy for All by the United Nations. A new global initiative, 'Sustainable Energy for All' was launched by the Secretary General, which has set three interlinked objectives: to ensure universal access to modern energy services; to double the global rate of improvement in energy efficiency; and to double the share of renewable energy in the global energy mix (UNDP, 2012b). The ongoing JFPR Grant offers a potential to spur economic growth and create jobs; to expand opportunities to those who do not have access to energy (primarily women); and to move towards more efficient, lower-carbon energy options

Gender and energy linkages in Bhutan

Women and girls in Bhutan, particularly in rural areas, shoulder the responsibility for many of the household works such as cooking, washing, and cleaning. Having access to clean and efficient energy offers the potential to reduce the time and effort spent by women and girls on household work, which can have positive impacts not only on their health and education levels but can also enhance their economic opportunities.

Although there are no specific gender equality measures committed by the Royal Government of Bhutan in its energy sector policies, the government's commitment to *100 percent electrification of all* by the end of 2013 is seen to benefit the poor and women. In rural electrification, the government bears the costs of connection to grid electricity for households; and provides full support for solar connection to households that cannot be reached through the grid. Furthermore, the electricity tariffs, especially for rural areas, are subsidized. However, households still have to pay for the internal wiring and monthly bills for electricity; and for operation and maintenance of solar systems. Targeted

interventions are essential to ensure that poor households (particularly single female headed households; and households comprising of only aged people that face shortage of labour) have access to clean, reliable and efficient energy and benefit from energy programmes.

With the 100 percent electrification goal to be achieved soon, it becomes important to tap the increased time that women will have for themselves (from reduced time saved on household chores) to use it productively (by being engaged in income generating activities or in the form of rest or self-improvement). For this the rural women need to be made aware of the options and ways in which energy services can be used to empower them economically and its linkages with other women related issues such as domestic violence, lack of voice in decision making, etc.

1.3 Review objectives

The gender review of the Energy sector in Bhutan documents good practices in incorporating pro-poor and gender-related aspects in energy sector policies, programmes and projects. It will assist the JFPR Grant and provide insights and suggestions to the project staff and partners for ensuring effective gender mainstreaming in the project implementation, including monitoring and evaluation (M&E). The findings and recommendations and its successful implementation can help address some of the challenges identified in the National Plan of Action for Gender (NPAG) in relation to women's economic development (being one of the seven strategic areas of focus).

1.4 Methodology and scope

Specific elements examined as part of this gender review include:

- Gender and energy poverty issues that affect men and women, in terms of access to and control on energy services, resources, and decision-making processes
- Analysis of energy policies and planning processes, and links between gender, energy and national development goals
- A review of select energy programmes in terms of how they increase access to modern energy services for the poor and women, identifying good practices and lessons learned
- Existing institutional arrangements within the energy sector and the extent to which they encourage gender equality goals and institutional capacities to implement gender-mainstreaming strategies.

The gender review has a strong focus on learning from the past, and geared towards improving practices and policies through creating forward-looking strategies through recommendations from the analysis of key findings. The methodology included:

- Desk review of secondary data and literature focusing on status and trends in the energy sector, organizational and institutional settings and gender and development issues of the country, through both published and unpublished reports. Literature reviewed is included in Annex 1.
- Collection of primary data through individual interviews with key informants (KIs) including policy makers, implementers and community based institutions on policies, capacity on gender mainstreaming, current status and experiences in including gender specific concerns into those policies, programmes and projects. Personnel from the Department of Renewable Energy (DRE), the United Nation's Development Programme (UNDP), people's representative in the parliament from Zhemgang, BPC representative in Zhemgang, local Gups and Tshogpas were interviewed. Persons interviewed are listed as Annex 2. The interview schedule is included in Annex 3.
- A national knowledge sharing workshop was organized to share the findings of the Review in Thimphu, Bhutan on 01 October 2013. This was attended by key stakeholders in the sector, and the inputs and suggestions received incorporated into the report (Agenda included as Annex 4).

2. Country context: An overview of gender, development and energy sectors in Bhutan

Most document dealing with gender issues in Bhutan state the Bhutanese women enjoy equal rights and there is no discrimination against them. This statement is made especially when comparing the situation of women in Bhutan with their counterparts in neighboring countries. On the Social Institutions and Gender Index (SIGI), Bhutan comes ranks second after Sri Lanka³. In 2009, adult women in Bhutan had a lower mortality rate (194 per 1000 adults) than men (256 per 1000) and the country reports a positive sex ratio of 1.04 (male to female births) (UNDP, 2013). In general, women in Bhutan (rural and urban) have social freedom and participation in household decision making; women taking loans has been on the increase; life expectancy is the same for men and women and maternal mortality rate is on the decline. Demographically there are more women (51 percent) compared to men (49 percent) (Royal Government of Bhutan, undated).

Nevertheless, it does not mean that Bhutanese women do not face challenges. Women lag behind in areas such as politics and decision-making, tertiary education and the economy, with the rural women being more vulnerable than their urban counterparts.

2.1 Framework for women's rights and gender equality in Bhutan

The Royal Government of Bhutan has maintained a gender- neutral approach in the formulation and implementation of its plans, policies and programmes. While the Constitution does not explicitly refer to women and men, it highlights the objective to allow all citizens to participate in the mainstream [Article 7(8), Articles 7(6), Article 9(17), Article 25 (4), Article 23(9)]. The Election Bill 2008 also does not differentiate between men and women. As the NPAG points out, the plans and programmes include women in the delivery of basic services in areas of health, education, nutrition and sanitation. The National Women's Association of Bhutan was established in 1981, the first women's association in Bhutan. In the fifth five year development plan, a separate chapter on women was included, and the seventh plan identified women as beneficiaries of health and education. Efforts were also made to involve women in income generation activities such as weaving, agro based industries and food processing. Subsequently, the ninth plan highlighted the need for women's wider representation and participation in decision making bodies and civil service. The Royal decree in 1998 stressed the importance of women's representation in the National Assembly. However, affirmative measures such as quotas or reserved seats are not adopted.

The National Commission for Women and Children (NCWC) led the development of the National Plan of Action for Gender (NPAG). This was done to facilitate and guide mainstreaming gender into all future policies and programmes, projects and activities in the country. It identified seven specific gender interventions for the period 2008-2013, setting a time frame in line with the government's 10th five year plan. It suggested that the overall gender mainstreaming strategy will focus on strengthening capacity of gender focal points, the Gross National Happiness Commission (GNHC) and the NCWC, strengthening collection, analysis and use of sex disaggregated data and gender related information, and integrating gender into monitoring and evaluation.

The National Plan of Action for Gender 2008-2013 (Royal Government of Bhutan, undated) identifies the following actions to be undertaken in relation to economic development for women: increasing incomes of those family workers who currently receive little or no remuneration, especially rural women; enhancing skills of women farmers and vulnerable groups of women to encourage

³[http://genderindex.org/ranking/South percent20Asia](http://genderindex.org/ranking/South%20Asia). Although Bhutan is not ranked for 2012, 2009 data for the South Asian countries shows that Bhutan ranks second (with a ranking of 64) with Sri Lanka having a rank of 45.

diversification of their income-generating activities; promoting cottage and small rural-based enterprises; and providing access to financial services.

The GNHC, in the 11th FYP guidelines, outlines a number of gender considerations to be followed by the Ministries and departments when drafting their 11th Five year plan (FYP) (Gross National Happiness commission, 2012). On gender, the National Plan of Action for Gender (2008-2013) highlighted seven critical areas for action during the 10th FYP. Visible gender gaps that need attention in the 11th FYP are in the areas of education (tertiary and vocational levels), employment, political representation and Violence against Women. Other areas of concern will be identified by diagnostic studies that are currently being conducted. Unlike the past, in the 11th FYP, concerned sectors will be responsible for addressing gender gaps by integration into their plans and programmes, a Gender Responsive Budget strategy will be developed and implemented. Subject to relevance, laws, legislations and policies will be reviewed from a gender perspective. Gender Focal Points will be used to achieve the results outlined in the Plan, and the institutional capacity of the National Commission for Women and Children will be enhanced. Each sector shall mainstream gender issues while formulating the 11th Plan and strengthen the collection of sex-disaggregated data.

2.2 Progress and gaps in key gender indicators

Women's literacy and education level

In Bhutan, the literacy rate among women is lower than men, which compounds the socio-cultural stereotypical norms that promote male superiority especially in decision making.

Gender disparities in literacy are practically absent among the youngest age group. The gender gap in literacy begins in the 10-14 year old age group, with the gap widening with age. Only 56 per cent of Bhutanese women between 15-24 years are functionally literate (Royal Government of Bhutan and UNDP, 2011). Enrolment of girls in tertiary education is lower than that of boys with only 2 girls for every 5 boys enrolled at tertiary level (Ministry of Education 2011). The adult literacy rate remains lower for women (47percent) than for men (69 percent), and this is particularly true in rural areas. Literacy rates among young women aged 15-24 were found to be the lowest in the Eastern region (43 percent), particularly in Tashiyangtse and Trashigang (National Statistics Bureau, Royal Government of Bhutan, UNICEF and UNFPA, 2011).

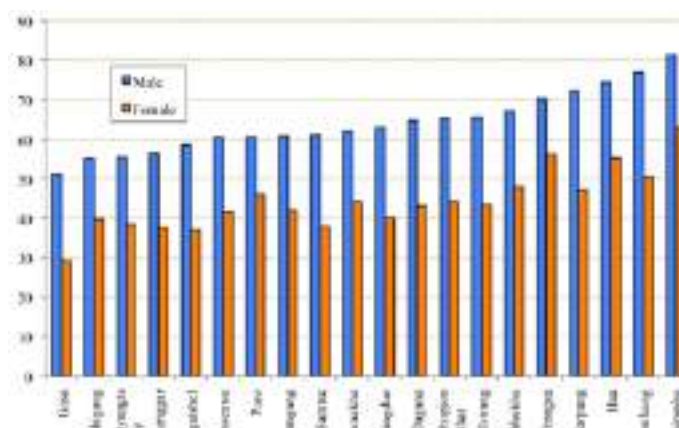


Figure 1. Women and men's ability to read (Royal Government of Bhutan and UNDP, 2011)

Women and poverty

The Bhutan Living Standard Survey (BLSS) 2012 estimates that in Bhutan, 29 percent of households are headed by females. The proportion of female-headed households is much higher in the rural areas (34 percent) than in urban areas (19 percent). On an average, the income of male-headed households is about Nu 10,000 (or more than 25 percent) higher than the income of female-headed households.

A qualitative research on pro-poor support mechanisms for sanitation and hygiene improvement in the SNV and PHED (Public Health Engineering division, Ministry of Health) Rural Sanitation and Hygiene Programme (RSAHP) in Lhuentse, Bhutan in 2011, gave good insights into how the community perceived poverty in their own locality. The households or individuals who were perceived as poor

were mainly those households that lack labour resource or individuals living on their own. Respondents referred to “those who lack manpower”, single female headed households, old people “living alone”, and single headed households (SNV, 2011).

Women’s workload and impacts of migration

Rural women shoulder a range of unpaid and unrecognized reproductive work; productive or income generating activities and community and social responsibilities. The Gender Pilot Study (GPS 2001) found that in more than 80 percent of rural households, women cooked, washed clothes, worked in the kitchen garden, preserved food and collected manure. More than two-thirds of rural women took care of children, fetched water, looked after domestic animals and distilled alcohol. Among rural men, almost 60 percent were engaged in collecting firewood (Royal Government of Bhutan, undated)⁴. Men and women were equally engaged in collection of fodder and in buying food, clothes and other items. Meanwhile, in more than 90 percent of households in urban areas, women cooked, purchased food, washed clothes and cleaned. Both men and women are engaged in collection of fodder and in buying food, clothes and other items. Bhutanese women spend significant amount of time in the forests and common areas, i.e. community forests to plant seedlings, water and nurture plantations, weed, collect fodder and fuel-wood and minor forest produce such as mushrooms etc. Yet when it comes to user groups such as Community Forestry Management or Water User Groups, women’s representation in Executive Committees is low to non-existent. When small enterprises or businesses are initiated using community natural resources mostly women get left out.

Time use studies and GNH (gross national happiness) surveys reveal that women work longer hours in the field than men (ranging from 14-18 hours/day) and have less leisure time. As a result of rural-urban migration (mainly male), many women stay behind in the villages and become primary labour in agriculture; these women face growing farm labour shortages while at the same time experience increasing pressure to take care of their household and the growing group of elderly. Among others, one of the fallouts of this phenomenon is that they have no time to participate in community activities and meetings, especially when taking place far from home.

Women and participation in community based groups

The Bhutan Living Standard Survey (BLSS) 2012 report states that there is gender disparity in participation in community groups’ decision making, with male members being more active than the female members. The leaders were made up of 70.9 percent males and 29.1 percent females, while those who participated actively comprised of 71.7 percent males and 28.3 percent females. The BLSS also states that female-headed households accounted for 39 percent of membership in community forest groups, 46 percent in credit/saving groups, 36 percent in farmer groups-production, 39 percent in welfare and charity groups, and 56percent in women’s associations (National Statistical Bureau, RGoB and Asian Development Bank, 2013.).

A gender and poverty analysis study conducted by SNV (Netherlands Development Organization) and the Social Forestry and Extension Division (SFED), Ministry of Agriculture and Forests (MoAF) in the Non-Wood Forest Products’ (NWFPs) programme area of Laurigeog, SamdrupJongkhar, as part of the Market Access and Growth Intensification Project (MAGIP) funded by IFAD revealed the following:

- **Gendered division of labour:** Women are more involved in drying of harvested NWFPs while men are more involved in transporting the NWFPs to the auction. Hence, women fall in the invisible part of the value chain. A difference was also seen in men’ and women’s handling and collection of species. Women were found to be more engaged in collecting Rubia, a dye, while men are more engaged in collecting Chirayita, which has a medicinal value. It is interesting to note that Chirayita (Nu. 291 per kg) fetches a higher price than Rubia (Nu.45 per kg); almost 7 times more.

⁴Page 34, National Plan of Action for Gender, 2008-2013

Factors for this gendered difference in species collection could also be due to the distance factor. Chirayita grows further away from the homes and perhaps relatively more difficult for women to access. This study gives insights into targeting the right participants for resource trainings and discussions. For example, for rubia resource management, women need to be targeted.

- **Decision Making:** At the household level, although it is mostly men making decision, there is some degree of joint decision making. However, as we move away from the household level, the scenario is different. In terms of physical attendance at the NWFP group meeting level, majority of the participants are women but when it comes to decision making, it is fully male dominated. Looking at some reasons for women's non-participation in discussions (shy to participate; hesitant to speak at large gathering; lack of knowledge about species and harvesting guidelines) and men's participation in discussions during NWFP group meetings (have knowledge about species, harvesting and about agendas for future planning; able to make decisions for the group; better public speaking skills). These facts reinforce the thinking that men have more exposure which boosts their confidence and public speaking skills while the opposite is true for women. Thus, there is a need for targeted trainings for women, on areas like NWFP species and their harvesting guidelines; public speaking skills, leadership skills.

Women in labour and workforce

At an aggregate level, unemployment is higher for women (2.2 percent) than for men (1.9 percent). Women constitute 55 percent of the unemployed population. Similarly, underemployment seems to affect more women than men. Underemployment is believed to be a significant issue, most particularly in the agricultural sector, in which large numbers of women are engaged (123,054 women and 74,612 men) (Ministry of Labour and Human Resources, Royal Government of Bhutan, 2012). A higher proportion of the total number of women employed (37.3 percent compared to 22.6 percent of employed men) is engaged in agricultural farming.

The ratio of women to men extension workers is small (1 to 5 in 2005). Majority of female workers in both agricultural and non-agricultural sectors (69 percent compared to 31 percent for male workers) falls in the categories of own account and unpaid family workers. As per the Millennium Development Goals framework, these workers are considered to be engaged in '*vulnerable employment*' and characterized by informal working arrangements, lack of social protection, low pay and difficult working conditions (Ministry of Labour and Human Resources, Royal Government of Bhutan, 2012).

Women in decision making and governance

The NPAG pointed out that women are under-represented in the decision making process. In 2011, women comprised around one third of the civil service. Women are under-represented in the Parliament (5 percent, after the recent parliamentary elections) and among the elected representatives at local government level (7 percent) (Institute for Management Studies, 2011). Women's participation in community level and in governance is lower than that of men, as seen from the following statistics.

- 4 percent of the 2,117 elected representatives in the country are women.
- Women as a proportion of voting members in DTs and GTs is in the range of 20-30percent.
- Bhutan currently has one woman Dzongdag (in Tsirang).
- The last parliament had 10 women Members of Parliament and the current parliament has only 5 women Members of Parliament.

Women and impacts of climate change

Agriculture is the mainstay for more than 60 percent of the Bhutanese population and accounts for 78 percent of monetary income in rural households (Royal Government of Bhutan and UNDP, 2010).

Bhutan suffers huge impacts of climate change. The country is exposed to multiple hazards, most prominently flash floods, landslides, windstorms, earthquakes, forest fires, and glacial lake outburst floods (GLOFs). Bhutan ranks 4th highest in the region at 1.7 percent of the total population exposed to flood risks (UNESCAP/UNISDR, 2010)⁵. The most pronounced consequences of climate change in Bhutan are disruptions in the monsoonal system and increasing/intensifying trends of extreme hydro-meteorological hazards, both of which are closely linked. These disturbances will amplify the socioeconomic challenges for the Bhutanese society, especially in rural areas where the majority of the population is engaged in rain-fed agriculture and rampant poverty makes them least equipped to adapt to changes in climate.

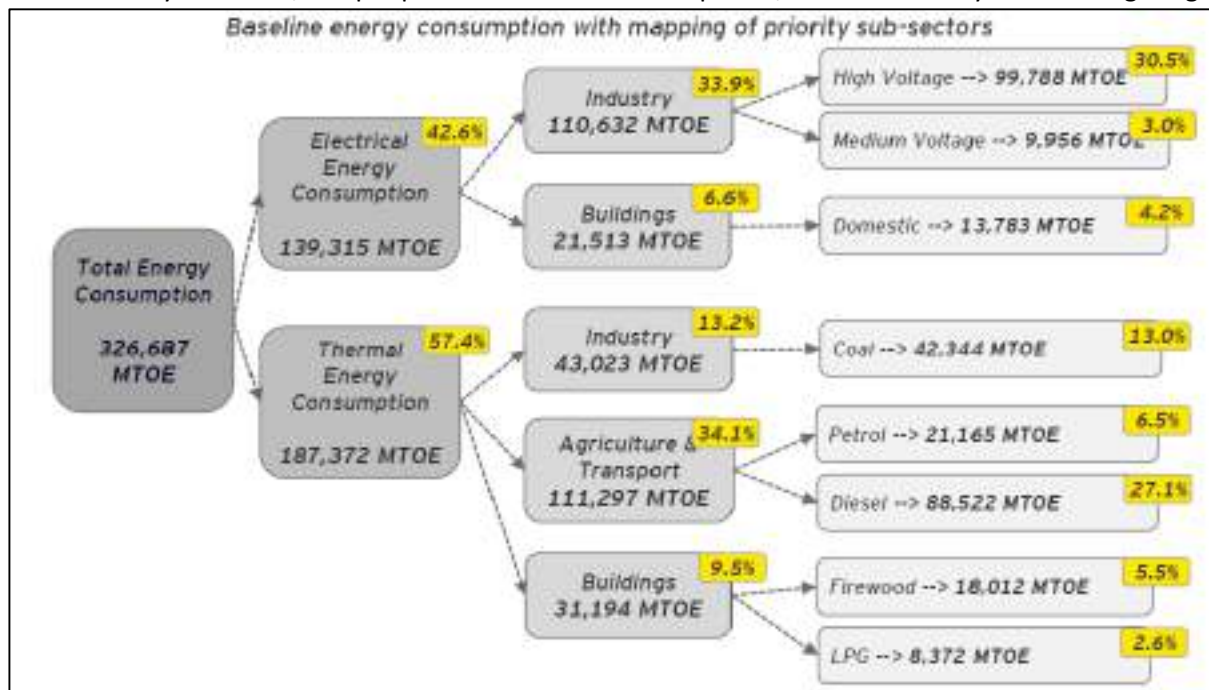
Women in general and mountain women in particular face the burden of climate change disproportionately (Royal Government of Bhutan and UNDP, 2011). Women play many roles, as farmers, natural resource managers, caregivers, and household managers and in these roles, mountain women are constantly forced to cope with the heavy burden of household work combined with farm production and livestock raising. Moreover, the mountain landscape, with its steep slopes, makes collection and carrying of water, fuelwood and fodder difficult and dangerous, taking a toll on their health. Because the needs and concerns of women are voiced less, they do not access drudgery reducing technologies and resources (Leduc, 2009).

In the mountains, remoteness and isolation mean poor access to essential information about climate risks. In addition, with the high rate of men migrating for economic reasons, mountain women are often alone in experiencing the stress of ensuring the safety of household members, coping with the loss of household assets, and dealing with health issues and food insecurity.

2.3 Brief Overview of the energy sector

Energy supply and demand

Energy in Bhutan has been a primary focus of development in the country under its Five-Year development Plans. By 2012, 99.6 percent of urban households and 87.3 percent of rural households had electricity. About 2,500 people in Bhutan use solar power, which is mostly used for lighting.



⁵ Top three countries with high risk exposure are: Cambodia (12.2 percent), Bangladesh (12.1 percent), and Viet Nam (3.9 percent) (UNESCAP/UNISDR, 2010).

Among the dzongkhags, electrification rates are lowest in Zhemgang (70 percent), Dagana (80 percent), SamdrupJongkhar (80 percent), and Monggar (82 percent); the use of solar power is highest in Gasa (61 percent) and Zhemgang (18 percent) (National Statistical Bureau, RGoB and Asian Development Bank, 2013). Since the beginning of the 10thFYP (2008- 2012), about 26,524 households have been electrified, out of which 23,858 households have been electrified through grid extension and remaining 2,666 households including 114 public institutions through solar home lighting systems. The balance 16,462 households will be electrified during the fiscal year 2012/2013. All the necessary funds have been secured and the implementation of the rural electrification projects is under good progress.

By the end of 2013, the government of Bhutan aims to achieve 100 percent electrification in the country, advancing a target previously set for 2020. The government formulated Rural Electrification Master Plan (REMP) 2005, which provides a road map to achieve this goal.

In the early 21st century, about 70 percent of energy consumption in Bhutan was in the household sector. Heating and cooking with firewood in particular accounted for between 70 and 90 percent of total energy consumption and virtually 100 percent of household energy consumption. In contrast, commercial activities in Bhutan were fueled mostly by hydroelectricity (about 97 percent), some fossil-fuel based thermal power (about 3 percent), and a minimal amount of other fossil fuels (DRE and UNDP, 2012). The power sector in Bhutan is synonymous with the hydropower sector, with more than 99 percent of electricity being generated from hydropower. With India, Bhutan has undertaken several hydroelectric projects whose output is traded between the countries. The Bhutanese hydroelectric plants produce excess energy in summer, but in the dry cold winter due to the drying of the rivers and increased fuel demand, Bhutan has to import electricity from India.

To date, the Bhutanese electric energy supply has been virtually entirely hydroelectric. Bhutan also imports oil at some 1,000 barrels per day mostly for meeting its demand for automobiles.

The Integrated Energy Management Master Plan (IEMMP) developed in 2005 observed that among various sectors, the residential sector accounts for 48.7 percent of the total energy consumption, making it the highest energy consumer. The sector's 91 percent demand is met by biomass, remaining 9 percent is accounted for by LPG, electricity, and kerosene. In the residential sector, energy is mainly used for cooking (66 percent of the total residential energy share), followed by fodder cooking (26 percent) (TERI 2005). One of the reasons for the high consumption is the predominant use of two or three pot traditional stoves built of stone and mud. The main source of primary energy in Bhutan is fuelwood obtained from forests. The country consumed 724,597 tonnes of fuelwood in 2005, which accounted for 56.8 percent of the total primary energy supply.

The energy sources most widely used for cooking are electricity (84 percent of households), gas (61 percent), and wood (33 percent). The use of gas for cooking is greater in the urban areas (92 percent of households) than in the rural areas (45 percent). Wood is used for cooking by about half of rural households (49 percent) but is hardly used for that purpose in urban areas (National Statistical Bureau, RGoB and Asian Development Bank, 2013). Solid fuels include coal and wood biomass, charcoal, crop residues, and animal dung. The use of these traditional fuels for cooking is known to cause for indoor pollution, associated with the incidence of diseases such as acute lower respiratory infections among children, chronic obstructive pulmonary disease, and, where coal is used, lung cancer. The per-capita fuelwood consumption in rural areas is very high at 1.19 tonnes per capita per year (Ministry of Economic Affairs, 2010). Electrified households consume almost 23 percent less fuelwood in comparison to the un-electrified household, and, electricity tends to be the primary energy source for cooking once a household gets electrified.

About half of households—56 percent of rural households and 37 percent of urban households—do not heat their dwellings. In the urban areas, 45 percent of households use electric heaters, while 14

percent use a bukhari. In the rural areas, the bukhari is the usual source of heat for dwellings, used by about a third (31 percent) of households; only 8 percent of households use electric heaters.

Government agencies and operations⁶

Until 2002, Bhutan's energy sector was overseen by the Ministry of Trade and Industry, Department of Power. Currently, the energy department is led by three bodies under the Ministry of Economic Affairs: the Department of Renewable Energy, Bhutan Electricity Authority, and the Bhutan Power Corporation. While the Department formulates policy, planning, and coordination, the Authority is the main regulatory agency of the energy sector. Since 2006, the Authority has the authority to impose differential tariff structures on low, medium, and high voltage consumers. The Druk Green Power Corporation operates as a holding company to oversee and accelerate hydropower and alternative energy development.

Renewable energy operations in the country are overseen by the Department of Renewable Energy (DRE), under the Ministry of Economic Affairs. The DRE was established in 2011 with the mandate to serve as the central coordination agency and the focal point of RGoB on all matters related to renewable energy development. Keeping in view the rising demand for electricity, concerns of global warming and Bhutan's increasing reliance on hydropower generation, the Department aims to broaden the energy supply mix by exploring other forms of clean and renewable energy sources that will supplement, in particular, hydropower generation shortage faced during the lean season. The Department has three Divisions with total staff strength of 36 regular staff: Alternate Energy Division; Planning & Coordination Division and the Research and Development Division.

Renewable energy

Solar energy in Bhutan has received direct investment from domestic and international sources. In 2010, Asian Development Bank made a grant of over USD21 million for electrification of rural homes, aiming to provide power both on-grid and off-grid. The Department of Renewable Energy then known as Department of Energy provided solar electrification training for villagers from rural eastern areas of Bumthang, Lhuentse, Mongar, Pemagatshel, SamdrupJongkhar, Sarpang, and WangduePhodrang Districts. Solar powered lighting is also available to many nomads living within protected areas of Bhutan.

In order to shift household dependence on firewood, Bhutan began re-exploring biogas development from cow dung. This included a five-year trial program in Chukha, Samtse, Sarpang, and Tsirang Districts from 2011 to 2015. Bhutan had previously explored generating biogas in an identical fashion in the 1980s, but the program was abandoned after failures in training of masons and users, after-sales service, and site follow-up. Currently, Furthermore, the installation of 1600 biogas plants is underway.

Smokeless stoves were introduced in Bhutan as early as 1985 when an estimated 14,000 to 15,000 stoves were installed. The programme however did not take off well, and key reasons for the lack of success of the stove programme are as follows (Palit and Garud 2010):

- Households would modify the pothole dimensions and fire box of cookstoves to make them more convenient for use with large fuelwood pieces, resulting in a reduction in stove efficiency.
- Although the smokeless stoves can be regulated to have better thermal efficiency, that in practice rural people did not regulate the airflow, thereby having high fuelwood consumption.
- Use of traditional stoves as the main source of space heating, especially during cold months, by those who could not afford additional heating devices. The mud body of the smokeless

⁶http://en.wikipedia.org/wiki/Energy_in_Bhutan.

cookstoves had limited capacity to store and radiate heat, which has a serious drawback in middle and high altitude settlements where heating was a primary necessity.

- In many households, chimneys of smokeless stoves are dismantled because of perceived fire hazards and in order to use the smoke for drying chilli, fish, and grain, eventually making the smokeless improved stoves much like the traditional ones again.

In 2010, pilot windmill programmes were implemented to investigate the feasibility of using wind energy to alleviate hydropower drops during the dry winter seasons. Currently, the development of 2*(250-300) kW Pilot Wind Plant at Rubesa, Wangdiphodrang dzongkhag is under way⁷.

The newly approved “The Alternative Renewable Energy Policy 2013” (Ministry of Economic Affairs, Royal Government of Bhutan, 2013) sets out a preliminary minimum target of 20 MW by 2025 through mix of renewable energy technologies. This minimum target may be increased following more detailed evaluations of resource potentials. Specific targets for electricity generation includes solar 5 MW, wind 5 MW, and biomass 5 MW, this does not include micro/mini/small hydro, which shall be developed separately on need basis.

⁷ Although three sites have been assessed, only one site that is viable is being targeted (personal communication, DRE)

3. Findings: Gender review of the energy sector

3.1 Gender in ADB's energy sector priorities in Bhutan

The ADB energy sector strategy during 1994–2001 highlights the importance of institutional reforms and the introduction of commercial utility management practices as means to achieving the government's broader development objectives (ADB, 2010b). ADB engaged decision makers in policy dialogue to explore institutional models for sector reforms; and took the lead in providing assistance to implement institutional, legal, and regulatory reforms. In the last seven years, ADB's strategy has placed increased emphasis on diversifying financing sources for the hydropower sector from official bilateral assistance to more commercially oriented public–private partnerships (PPPs) in accordance with the strategic priorities set out in Strategy 2020 and country-specific priorities. ADB's energy sector strategy for Bhutan has been closely aligned with country priorities. Currently, the energy sector accounts for 37.5 percent of the total loans in the country⁸.

The country partnership Strategy for Bhutan states that gender equity will be promoted through support for strengthening the capacity of the National Commission for Women and Children to facilitate gender mainstreaming across sector policies, strategies and programs. ADB also proposes to pursue opportunities for gender mainstreaming in its operations by setting gender-related targets and indicators in the design and monitoring of relevant projects (ADB, 2012).

3.2 Gender in energy sector policies and programmes

Currently, the most relevant renewable energy policy in Bhutan is the Alternative Renewable Energy Policy 2013 which was developed with support from ADB. Prior to this, the hydro energy sector development in the country was governed by the Bhutan Sustainable Hydropower Development Policy 2008 and the Economic Development Policy (EDP) 2010, both of which recognized the need for a Renewable Energy (RE) Policy to promote the use of available renewable energy sources to strengthen national energy security.

A review of the energy sector policies indicates that gender equality is not identified as a key issue of concern in the policy framework. The reference to gender/ women in the policy documents is non-existent. Besides the policy documents, the Bhutan Energy Efficiency Baseline Study report 2012, a study recently prepared for the DRE and UNDP to enable in the formulation of a National Energy Efficiency Policy, does not mention anything on gender or women (DRE and UNDP, 2012). This section presents a gender review of key energy sector policies in the country.

Bhutan sustainable hydropower development policy 2008

The Bhutan Sustainable Hydropower policy 2008 (Royal Government of Bhutan, 2008a) makes a mention of social considerations but has no specific reference to gender or women. The policy outlines environmental requirements and environment management plan but there is no mention of any pro-poor or gender/socially inclusive requirements. On the other hand, the policy does have a provision for providing employment to one member of the displaced family during the project construction period.

It has been seen that energy development projects is an area where women and men can be affected differently. In general, gender issues associated with energy development projects are differences in how they impact men and women:

- Population displacements and resettlement: Women often suffer more from the loss of their household assets and social support networks

⁸ <http://www.adb.org/countries/bhutan/main>

- Disruptions in natural ecosystems from flooding, reduced water flows or the clearing of forests, with differing impacts on men's and women's livelihoods
- Economic changes: New roads, businesses and communications systems, in-migration of large numbers of men for jobs can disrupt women's traditional livelihoods, if mitigation measures are not taken
- Social changes and conflicts resulting from resettlement and disruptions in authority structures and community networks: with possible negative consequences for women's status and resources available to them

Given this, it is a useful strategy to include specific requirements on examining these issues during the baseline surveys.

The Policy makes a reference to the Renewable Energy Development Fund which is created out of a part of the up-front premium received from hydro power project developers. In addition to using it for other purposes, the policy indicates that the "fund will also be utilized for environmental services rendered in the form of hydropower upstream catchment protection and for renewable energy initiatives." Since the use of this Fund is yet to be determined by the RGoB, there is scope for including pro-poor and gender sensitive allocation and usage of the fund by the RGoB.

Economic Development Policy (EDP) 2010

The Economic Development Policy aims to be the apex policy for economic development of the country and shall be the guiding document for all ministries and agencies to stimulate the economic growth and more importantly, to ensure that growth takes place in consonance with the principles of gross national happiness (GNH). Wherever necessary, policies, laws, rules and regulations shall be harmonized or amended in line with the provisions of the Economic Development Policy. The policy states energy sector development is the greatest opportunity for the country and the main driver of the economy, emphasizing that investment in renewable energy, especially hydropower would not only boost sustainable and equitable socio-economic development, but help in conserving the environment.

The policy discusses, as part of its Strategy, "environment mainstreaming" that allows for industries to engage in cleaner production, it however, does not talk of social or gender issues. In terms of pro-poor and gender incorporation, the policy does not have any pro-poor and gender considerations incorporated in its policy reforms under the energy sector except a mention of the RGoB's strive to provide electricity to all households by the year 2013. Furthermore, the policy development process does not seem to have gone through a public consultation process.

One area in which women are mentioned is in the context of cottage and small industries (CSI), which is expected to support equitable distribution of income and bring about balanced regional development. The Policy mentions that special focus on women's enterprises shall be given within the CSI industries development framework.

Alternative Renewable Energy Policy 2013 (AREP)

The Alternative Renewable Energy Policy 2013 is the key policy that governs the overall functioning of the renewable energy sector in Bhutan. It aims to provide a direction for the development of renewable energy in a manner that not only contribute in meeting the current requirements but also share future energy security options for the nation.

The Alternative Renewable Energy Policy strives to ensure adequate provision and extensive use of modern energy services in rural areas, which have been largely dependent on firewood and kerosene for cooking, heating and lighting purposes. The policy outlines that in remote locations and rural areas, community-based initiatives in the form of Decentralized Distributed Generation (DDG) and other initiatives leading to promotion of RE sources shall be dealt on a priority basis.

In order to identify gaps and opportunities for gender mainstreaming in renewable energy policy, it is first useful to highlight gender issues that can potentially affect how renewable energy technologies and programmes are implemented and adopted by communities in general. Experience shows that:

- Women are responsible for a number of tasks needed to sustain households. Many of these laborious tasks can be made easier using renewable energy technologies, freeing women's time and labour for other income generating, leisure or self-improvement activities.
- Women also need improved energy services for their informal production and marketing activities. Many of these like food processing require large amounts of time and heat energy. Modern fuels and renewable energy technologies can help women to accomplish these activities in less time, with greater efficiency, and bring higher profits.
- Women have proven to be good candidates to be renewable energy entrepreneurs; rural women know local circumstances and understand local needs, and able to sell more effectively to other women.
- Men and women may have different energy needs and an energy service may impact them differently. For example, men may choose to locate a light outside the house for security reasons (e.g. protecting livestock from theft) while women may want light in the kitchen.
- Men and women respond differently to promotional messages. Women often use different communication channels than men, as they have lower literacy rates.

While a national renewable energy policy, being broad-based, may not specifically identify these issues, it can provide a framework that enables addressing these in sector strategies and programmes. With this background, the following gender gaps can be seen in the Alternative Renewable Energy Policy 2013:

- The renewable energy policy makes a mention of stand-alone renewable energy technologies (including improved cookstoves) apart from which there is no mention of cooking energy. In spite of the extensive use of electricity for cooking in urban areas, about half of rural households (49 percent) continue to use wood. For these, there is a need to promote a long term strategy, including targets (backed by financial allocations) to ensure sustainable and affordable supply of clean and renewable cooking fuels and technologies, at par with electricity.
- The present institutional arrangement outlined in the policy has no mention of organizations with experience in women and their gender issues. The role of civil society is limited to the provision that CSOs, NGOs, Communities, Companies and Individuals based in Bhutan may initiate and undertake stand-alone RE based projects following the Guidelines prescribed by the NA. It is felt that the Policy would have been benefitted through inclusion of the National Commission for Women and Children (NCWC) in its institutional arrangements, to bring to the fore, issues related to women and their energy needs.
- The policy indicates that preparatory studies are to be taken up by the nodal agency (DRE) covering technical, financial, economic and environmental aspects of RE projects. It also mentions that DDG RE projects shall be developed for provision of energy-based services to remote and dispersed villages, which are not electrified or not connected to the grid. The allocation of such projects shall be based on guidelines, rules and regulations prescribed by the nodal agency. In addition, stand-alone RE systems/scheme/programme based on solar PV, solar thermal, pico hydro, micro hydro, wind, solar home lighting system, solar lanterns, biogas plants, passive cooling systems, biomass, cook-stoves etc. for processing appliances or hybrid of RE technologies for the provision of decentralized energy for households/communities shall be undertaken and/or supported by the NA. However, there is no mention of social and gender aspects. Even the Broad guidelines for Preparation of detailed project reports (DPRs)/DPP under self-identified RE Projects mentioned in the policy does not have any pro-poor and gender considerations.

- In the monitoring and evaluation section, regular impact studies of RE programmes could be enriched by including gender impact studies.

Opportunities for including pro-poor and gender considerations in the policy lie in the following provisions:

- The policy has a provision for enabling, encouraging and facilitating both public and private sectors. There is hence a scope for women's involvement in renewable energy activities.
- The policy highlights the need to develop RE Master Plan for each of the RE technologies by mapping capacity, generation potential and cost of generation by location across the Kingdom; here also pro-poor and gender considerations can be taken into account.
- Research & Development on renewable needs to ensure that RE products and services are pro-poor and incorporate gender considerations.
- The Policy states that the Nodal Agency (i.e. the DRE) is mandated to prepare Renewable Energy Development Fund (REDF) management guidelines, rules and regulations within one year from the issuance of the RE Policy in consultation with identified financial institutions. Special pro-poor and gender provisions can be integrated in the administering and managing of the newly created (REDF), this can be done through consulting with CSOs that are working at the grass roots in the field of gender and energy (such as Tarayana Foundation).
- Since there is the provision to develop appropriate subsidy and support mechanisms to make RE a viable energy source, the support to people living in extreme poverty (including single female headed households) need to be encouraged.

3.3 Gender review of selected energy programmes

Rural electrification programmes

Experiences from around the world show that rural electrification benefits women in many ways (summary of international literature presented in Annex 5). For Bhutan particularly, Asian Development Bank's Assistance for Rural Electrification in Bhutan—Does Electrification Improve the Quality of Rural Life? (ADB, 2010a), an ADB evaluation study conducted in 2010, has documented the impact of rural electrification on Women's Empowerment in Bhutan, which has relevance for future programmes as well.

- Rural electrification had a positive impact on women's empowerment by balancing the gender roles and control over financial resources. With electricity, women spend less time collecting fuelwood, and the time saved is used to generate income and participate in community and social activities. Electricity also has a considerable impact on women's mobility, freedom in using income and savings, utilization of credit, knowledge about gender inequality issues, convenience in organizing household chores, changes in attitude in terms of reducing health care disparities, and years of schooling. The study finds a significant improvement in women's decision making on issues related to health care and education but not regarding finances.
- The study finds that while the impact of RE on reducing fuel wood collection times is significant for both sexes, a disaggregated analysis demonstrates that women benefit more than men since it is usually women who collect fuel wood.
- The study finds a significant improvement in women's decision making on issues related to health care and education but not regarding finances.
- Access to electricity empowers women through health, education, gender equality, and domestic violence awareness programmes on television. Thus, women are becoming more assertive and confident. Further, on average, women save 1.5 hours every day in cooking, which enables them

to attend village meetings and voice their concerns. Although Bhutanese women enjoy equal status and the same rights as men—and, in fact, inheritance and child support laws favor women—many are required to get permission from males to visit markets and friends or relatives. More than 93 percent of the respondents also believe that girls and boys should be treated equally; hence, no strong sex preference of children was reported.

These impacts are corroborated from experiences in other countries as well, summarized in Annex 3.

A number of good practices and lessons learned in integrating gender in energy service provision are available. Even though some of these are from sub-sectors ADB is not currently engaged in Bhutan, the gender strategies and good practices are relevant.

Meeting women's energy needs and women's empowerment: Solar Warriors project, Bhutan

The “Solar Warriors” Project in Bhutan enabled semi-literate women in pioneering a community-based approach to provide remote villages with solar-powered lighting (ADB, 2009). This was a pilot community-based project to bring solar lighting to the remotest regions of Bhutan where it is difficult for the government to reach electricity. Barefoot College, an educational non-government organization based in India trained women from rural Bhutan villages as part of Rural Electricians Training Program.

Overall, the project was less successful than envisaged in attracting women to the barefoot solar engineers (BSE) training programme. Of the 461 villagers trained, 19 (4 percent) were women, as women were unconvinced that potential clients would hire them. In the end, 35 young women were trained as 'Solar Warriors', to set up 18 rural electronic workshops in their villages. These women installed solar panels on rooftops of 504 households in 48 villages covering 13 districts in Bhutan during 2008-09, and rehabilitated units that had fallen into disrepair from earlier schemes.

ADB 2009 records that while the “solar warriors” performed the tasks expected of them, agreements with communities to pay specific maintenance costs proved difficult to enforce. Some households did not pay the BSEs for the repair services they rendered. Many moved away from their home villages following marriage, or to pursue work opportunities elsewhere, leaving some villages without the expertise necessary for maintaining the solar energy systems that had been installed. Although this problem was later addressed in part by the Department of Energy, many households were left with unusable solar energy system.

Relooking at the project now, the DRE representatives opine that although the selection of the participants for the project was done in consultation with the community, it would have been more sustainable if some older rural women had been chosen since most of the young women chosen have left the villages. But keeping in mind the reasons for not being able to send the older women with household responsibilities, for future projects, it is recommended to bring the trainings closer to the homes of these rural women.

Notwithstanding the challenges, the initiative helped women in a number of ways: increasing their income by making handicraft items at home; enabling them to cook at night in the open with solar lanterns; children were able to study at night without exposing them to the fumes of kerosene lamps; and women did not have to walk for miles across Himalayas to nearby towns to fetch kerosene. Some of the lessons learned from this project are as follows:

- The importance of adopting a Bottom-Up Approach which led to total community involvement and local ownership of the project. Community Involvement and sense of ownership from the very beginning of the project is essential and critical to the success of the project as well as to ensuring sustainability on a long term basis.

- Matching the choice of technology/solar unit with the need of the community based on their affordability and requirement size works well.
- Selection of participants (in this case young rural women) in consultation with the community proves to be effective.
- Working with local CSOs (in this case with Tarayana Foundation) has proven to be effective in terms of up-scaling and sustainability.

Community micro-hydro for sustainable livelihoods, UNDP

The UNDP in Bhutan is implementing energy related projects. In an effort to expand women's economic opportunities in Bhutan, the Project titled "Community Micro-Hydro for Sustainable Livelihoods" was implemented by UNDP from August 2005–June 2009 (UNDP 2012c). The project provided electricity to 57 remote community households. The success of the project can be attributed to community capacity-building; a focus on productive uses of energy; coordinated efforts by various local-level agencies; and development of guidelines and manuals, which were subsequently used in the design of a national micro-hydro policy.

Among other results, the project helped increase the income of women for their households through engaging in activities such as weaving and also to increase rural women's literacy rate. This was expected since the availability of lighting meant women had more time to go for Non-Formal Education (NFE) classes in the evenings. At the same time through use of rice cookers and water boilers, the project was able to bring down the use of firewood, thereby reducing the pressure on the forest. In the winter of 2006, fuelwood used in Sengor totaled 25.5 truckloads supplied by the Government and 11,835 backloads collected from the forest. After the advent of MHP in 2008, these quantities were reduced to 13 truckloads and the complete elimination of back-loads.

The project was in line with Bhutan's 2020 Vision of environmentally sustainable and equitable socio-economic development, which is promoted by the RGoB through the Gross National Happiness philosophy. Lessons learned from the project have informed Bhutan's efforts to electrify remote communities not connected to the national grid. Some of the lessons and good practices in expansion of energy services for the poor from this project include:

- **The need for establishing an enabling environment:** Expansion and replication of projects like Sengor MHP requires an enabling environment that includes:
 - coherent policies;
 - harmonization of government and donor efforts;
 - inter-agency coordination;
 - national capacities; and
 - a sustainable financing mechanism.
- **Align donor efforts with government plans:** At this point, grants and soft loans from the Asian Development Bank and other donors have been made available for extensions to the grid and for SPV systems. No new funding for MHP projects has been forthcoming, except for the 2006 Chendebji MHP project. Ideally, community-based micro-hydro development and RGoB rural electrification plans should complement one another. In fact, it almost appears that the two are in competition with each other. Measures to align donor efforts in the sector with RGoB plans are urgently needed.
- **Align project objectives with national priorities:** It is essential that project formulation and design are aligned with RGoB policy and plans. The Sengor project was designed in the context of the 9th Five-Year Plan and the vision of electrifying the country by 2020. The project is also aligned with Bhutan's laws, which encourage rural electrification (including off-grid and renewable solutions); and also fully aligned with Bhutan's development philosophy by promoting:

- equitable and sustainable socio-economic development;
- preservation and promotion of culture;
- conservation of the environment; and
- good governance.

Other efforts of the UNDP in the energy sector in Bhutan includes the Biomass Fuel Efficiency Project which has installed improved stoves which consequently improved the condition of the kitchens for better health and wellbeing of women in rural Bhutan.

In the UNDP projects, the creation and working with women groups for encouraging better participation of women in the project activities not only as recipients but also as active development actors were greatly encouraged which lead to an increase in women's participation in energy decision making and energy management.

Advancing economic opportunities of women and girls

In line with its priorities in the NPAG, the NCWC has been working with the Ministry of Labour and Human Resources (MoLHR) in the project "Advancing Economic opportunities of Women and Girls" funded by the Japan Fund for Poverty Reduction (JFPR) through the ADB. A study was carried out as part of the project to establish baseline socio economic data of the prospective beneficiaries of the project and provide analytical support to the Project Management Unit (PMU) and implementing partners in identifying production and processing techniques for niche market of agricultural, livestock, arts and crafts and home based industry products. Some good practices that can be highlighted as part of the project are as follows:

- Formation and working with self-help groups, especially in the area of income generating activities.
- Building on already existing skills and training modules (Basic tailoring program; Hairdressing; Basic embroidery program; Basic electrical home appliances repair program)
- Use of local institutions and local graduates from the Technical Training Institutes in providing training to the local community

The NCWC has strategically chosen the MoLHR as an implementing partner since the MoLHR is the national ministry mandated to provide economic and livelihood enhancement related training and the development of human resource in the country.

3.4 Gender organizational assessment of the Department of Renewable Energy

The Department of Renewable Energy currently has 32 staff members. The department has three divisions all headed by men. At the officers' level the ratio is almost gender balanced with 6 women and 9 men (in absolute numbers). At the support level, it is balanced with support administration women equaling the men drivers in the department. Discussions with a division head indicated a good understanding of the current social issues in Bhutan (including gender issues such as domestic violence, the importance of women's economic empowerment, overburdening of rural women due to multiple tasks, out migration of young people leaving behind old aged and disabled persons in the rural villages, disintegration of traditional support systems, etc), yet it was stressed that the "energy related policies are energy policies and not gender and social policies".

Talking about the gender considerations in the policies and mandates of DRE, it was mentioned that responsibility for gender and social considerations has to start with the top management that makes the decisions regarding projects and budgets.⁹

In the present planning mechanism, there is no process for a dialogue or consultation between DRE and the NCWC (National Commission for Women and Children) and this partly explains the lack of gender considerations in any of the DRE related policies and documents. Furthermore, there is no budget allocated for gender mainstreaming when looking at the draft 11th Five Year Plan for the DRE (DRE, 2013). And although the DRE sometimes collects gender disaggregated data during the implementation of its activities, there is no systematic procedure in place to ensure that gender disaggregated data is collected and used in planning, monitoring and reporting.

Although some staff from the DRE (one in 2011 and 4 people in 2013) attended some gender related workshops, it is yet to be translated into action plans at the department. And the department does not yet have a gender focal person but there are designated toilets separate for women and men on each floor of the department building.

⁹ Information collected during the key informant interview with the DRE personnel.

4. Opportunities and recommendations

The Bhutanese women enjoy relative freedom and equality with men in many spheres of life; they enjoy equal rights and there is no overt discrimination against them. Nevertheless, it does not mean that Bhutanese women do not face challenges. Women continue to lag behind in a number of areas such as politics and decision-making (at community, district and national levels), tertiary education and the economy. The Country Analysis for Bhutan 2012¹⁰ prepared as part of the formulation process of the United Nations Development Assistance Framework for the period 2014-2018, analyses the causes of gender gaps in Bhutan, stating that “gender inequality in Bhutan has mainly been attributed to the following root causes:

- Social expectations and norms (traditional roles girls and women are expected to play and acceptance of these roles by them such as taking care of the household, attitudes towards violence against women);
- Cultural beliefs and stereotypes (e.g. women less capable than men);
- Traditional inheritance patterns of family property (matrilineal especially in the Western and Central regions, which implies the moral obligation for women to take care of their parents);
- Lower education and literacy levels, especially among poor and rural women;
- Lack of self-confidence, self-esteem, poor self-image; and,
- Poverty (income of male-headed households being higher than the income of female-headed households; female headed households lacking labour resource).

Some of the common underlying factors that have been cited as having an influence on opportunities for women include: (1) women’s double or triple burden; (2) lack of day care facilities, especially in rural areas; (3) dependence on men for financial support; (4) limited access to information, including awareness and information on their rights; (5) limited exposure; (6) gender blind/neutral approach of the government; and, (7) lack of role models in leadership positions, especially in rural areas.” It is important to be aware of these opportunities when working on promoting gender equality in Bhutan.

4.1 Recommendations: Strategies to strengthen women and reducing gender inequalities

Being the primary energy producers and users for the household, it is a globally accepted that poor women particularly in rural areas continually face energy-related hurdles, including having to collect wood and the time and labour this requires and health problems from burning and collecting wood. Despite this reality, the main energy related policies in Bhutan including the recent Alternative Renewable Energy Policy 2013 which will serve as the main guiding policy for any renewable energy related interventions does not have any gender or pro-poor considerations. Some of the opportunities for gender mainstreaming present currently in the Bhutan energy sector are as follows:

Include gender issues in the rules and regulations of the energy policy

Since the development of the rules and regulations for the implementation of the Alternative Renewable Energy Policy 2013 is currently underway, it provides an opportunity to ensure that gender and pro-poor considerations are integrated in the rules and regulations which will eventually guide the implementation of the policy.

¹⁰ UN Country Analysis Report Bhutan 2012, “Between traditions and modernity”

Gender and pro-poor considerations can also be integrated into the proposed Master Plan for Renewable Energy Technologies; and in the Formulation of energy efficiency policy and Energy Efficiency rules and regulations; that are included in the draft 11th FYP of the DRE.

Specifically, energy infrastructure programme documents should set out explicit objectives for women's energy access, especially disadvantaged groups such as female headed households, addressing issues affecting women in socio economic surveys prior to implementing energy projects, participation in managerial and decision making, and labour mobilization. Where socio-economic studies incorporating gender concerns are done prior to implementation, there should be clear mechanisms for linking these to programme design. Programme documents should also specify time frames, budgets and human resources needed to achieve this, including training of personnel, and appropriate implementation and organizational procedures.

Ensure participation of women in energy sector planning

Stipulate targets for representation of existing women's associations and women's NGOs in energy policy planning through public consultations, and provide leadership and confidence building training to these organizations to ensure their effective participation in the public consultations.

It would be useful for DRE to engage with relevant stakeholders including the NCWC and local NGOs who are also active in the energy sector and in promoting women's equality in Bhutan (such as Tarayana) which can result in energy specific gender and pro-poor considerations that need to be included in the policy. This can be annexed as an addendum to the existing policy (the possibility needs to be discussed and convinced with the relevant authorities) and included as part of the .

Provide women with energy-related information and training

Involve women in training on technical and business development aspects of energy projects, and ensure that they have access to information on available energy options and provisions. Alternative communication channels may need to be employed for dissemination of information to women, especially in remote locations, for example, internet cafes, rural radio, women rural development societies etc.

The ADB funded Solar Warriors project and the "Advancing Economic opportunities of Women and Girls" provide some insights and lessons into training women, which is relevant for future activities:

- Consulting community leaders in selection of participants
- Working with local CSOs terms of up-scaling and sustainability
- Formation and working with self-help groups, especially in the area of income generating activities
- Building on already existing skills (Basic tailoring program; Hairdressing; Basic embroidery program; Basic electrical home appliances repair program)
- Use of local institutions and local graduates from the Technical Training Institutes in providing training to the local community

Build capacity of energy sector institutions

The discussion with the DRE personnel revealed that to some extent, sex disaggregated data is collected during the implementation of energy related activities. However, this disaggregated data is not really used due to the limited capacity of the implementing institutions. Therefore, it is recommended that a workshop on gender mainstreaming in the energy sector be carried out for implementing institutions.

The gender workshop should include sessions on gender issues and gaps relevant in the context of Bhutan, specific issues that need to be addressed, links between these and the energy sector in terms of how energy sector interventions can address some of the gender gaps, share good practices in gender mainstreaming from energy and other sectors in Bhutan, identify specific entry points and provide tips on integrating gender in their work.

In particular the workshop can focus on the following based on the mandates of one of the key implementing institutions in the energy sector in Bhutan the BPC, including its social mandates:

- To ensure that both women and men equally benefit from the BPC electrification schemes
- To ensure that both women and men equally can take part in the BPC activities
- To ensure that all trainings/seminars/workshops organized by BPC are conducted in a gender responsive manner

This workshop can provide a forum for dialogue on gender between the government institutions and the civil society and it is suggested that gender specialists from the NCWC and local NGOs (engaged in gender work such as Tarayana and RENEW) be invited to the workshop.

4.2 Recommendations for integration of gender into ADB's energy sector work in Bhutan

ADB's gender policy (ADB, 1998), the Gender Plan of Action (ADB, 2007) and the gender, law and policy toolkit (ADB, 2007) reiterate ADB's commitment on mainstreaming gender and it provides the basis for gender mainstreaming in all of ADB's projects and programmes. In Bhutan, ADB's gender mainstreaming policy can be concretized with the development of a gender mainstreaming strategy for the energy sector given ADB's active support in this sector. This will

- enhance ADB's overall goal in reducing rural poverty and promoting inclusive growth in Asia and the Pacific;
- strengthen the development effectiveness of all ADB supported operations ensuring that gender and pro-poor being fully integrated into the planned project activities;
- ensure that both women and men (from all segments of society) equally participate in and benefit from project activities;
- an enabling environment is created for effective gender and pro-poor mainstreaming in ADB projects in Bhutan; and
- the capacity of project staff and other relevant stakeholders to understand and address gender and pro-poor aspects in their work and accountability is enhanced.

Assist RGoB to mainstream gender in the sectoral plans for 11th FYP

ADB's greatest opportunity lies in the special gender considerations that are outlined in the 11th Five Year Plan guidelines issued by the GNHC which is required to be used by all Ministries and departments when drafting their 11th FYP. It highlights the following:

- Concerned sectors shall be responsible for addressing gender gaps by integration into their plans and programmes on the basis of gender analysis. The Gender Responsive Budget Strategy shall be developed and implemented to facilitate the conduct of gender responsive activities. Subject to relevance, laws, legislations and policies will be reviewed from a gender perspective.
- The network of Gender Focal Points will be effectively used to achieve the results outlined in the Plan, and the institutional capacity of the National Commission for Women and Children will be enhanced.

- Each sector shall mainstream gender issues while formulating the Eleventh Plan and strengthen the collection of sex-disaggregated data.

Thus, using the GNHC guidelines as a basis, the ADB should support the DRE in making sure that financial resources are allocated for gender mainstreaming in the energy sector in Bhutan. Specific capacity building on Gender responsive budgeting would raise the awareness on the importance of integrating gender in the planning, implementation and monitoring of the energy projects. For this, there is the possibility of either teaming up with UN or if possible ADB can take the lead in organizing a specific gender responsive budgeting for the energy sector.

Sector coordination and alignment with other gender and energy projects

Currently, there are several projects aimed at enhancing rural women's economic opportunities, both on going and in the pipeline (personal communication, UNDP and MoLHR). Specifically the ongoing UNDP Project "Bhutan Sustainable Rural Biomass Energy (SRBE)" aims at promotion and dissemination of efficient cook stoves in the rural areas of Bhutan and implementation of demonstration biomass energy technologies in relevant industries. The NCWC and MoLHR project "Advancing Economic opportunities of Women and Girls" has identified district specific livelihood enhancement opportunities and training in four districts of Samtse, Zhemgang, Trashigang and Pemagatshel. There are other projects being implemented by CSOs such as the Tarayana Foundation and BAOWE (Bhutanese Association of Women Entrepreneurs) that needs to be explored further for possible linkages.

Discussions with People's Representatives in Zhemgang indicated that there are plans of developing an economic hub concentrating on reviving the food processing plant, a dairy processing plant and a processing plant related to NTFPs in Zhemgang. The development of this economic hub offers good potential to link with the ongoing ADB JFPR grant.

Create favourable conditions for women to increase their participation in the energy sector

Since the current scenario in the energy sector (with particular reference to the DRE) shows male dominance especially in the decision making positions, it is recommended to make HRD (human resource development) policies favourable for women to climb up the ladder to decision making positions. Furthermore, with the current practice of using graduates from the technical training institutes as trainers by the MoLHR in its rural training programmes, it is recommended to encourage female trainers who can then also serve as role models for the female participants, the more women engagement and uptake of existing female personnel the recruitment policies in the energy sector

Promote use of energy for productive purposes for women

Women make a vital contribution to household incomes, particularly in the case of households headed by females. Energy sector strategies and interventions need to enable women to enhance their incomes and livelihoods, for example, through processing of food and crops. They also need energy services for their traditional income-generating activities (e.g. small-scale farming, food processing and informal production and marketing activities) as well new types of entrepreneurial activities. Additional inputs that are needed to translate energy inputs into increased incomes is capacity building of women in business management, technical skills, leadership and linked with convenient financing options to support new business opportunities. Such targeted policies and actions can relieve women's household burdens and enable them to engage in more profitable enterprises which can then lead to greater economic independence and security for women. Support the national government in undertaking pilots and up-scaling them that train and empower women to utilize energy services including electricity for income generation and livelihood strengthening, the ongoing JFPR Grant is a step in this direction, the lessons from which need to be integrated into other energy sector projects and programmes.

Monitor energy sector projects in terms of their impacts on men and women

In all energy sector projects, track to what extent women and disadvantaged groups are able to access electrification inputs can ensure equitable economic benefits from such projects and maximize the effectiveness of investments. Projects also need to track other non-monetary benefits that energy services offer such as improved security, improved safety for children, more time available, and improved health.

The 2010 ADB evaluation study (ADB, 2010a) established a number of indicators to evaluate the socio economic impacts of electrification on men and women. Using the indicators and data from this study as baseline, ADB could assist the government in monitoring progress in economic, environmental, and social impacts of RE over time for completed, on-going, and planned new projects. Indicators on household income (farm and nonfarm), employment, household expenditure on and consumption of different energy sources, incidence and intensity of smoke-related health ailments, time spent by adults and children in learning within and outside home, quality of graduates, permits issued for felling trees for household and business purposes, type and quality of asset ownership, changes in gender roles in household decision making, damage due to theft or wildlife, etc. could be included, as relevant in on-going and planned RE projects in Bhutan.

Annex 1.

List of documents reviewed and references

- ADB, 2012. **ADB Interim Country Partnership Strategy**, September 2012, Bhutan, 2012–2013.
- ADB, 2010a. **Asian Development Bank's Assistance for Rural Electrification in Bhutan—Does Electrification Improve the Quality of Rural Life?**.Asian Development Bank, Manila.
- ADB, 2010b. **Evaluation Study, Bhutan Energy Sector**, Reference Number: SAP BHU 2010-21 Sector Assistance Program Evaluation. August 2010 .Independent Evaluation Department, Asian Development Bank.
- ADB, 2009. **Powering the Poor: Projects to Increase Access to Clean Energy for All**.Asian Development Bank, June, 2009.
- ADB, 2007. **Gender and Development Plan of Action (2008-2010)**. Asian Development Bank, December 2007.
- ADB, 2006. **Gender, Law, and Policy in ADB Operations: A Tool Kit**.
- ADB, 1998. **Gender Strategies and Policies, Gender and Development**.
- DRE, 2013. **11th Five year Plan**, Finalised Draft, June 2013, Department of Renewable Energy, Ministry of Economic Affairs, Royal Government of Bhutan
- DRE and UNDP 2012. **Bhutan Energy Efficiency Baseline Study**, Final Report, December, 2012. Prepared for: Department of Renewable Energy (DRE), Bhutan and United Nations Development Programme (UNDP), Bhutan
- Gross National Happiness commission, 2012. **Guidelines For Preparation of the Eleventh Five Year Plan (2013-2018)**, GNHC 2012.
- ICIMOD, 2012. **Presentation on Gender and Climate Change Adaptation Strategies, Opportunities and Policies for Mountains**. Asun St. Clair, CICERO, Lead Author, IPCC AR5 and Ritu Verma, Division Head Gender & Governance, ICIMOD
- Institute for Management Studies, 2011. **Study report on Women's Political Participation in 2011 Local Government Election**.Submitted to NCWC.
- Leduc, Brigitte, 2009. **Gender and Climate Change in the Himalayas**. Background paper for the e-discussion from 5 to 25 October 2009 on 'Climate Change in the Himalayas: The Gender Perspective' organized by ICIMOD and APMN
- Ministry of Economic Affairs. 2010. **Integrated Energy Management Master Plan for Bhutan**.
- Ministry of Economic Affairs, Annual Report, 2010-2011
- Ministry of Education, Royal Government of Bhutan, 2011. **Annual Education Statistics, 2011**.
- Ministry of Labour and Human Resources, Royal Government of Bhutan, 2011. **Labour Force Survey Report, 2012**.
- National Statistical Bureau, RGoB and Asian Development Bank, 2013. **Bhutan Living Standards Survey, 2012**.
- National Statistics Bureau, Royal Government of Bhutan, UNICEF and UNFPA, 2011. **Monitoring the situation of children and women**. Bhutan Multiple Indicator Survey 2010.
- Palit, Debajit and Shirish Garud. 2010. **Energy consumption in the residential sector in the Himalaya kingdom of Bhutan**. Boiling Point, 58: (34-36).
- Royal Government of Bhutan, 2013. **Alternative Renewable Energy Policy 2013**, April, 2013.

- Royal Government of Bhutan, 2012. **State of the Nation Report, 2012.**
- Royal Government of Bhutan and UNDP, 2011. **Bhutan National Human Development Report 2011. Sustaining Progress: Rising to the Climate Challenge.**
- Royal Government of Bhutan, 2010. **Economic Development Policy of the Kingdom of Bhutan, 2010**
- Royal Government of Bhutan, 2008a. **The Bhutan Sustainable Hydropower policy 2008**
- Royal Government of Bhutan, 2008b. **11th Five Year Plan Guidelines**, GNHC, Bhutan
- Royal Government of Bhutan, undated. **National Plan of Action for Gender, 2008-2013.** Gross National Happiness Commission, National Commission for Women and Children, Royal Government of Bhutan
- SNV, 2012. **Gender and Poverty Analysis Study for Laurigeog, Samdrup Jongkhar.** A Report.
- SNV, 2011. **Pro-poor Support Mechanisms in Lhuentse.** A Report.
- TERI, 2005. **Integrated Energy Management Master Plan Survey.** The Energy and Resources Institute, New Delhi, India.
- UN, 2012. **UN Country Analysis Report Bhutan 2012, “Between traditions and modernity”**
- UNDP 2013. **Human Development Report 2013.** The Rise of the South: Human Progress in a Diverse World.
- UNDP 2012a. **Towards an Energy Plus approach for the poor: A review of good practices and lessons learned from Asia and the Pacific.** UNDP Asia Pacific Regional Centre
- UNDP, 2012b. **Gender and Climate Change Africa Policy Brief 3.**
- UNDP, 2012c. **Augmenting Gross National Happiness in a remote Bhutan community: Community-based micro-hydro for livelihoods enhancement;** Towards an ‘Energy Plus’ approach for the poor: A review of good practices and lessons learned from Asia and the Pacific, 2011
- UNESCAP/UNISDR, 2010. **Asia Pacific Disaster Report 2010.**

Annex 2. Persons met

Mr. Mewang Gyeltshen, Head of the Alternate Energy Division, DRE, RGoB

Ms. Nim Dem, Officer, Alternate Energy Division, DRE, RGoB

Mr. PemaDakpa, People's Representative in the National Council for Shemgang

Ms. Pema Lhamo, Ex- People's Representative in the National Council for Shemgang

Mr. Karma Rapten, Head, Environment Unit, UNDP

Mr. Pema Dorji, Environment Unit, UNDP

Mr. Phuntsho Norbu, Programme Officer, MoLHR

Annex 3.

Key informant interview guide

ADB project on “Improving gender-inclusive access to clean and renewable energy in Bhutan, Nepal and Sri Lanka”

Before you interview a key informant, you need to obtain her/his consent to participate in the research. Please provide all the information you need to provide all the information regarding the Project and the baseline survey and get consent from the key informant.

Key informants can include relevant personnel from the Department of Renewable energy (a mix of women and men); both current and ex-People’s Representatives from Shemgang (a mix of women and men), relevant personnel from the Bhutan Power Corporation, local gender and social inclusion experts, etc.

Introduction

Introduce yourself and the note-taker;

Insist on confidentiality.

Name of the Key Informant:

Position/organization:

Gender:

Mobile number:

Key Questions:

- Your awareness on the current ADB project or any other ADB supported projects in the energy sector.
- Your awareness on the current gender and social issues in Bhutan in general. How are these prevalent in the energy sector?
- Gender and social issues in rural Bhutan, particularly in Shemgang?
- In your opinion, how can these issues be reduced? Any link to the energy sector?

Questions for persons from the DRE:

- How is the energy sector organized? Key statistics: supply side (total energy consumption, by energy form), role of electricity, renewable, coal, petroleum, biomass, demand side (by sector), percentage (including rural urban) electrified, cooking energy (access to modern fuels for cooking and heating)
- Main sub-sectors and institutions ministries/ departments
- Energy policy framework , main policy developments and current policies/ guidelines, existing targets

Gender in energy sector policies:

- Do the policy measures consider the potentially differential benefits/impact on men and women to increased access and affordability to energy services especially:
- extension of power grids,
- promotion of renewable technologies and decentralized energy systems
- increased availability of liquefied petroleum gas (LPG) and Kerosene

- sustainable use of biomass and biomass based technologies, etc.
- Has the potential negative impact of the policy measures been considered (e.g./ potential increased burden on women or social isolation of men)?
- Is the energy policy informed by national policy on Gender Equality, frameworks on Women Rights/Gender Equality or national development plans?
- Was there a public consultation with women and men (as beneficiaries/consumers) in the formulation in of the policy? How did the policy planning and formulation make use of the results of the consultation? Were gender experts involved in the formulation of the policy?
- Are sex-disaggregated data and gender statistic collected and used systematically in planning and reporting?
- What are the prospects and challenges in collecting and analyzing sex disaggregated data and gender statistics in the energy sector?
- Do the organizations that will implement the energy policy have the capacity and resources to work with gender mainstreaming strategy?
- What is the attitude of key actors in the implementation of the policy to a gender responsive energy policy?
- Do women's organization, networks, and gender experts advised or participate in the implementation of the energy policy.
- Are there separate budget allocations for women's empowerment and gender mainstreaming (e.g. gender trainings)
- To what extent have gender issues been taken into consideration in subsidies, tax incentives, tariff, and other financial mechanisms in the energy sector?
- Are there incentives to support small and informal sector businesses?
- Are there gender-sensitive indicators for monitoring or evaluation i.e. tracks progress and measure differential impact on men and women?
- Does the communication strategy for informing various publics about the existence, progress and results of the energy policy include a gender perspective?
- Do women's organizations and gender experts have a role in these public arenas?

Gender organizational assessment of the Department of Energy:

- What is the group's understanding/awareness of gender and energy? Is the group aware of how international and national gender commitments (National Gender Policy, Beijing Platform for Action, MDG 3 etc.) on gender are being implemented and has this influenced their work?
- Does the group feel that DoE's organizational policies, strategies and procedures include gender considerations? If so, do they understand it and how has it influenced their work?
- What initiatives have been taken by management to promote capacity building on gender?
- Is there a specific post for gender staff in DoE? How does the group rate its level of expertise: knowledge, skills and attitude?
- Does the group interact actively with national gender institutions and women's organizations working for women's advancement or with international gender networks for gender equality?
- Does the group collect and use gender-disaggregated in planning, monitoring and reporting?
- Are financial resources allocated for gender mainstreaming? Are these adequate? Is the format for budget reporting used by the group disaggregated by gender according to activities, research, area of work, etc.?
- Are there any recommendations and/or suggestions from your side on improving the current gender situation in Bhutan? In rural areas, particularly in Shemgang and in the energy sector?

THANK YOU AND TASHI DELEK!

Annex 4.

Programme agenda: Knowledge sharing workshop on gender review

Understanding gender status of existing energy sector policies, strategies and practices in Bhutan

Project: Improving gender-inclusive access to clean and renewable energy in Bhutan, Nepal and Sri Lanka (ADB GRANT 9158 REG).

Date: 1st October 2013

Venue: Auditorium, RSPN, Kawajangsa, Thimphu

09:00 – 09:30	Registration of participants
09:30 – 09:40	Welcome note by Dr. Lam Dorji, Executive Director, Royal Society for Protection of Nature, Thimphu
09:40 – 09:50	Opening remarks by Mr. Karma Tshering, Director, Dept. of Renewable Energy, MoEA.
09:50 – 09:55	Introduction of participants.
09:55 – 10:05	Workshop and project introduction by Mr. Tshering Phuntsho National Project Manager, RSPN.
10:05 – 10:15	Presentation on International experience on Gender by Ms. Soma Dutta, ETC Foundation, Netherlands.
10:15 – 10:45	Group Photo followed by TEA BREAK
10:45 – 11:30	Presentation on Gender Review: Understanding gender status of existing energy sector policies, strategies and practices in Bhutan, by Ms. Tshering Choden, Gender Consultant.
11:00 – 12:30	Panel Discussion and Q&A
12:30 – 01:00	Presentation on Base line survey report of the Project Area (Lower Kheng) by Mr. Tshering Phuntsho, National Project Manager, RSPN.
01:00 – 01:20	Q&A
01:20 – 01:30	Wrap up and Vote of Thanks by Project Manager.
01:30 – 02:30	****LUNCH BREAK****

(All participants are invited for a luncheon at Level 1, RSPN Building)

Annex 5.

Impacts of rural electrification on women: A summary from global literature

Electrification brings about improvements in lives of women in many ways. This section presents the empirical evidence on the impacts of electrification on the lives of men and women, drawn from experiences around the world Literature:

- Electricity makes the activities already being performed by women easier, convenient and more comfortable. Electrical lighting offers the advantage of better luminosity, and increases the available time for women to perform childcare and household chores (Haves, 2012). The flexibility home lighting offers women to manage their times is appreciated greatly (Dutta 2005, Barkat et al., 2002; Winther, 2008).
- Access to television and media is a much- appreciated benefit that electrification enables, both among men and women (Barkat Khan et al., 2002; Everts and Shulte, 1997; Mukhopadhyay, 2004, cited in Dutta, 2005, Masse & Samaranayake, 2002).
- Electricity makes possible the use of electrical appliances, which makes it easier for women to perform tasks which were earlier being performed manually, such as grinding. Even though the impact of electrification by using electrical appliances is positive for the poor, the benefits are restricted due to restricted purchasing power. It was found in the EnPoGen study in Sri Lanka by Masse & Samaranayake, 2002 that most poor families have only the basic equipment such as indoor lighting (100 per cent), radios (90 per cent), TVs (63 per cent), and electric irons (44 per cent); and cheap equipment such as convenient water heaters (36 per cent) (Masse & Samaranayake, 2002).
- One of the expectations from electrification is that women would use the opportunity of having access to electricity to launch productive activities at home. However, it was seen that in absolute terms, the development of productive activities among women remains low (Ramani and Heijndermans, 2003).
- An important area of impact of electricity is productivity and income gains. Kandker et al. (2012) in their paper titled “Who Benefits most from Rural Electrification? Evidence in India” report that impact of electrification on labour supply is more positive for women than for men. Household access to electricity increases employment hours by more than 17 per cent for women and 1.5 per cent for men. In Bangladesh (World Bank, 2010) with rural electrification, textile and garment industries are being established and provide jobs to poor rural women (predominantly) and men.
- The most widely experienced benefit of lighting in terms of income generation is the extension of working hours and keeping shops and businesses open until late at night (IDS, 2001; Khan, 2001; Madon and Gardiner, 2002; Wilkinson, 2002, cited in Dutta, 2005). A number of studies however caution about expectations from incomes resulting from electricity as income from village enterprises and businesses depends on the quantity of electricity supply, the time lag since electrification, investment capacity, and access to markets. (Ramani and Heijndermans, 2003; Kooijman-van Dijk, 2010; UNDP, 2011; WDR, 2012). Although access to electricity can, in principle, be important input in earning a living, energy availability by itself is not enough, and a range of complementary inputs are needed to enable men and women to make monetary gains from electricity.

At the same time, poverty itself is a determinant of how electricity is used. Wealthier households consume more electricity in many more ways compared to the poorer ones,

whose electricity consumption is limited to lighting. Also, estimates of benefits of rural electrification are highly dependent on the reliability of electricity supply. Villages with power outages have found to have an electrification rate of 81 per cent, while those with more than 20 hours of power outages have an electrification rate of only about 38 per cent, which affects their electricity consumption (Kandker et al., 2012).

- Electrification is seen to have a direct link with reading and education for children, adolescent girls who are mostly required to assist their mothers in household work, as well as for women. Children can study after dark, television and radio help to reach out to the masses with information and media, which are known to affect people's behavior and makes them aware of their rights. In a study on rural electrification in Bangladesh (Berthaud, 2004), As high as 64 per cent of those women having knowledge in the electrified households reported TV as the main source of knowledge, the corresponding figure for TV was 34 percent in the non-electrified households and 19.1 percent in the non-electrified villages. A survey of 5,000 households in India revealed that 90 per cent of the women who spent some time reading resided in homes with electricity. About 90 per cent of the women who pursue some reading during a typical day are in households with electricity, compared to 2 percent in households without electricity (Barnes and Sen, 2004).
- Apart from indoor benefits, public infrastructure such as street lights makes women feel safe and enables them to attend community meetings or gatherings. The presence of electricity in school makes way for better infrastructure and facilities like computer labs.
- At the community level, health facilities, such as rural clinics, play a key role in helping people keep good health. Rural electrification can play a role in enabling health facilities to run equipment and appliances (that need electricity), refrigeration for vaccines, lighting for emergency services such as operations and deliveries at night.
- Electrification, through the services it enables like televisions, education, mobile phones, can build women's strategic interests.

