

GENDER MAINSTREAMING TO STRENGTHEN COMMUNITY BASED RENEWABLE ENERGY SYSTEMS IN THE PHILIPPINES



sibat

Sibol ng Agham at teknolohiya

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Contents

GENDER MAINSTREAMING TO STRENGTHEN	1
COMMUNITY BASED RENEWABLE ENERGY SYSTEMS IN THE PHILIPPINES	1
List of Acronyms	3
Executive Summary	4
1. Introduction and Background	6
1.1 Introduction	6
1.2 Mainstreaming gender in Community Based Renewable Energy System (CBRES) projects	6
2. The context for gender mainstreaming in CBRES	8
2.1 Gender issues in the Philippines: the Gender Empowerment Measure (GEM)	8
2.2 Gender, energy and water nexus	8
2.3 The enabling framework for gender in the Philippines	9
2.4 Gender concerns in energy policy	9
2.5 Gender, energy and water issues in CBRES projects	9
3. The process of mainstreaming gender: methodology	11
3.1 Literature review	11
3.2 Gender institutional assessment	11
3.2.1 Background	11
3.2.2 Baseline assessment of existing projects	13
4. The outputs of gender mainstreaming in CBRES	16
4.1 Gender Action Plan (GAP)	16
4.2 Monitoring plan	19
4.3 Human resources and financing	19
5. Initial results of the gender mainstreaming process	20
5.1 Key strategies and processes	20
5.2 Results of gender mainstreaming in CBRES	20
5.3 Impact of gender mainstreaming on women and men in the project areas	22
6. Lessons from implementing gender mainstreaming in the CBRES Project	23
7. Challenges encountered in the gender mainstreaming process	24
Annex 1: Bibliography	25
Annex 2: A profile of some MHP communities	26
Annex 3: Existing tools being utilised for planning in CBRES	30

List of Acronyms

APFED	Asia Pacific Forum for Environment and Development
AT	Appropriate Technology
CADAGUPAN	Caguyen Farmers Association
CBRES	Community Based Renewable Energy Systems
CSWCD	College of Social Work and Community Development
DOE	Department of Energy
EDNCP	Episcopal Diocese of North Central Philippines
EED	Evangelischer Entwicklungsdienst (Church Development Service)
FS	Feasibility Study
GAD	Gender and Development
GAP	Gender Action Plan
GEM	Gender Equity Measure
LUELCO	La Union Electric Cooperative
MDG	Millennium Development Goal
MHP	Micro Hydropower
MISEREOR	German Catholic Bishops' Organisation for Development Co-operation
MTDP	Medium Term Development Plan
NCRFW	National Commission on the Role of Filipino Women
NGO	Non-Governmental Organisation
PFS	Pre Feasibility Study
PO	People's Organisation
PVWP	Photovoltaic Water Pumping
RE	Renewable Energy
SA	Sustainable Agriculture
SIBAT	Sibol ng Agham at Teknolohiya or Wellspring of Science and Technology
Sida	Swedish International Development Cooperation Agency
SWS	Small Wind System
TESDA	Technical Education and Skills Development Authority
TWG	Technical Working Group
UNDP	United Nations Development Agency
UNDP-GEF-SGP	UNDP Global Environment Facility, Small Grants Programme
UCCP	Uniting Church of Christ in the Philippines
VLSD	Village-level Sustainable Development
VSO	Voluntary Service Overseas
WDTI	Women Development and Technology Institute

Executive Summary

The SIBAT organisation (Sibol ng Agham at Teknolohiya or 'Wellspring of Science and Technology') develops Community Based Renewable Energy System (CBRES) projects as part of its work in promoting appropriate technology in the Philippines. The projects provide small, decentralised power supply systems in poor, rural communities to meet energy needs such as household and community lighting, food and crop processing, pumping for potable water and irrigation, and other livelihood-related requirements. The renewable energy systems used in CBRES projects include: micro hydropower systems for electricity generation, milling and water pumping; solar photovoltaic water pumps; and small wind turbines and pumps. The projects are mainly implemented by NGOs and local people's organisations

CBRES projects are based on principles of social equity, community participation and environmental justice. SIBAT's framework for developing CBRES projects includes the empowerment of rural women as a main indicator of relevance and success, but during the first phase of the programme (1998-2007) the projects failed to integrate women's empowerment processes adequately, focussing primarily on community organisation and technical viability issues. During Phase 2 implementation, SIBAT sought to incorporate gender mainstreaming into the programme and system processes, recognising that women and men are developers and users of energy technologies and that they are affected by technology development in different ways, for example, in the roles they play and benefits they may derive.

The project '*Strengthening Community Based Renewable Energy Systems through Gender Mainstreaming*' was conceptualised in partnership with the ENERGIA International Network on Gender and Sustainable Energy as a way of integrating gender concerns and processes in SIBAT's mission to provide Community Based Renewable Energy Systems for rural development.

In the Philippines, women in rural areas, especially in indigenous communities, collect firewood and cook over smoky fires, with substantial burdens relating to health and time use. Indoor air pollution caused by wood-burning stoves, and by kerosene lamps and pine piths used for lighting, lead to eye and respiratory diseases. Lack of adequate fuel limits people's ability to boil water to sanitise it for drinking and hygiene purposes, and thus increases the likelihood of water-borne diseases.

Water collection problems can be even more serious. For example, in Sitio Takilay, a SIBAT study for a solar powered water pump found that women and children were walking 4 hours per day up and down the hill to collect water from two small springs located 500 metres away. They were not able to supply enough water to meet their needs for drinking, cooking, washing and bathing. As a consequence, illnesses such as diarrhoea, dehydration, allergies and skin disorders were common, especially among the women and children. Access to energy for mechanised power allows clean water to be pumped for easier availability, improving health conditions and relieving women's burdens.

Despite an overall plan calling for gender equity in government programmes, gender concerns are not an integral element of the government's energy policy in the Philippines. Whenever gender issues are considered, they are usually considered as separate components or addenda without any link to the main energy policies or programmes. The traditional approach to energy policy development and planning is 'gender-neutral'.

The gender audit conducted as part of the ENERGIA gender mainstreaming project raised awareness among SIBAT staff about gender goals, concepts and processes necessary to achieve gender equality. SIBAT has increased the commitment and capacity of the organisation to work towards gender equality, and thereby sought to improve its energy projects, as well as other appropriate technology projects.

The Gender Action Plan (GAP) for CBRES has the overall goal of promoting gender equality and empowering women. Among the expected outcomes are:

- Rural community women taking the lead in CBRES, and in CBRES enterprise establishment, management and sustainability.

- Increased economic opportunities for rural women emerging from CBRES.
- Skills of rural community women enhanced in the areas of management and technology.
- Improved wellbeing of women emerging from CBRES and women's participation in its development.
- Gender policy institutionalised within the SIBAT organisation.
- Increased capacity of SIBAT staff to mainstream gender.

SIBAT has hired a Gender Focal Point to serve as a key resource person on gender issues and concerns for the whole organisation, developed a training module on gender mainstreaming, and conducted training workshops for SIBAT staff and partner NGOs and people's organisations. There has been formal incorporation of gender-sensitive instruments and research methods in CBRES project development activities, including household surveys, pre-feasibility and feasibility studies, focus group discussions, community training and impact evaluations. There are plans for additional gender training for staff within other SIBAT programmes and appropriate technology projects.

At the community level, the capacities of local women to manage and sustain CBRES projects have been enhanced and continue to be strengthened. At some sites, women participate actively in the operation of the technologies. This has been accompanied by gender-friendly technology innovations. For example, the original valve for a micro hydro system, which was deemed too big and cumbersome for women to operate, was replaced with a butterfly valve, which was more manageable for the comparatively smaller hands of women.

There is an increased focus on ways that CBRES projects can help raise women's productivity and incomes, and cut down on their daily labour. Access to water pumps has reduced the difficulties of fetching water for household use, gardening and livestock raising, and minimised water-borne diseases, which in turn has reduced women's work in looking after sick children and other family members.

CBRES projects providing electricity to run rice mills have also succeeded in cutting women's manual labour hours. Indigenous women, who used to pound rice for every meal, every day, have particularly benefited from this initiative. However, as electric rice milling has been taken over by men, this has led to less participation by women in post-harvest production, and the possible loss of women's roles as custodians of seeds for the next planting season. SIBAT has recognised the need for more study regarding the impacts of electric rice mills on the roles of men and women.

With increased gender consciousness within the SIBAT organisation, attention has also been given to strengthening gender concerns in SIBAT's administrative work and procedures, resulting in new policies on hiring women, addressing their particular health concerns, and identifying other benefits for women.

1. Introduction and Background

1.1 Introduction

A part of its Phase 4 activities (2007-2011), ENERGIA, the International Network for Gender and Sustainable Energy, assisted a number of energy projects in mainstreaming gender issues. The initiative, supported by the Swedish International Development Cooperation Agency (Sida), aimed to showcase how gender-specific impacts can be generated through rural energy access projects, and to utilise the outcomes of these projects to exemplify how such impacts could be multiplied, given both commitments by stakeholders and the availability of gender-specific resources.

This case study report documents the process and outcomes of gender mainstreaming in the SIBAT organisation in the Philippines between 2009 and 2011.

1.2 Mainstreaming gender in Community Based Renewable Energy System (CBRES) projects

SIBAT (Sibol ng Agham at Teknolohiya or 'Wellspring of Science and Technology') spearheaded the establishment of Community Based Renewable Energy System projects in 1994 as an integral component of its mission to promote appropriate technology in the Philippines. Today, SIBAT continues to be in the forefront of developing CBRES projects implemented by NGOs and people's organisations.

The renewable energy systems used in CBRES projects include micro hydropower systems (MHPs) for electricity generation, milling and water pumping, solar photovoltaic water pumps, and small wind turbines and pumps.

CBRES projects are small, decentralised power supply systems built mainly to supply energy for rural poor communities in the Philippines. CBRES particularly seeks to address village-level energy needs, such as household and community lighting, food and crop processing, pumping for potable water and irrigation, and other livelihood-related requirements. CBRES projects are underpinned by the principles of social equity, community participation and environmental justice. National CBRES conferences are convened by SIBAT every three years.

SIBAT's framework for developing CBRES projects, which was formulated in 1994, includes the empowerment of rural women as a main indicator of relevance and success. During Phase 1 of the implementation of the CBRES Programme (1998-2007), projects were piloted and replicated in rural off-grid communities. SIBAT successfully installed 14 community based MHPs and was in the process of completing five MHPs, six solar photovoltaic water pumps, and two solar wind turbines during this period. The focus was primarily on community organisation and technical viability objectives and the project failed to integrate women's empowerment processes adequately.

During Phase 2 implementation, SIBAT sought to incorporate gender mainstreaming into the programme and system processes, recognising that women and men are developers and users of energy technologies and that they are affected by technology development in different ways, for example, in the roles they play and benefits they may derive.

The project 'Strengthening Community Based Renewable Energy Systems through Gender Mainstreaming' was conceptualised in partnership with ENERGIA as a way to integrate gender concerns and processes in SIBAT's pursuit of its mission to serve rural development through CBRES projects. Three MDGs are applicable to this project: Goal 1 – to eradicate extreme poverty and hunger; Goal 3 – to promote gender equality and empower women; and Goal 7 – to ensure environmental sustainability.

The criteria used by CBRES projects to identify target communities included:

- Poorest communities that have strong and active farmers, women, and/or indigenous groups acting for and on behalf of these communities.

- Presence of potential project stakeholders namely, NGOs, local government units or faith based organisations.
- Off-grid communities with little possibility for grid connection.
- Availability of a high potential energy resource (water, wind, biomass or solar).

In the gender mainstreaming process, SIBAT received assistance from several other groups in addition to ENERGIA.

- The ENGENDER (energy-gender-water-poverty) Network and APPROTECH ASIA provided guidance in mainstreaming gender in CBRES projects.
- The Department of Women and Development Studies, College of Social Work and Community Development (CSWCD), University of the Philippines, Diliman, Quezon City. CSWCD provided gender advice and expertise, research, training and extension services.
- The Kasarian Gender and Indigenous People's Research Center, College of Social Science, University of the Philippines, Baguio City provided particular knowledge and expertise on issues regarding gender, indigenous people and the Cordillera Administrative Region.

2. The context for gender mainstreaming in CBRES

2.1 Gender issues in the Philippines: the Gender Empowerment Measure (GEM)

According to the 2001 UNDP Human Development Report, the Philippines ranked 46th out of 64 countries in the Gender Empowerment Measure (GEM). Women's participation in the labour force was relatively high in comparison to other Asian countries. In terms of the Gender Related Development Index (GRDI), the country was in the middle range of gender equity development.

Although overall gender equity is high, there are regional disparities, particularly in the southern Philippines. There are considerable opportunities to reduce the gender gap in key areas, such as access to basic social services including education, health and water, as well as productive resources, financing and opportunities. Several development projects have been designed with the intention of narrowing the gender gap in rural development, including: the proposed Mindanao Basic Education Development Project and Education Sector Development Programme; the proposed Mindanao Community Based Forest Resources Management Project; and the proposed Upland Communities Development and Rural Microfinance Projects¹.

Women play a key role in informal industries. Nine out of ten enterprises in the Philippines are micro-enterprises. Among micro-entrepreneurs, women outnumber men two to one in the trade and repair sectors. Meanwhile, women's wages are generally around 60% of the wages earned by men for similar employment.

2.2 Gender, energy and water nexus

In the Philippines, women's roles as mothers and housekeepers can place them in vulnerable positions with regard to health problems related to use of inefficient cooking and lighting technologies. Conventional firewood cookstoves, and kerosene lamps and pine piths used for lighting, are smoky and inefficient and produce indoor air pollution. Incidences of eye and respiratory diseases are reported due to exposure to smoke from burning wood and kerosene.

Limited safe water supply for households is still a common problem in remote rural communities in the Philippines. In many indigenous communities where SIBAT works, women and children are subject to the daily task of fetching water from springs for household requirements.² Women's burdens related to this work take up a considerable amount of time, thereby reducing their productive hours.

Filipino women, especially in rural areas, are traditionally bound to take care of homes, and family – and also assist in productive work in farms, swiddens³ and home gardens. Meanwhile, in self-subsistence indigenous areas, the women pound rice each day. The lack of technologies to aid in easing daily household chores, including rice pounding, effectively forces women to undertake strenuous activities even during their childbearing years.⁴ This greatly limits the engagement of women in productive employment, community activities and political affairs, and this is reinforced by the social norms that give prominence to men in these spheres.

¹ Aldover, R., Regional Energy Programme for Poverty Reduction (REP-PoR) – Philippines, Country paper, 2005.

² In a case study written by SIBAT for a solar-powered water project in Sitio Takilay, Bgy. Sarabia, Koronadal, South Cotabato. Gathering of water for household use is one of the responsibilities of women. B'laans in Takilay fetching water (for drinking and cooking and for washing and bathing) from two small springs, located 500 metres downhill, is a difficult four hour trek back and forth for women and children. Thus, water fetching was drudgery, and a task that prevented women devoting their time to productive work. Women and children in the community could only fetch between about four and nine litres of water per person each day (or about 2.1 m³/day for the whole community). This was grossly inadequate in terms of meeting their needs and, as a consequence, illnesses such as diarrhoea, dehydration, allergies and skin disorders were common, especially among the women and children. B'laan history records outbreaks of diarrhoea that decimated the population.

³ An area cleared for temporary cultivation by cutting and burning the vegetation

⁴ In a case study done by SIBAT in a microhydro project in Tulgao, Tinglayan Kalinga, women and girls spend an average of about an hour a day in pounding rice to produce a ganta of milled rice for the daily meal. This exhausting and time consuming task brought drudgery to women and limits participation of women in community activities.

2.3 The enabling framework for gender in the Philippines

The Philippines has come a long way in upholding the rights of women. The National Commission on the Role of Filipino Women (NCRFW) is the primary government agency responsible for ensuring full integration of women in economic, social and cultural development at the national, regional and international levels, and for ensuring equality between men and women. Significant gender policies and institutions in the Philippines that are favourable for gender mainstreaming include the following:

- The Women in Development and Nation Building Act (Republic Act 7192), prohibits discrimination against women with respect to terms and conditions of employment, and provides a legal guarantee of equal rights and opportunities for women in work.
- The Philippine Plan for Gender Responsive Development 1995-2025 is a plan with a 30-year perspective. It outlines the policies, strategies, programmes and projects that the government must adopt to enable women to participate in and benefit from national development.
- The existence of a Gender and Development Focal Point and Technical Working Group in every government office, from the national level down to the village level, constitutes the mechanism for mainstreaming gender in government offices.
- Republic Act (RA) 8250, specifies that 5% of the budget in all government offices is to be utilised for gender and development programmes, projects and activities.⁵
- Other relevant legislation includes RA 7655, increasing the minimum wage of house helpers; RA 6972, the Day Care Centre Act; AO 241, calling for day care centres in all government and private offices; and RA 7882, establishing eligibility of women for loans to commence micro and cottage enterprises.

2.4 Gender concerns in energy policy

The Government's Medium Term Development Plan acknowledges women's involvement in all programmes and projects and the necessity for women's economic empowerment. The plan incorporates this by increasing women's representation at decision-making levels, and establishing monitoring systems for gender discrimination at work.

However, despite the overall plan for gender equity in government programmes, gender concerns are not considered as an integral element of the government's energy policy. Whenever gender issues are considered, they are usually considered as separate components or addenda without any link to the main policy or programmes. Meanwhile, guidelines developed have not been successfully practiced in implementation. The traditional approach to energy policy development and planning is 'gender-neutral'.

The Renewable Energy Act of 2008 (RA 9513) promotes the development, utilisation and commercialisation of renewable energy resources. The Renewable Energy Sector is under the Department of Energy. Although the Department of Energy has created a Gender and Development Focal Point and Technical Working Group within the department, it did not mainstream gender concerns in its Renewable Energy Policy. The Implementation Rules and Regulations are also silent on gender.

2.5 Gender, energy and water issues in CBRES projects

In the context of CBRES, there are a number of points with reference to energy, gender and water that provide a perspective for the project areas. (However, 'gender' should be contextualised cautiously, as women's relationships with men and their roles in connection with water and energy vary from one community to another.)

⁵ The Human Development Report (UNDP 2010) however points out that this approach proved problematic, resulting in the misallocation or lack of use of earmarked funds. Gender issues became marginalised in mainstream budgeting, as some departments construed floor limits as a spending ceiling. Targeting expenditures based on the identification of appropriate Programmes for women or reprioritising expenditures based on a generic list of appropriate Programmes and policies might have been more effective.

Rural communities generally continue to suffer from a lack of social services, including provision of water. This has a direct impact on poverty conditions. In the Philippines, it is estimated that only 70% of the poorest households have access to safe drinking water. Limited access to clean water and sanitation, and reliance on manual pumps or rivers, characterise water conditions in many poor areas (Aldover, 2008).

The negative impacts due to scarcity of water particularly affect poor Filipino rural women. Women are assigned the responsibility of ensuring that adequate water supplies are available, due to their assigned household roles, and this demands considerable time and physical exertion. However, state policy does not include them in decision-making about water supply systems, technology development or selection, location of water sources, or control over management and repair and maintenance of systems.

Lack of energy limits the provision of community based safe water supplies to households. Access to energy for mechanised power would allow potable drinking water to be pumped and delivered to households. In addition, lack of fuel limits people's ability to boil water to sanitise it for drinking and hygiene purposes, and thus increases the likelihood of water-borne diseases. This reduces the ability of poor people to improve their livelihoods and increases their vulnerability.⁶



⁶ Clancy, Joy and Skutch, Margaret. Undated. Gender-Energy-Povety Nexus. DFID Project CNTR998521

3. The process of mainstreaming gender: methodology

The process adopted for developing SIBAT's Gender Action Plan (GAP) followed ENERGIA's steps for gender mainstreaming in energy projects. The diagnostic phase aimed to assess the current status of gender and energy initiatives in the country related to the project's context, and identifying gaps. The findings were incorporated as inputs to the GAP.

3.1 Literature review

A review was conducted of reports and studies on gender issues in the Philippines and the national gender policy. The enabling environment, challenges and opportunities in mainstreaming gender in the energy sector in the Philippines were identified (and are summarised in Chapter 2 of this report). The bibliography for the literature review is included as Annex 1.

3.2 Gender institutional assessment

An institutional assessment was carried out to determine the gaps and opportunities in the structure, processes and procedures of SIBAT in relation to gender. This was conducted through an analysis of the programme documents, appraisal of the level of awareness of all SIBAT staff on gender mainstreaming, and estimation of the capacity of SIBAT to implement gender mainstreaming.

3.2.1 Background

In 1988, a gender desk was established in SIBAT to ensure the integration of gender concerns into appropriate technology programmes and projects of SIBAT's network members. The gender desk was subsequently spun off into a Women's Development and Technology Institute (WDTI) in 1990. WDTI developed women-led projects on sustainable agriculture, post-harvest technologies and micro-credit, as well as training and project modules, and tools on gender issues relating to appropriate technology. The institute, however, ceased operations in 1995 due to financial problems that afflicted the NGO sector during this period. Unfortunately, most documents were not properly saved.

Between then and now, there has been barely any follow-up on the original gender and development framework of 1988, especially at the organisational policy level. However, SIBAT field staff continued to address women and their roles in biodiversity conservation (through community projects), as well as the traditional knowledge and role of indigenous women in agriculture (through participatory research). These initiatives were implemented under the SIBAT's Sustainable Agriculture programme and policy research work for indigenous peoples⁷.

Gender was viewed as an integral component of the CBRES framework, which was formulated by the network in 1994. When SIBAT embarked on its piloting phase in 1997, it was required to prove the technical viability of CBRES projects within a community based framework. Community concerns (but not gender in particular) were included in the research and planning modules developed. This technical piloting phase was evaluated in 2005 and resulted in the publishing of 'Lessons from the Field'.

Commencement of the implementation and dissemination phase of CBRES, in early 2008, mandated a study on impacts and the strengthening of social processes in the CBRES efforts. This was articulated in the CBRES proposal submitted to MISEREOR, the German organisation that supported the Project to Upscale and Sustain the Impact of CBRES and Strengthen SIBAT's CBRES Programme. The proposal focussed on the need to build project sustainability and achieve socio-economic impacts in all sectors, particularly for women. A main objective was to demonstrate that there were poverty reduction measures achieved through the CBRES power enterprises by means of significant reductions in the hours spent on drudgery work, especially by women and children, and fewer 'lean months'.⁸

⁷ This gender goal is weakly reflected in the project activities but there are gender mainstreaming activities in the proposal but under different goals.

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The partnership with ENERGIA, forged in 2009, was aimed at taking SIBAT through the task of gender mainstreaming.

Findings from institutional assessment

The gender awareness levels of the staff, including the senior staff, were found to be varied. It was observed that most personnel in the renewable energy department possessed a relatively low appreciation of gender principles and practice.

The need to develop a policy framework for gender and development was found to be of key importance in implementing the gender mainstreaming plan. In that way, the absence of gender research and analytical instruments could be systematically addressed. For instance, within the CBRES project cycle, a baseline assessment, and monitoring and evaluation of gender in the CBRES projects were considered necessary. Additional training on how to use and administer the gender tools themselves would also be required.

Individual gender training conducted for staff in the past had failed to lead to gender mainstreaming within the organisation. It was noted that there was also a need to re-establish a gender section in the library, which would be useful for study purposes.

Recommendations from the institutional assessment

a) Integrating gender in SIBAT's institutional framework and processes

- Define and establish SIBAT's gender framework as integral to the institution's vision, mission and goals. Objectives and indicators that ensure gender issues will be taken on board should be identified. Planning and review of the programme will need to be conducted through a 'gender lens'.
- Ensure that the gender framework and processes are incorporated in SIBAT's policies covering: gender awareness; gender relations; policies and resources; networking; publicity; publications and materials; information; programme objectives and results; participation; and monitoring and evaluation.
- Increase gender awareness of staff: A module on gender education will be developed and all staff will be required to participate.
- Organisational policies and resources: Human resource requirements, including hiring criteria and procedures, will be reviewed accordingly. A gender-fair human resources policy will be formulated, covering benefits and opportunities, with special consideration given to female staff. Gender equity will be enforced and reflected in male-to-female ratios in management, programmes and other units. Required human resources personnel will be hired to ensure enforcement of gender-fair policies within the organisation.
- Publicity, publications and materials: Sustain SIBAT's findings on gender, both as an implementation tool and for project evaluation. The gender section of the library will be restored and a catalogue will be produced.

b) Integrating gender in community projects

- Engendering instruments and processes: gender-disaggregated survey requirements to be integrated in all instruments and methods in the project development cycle (e.g., needs assessment, conceptualisation, planning, monitoring and evaluation). Basically, information on conditions and needs of women and men should be gathered separately. The pre-feasibility study and feasibility study formats currently in circulation will be reviewed to integrate gender concerns.
- The community organisers and technical staff will be trained in the processes of conducting surveys and carrying out analyses in a gender-sensitive manner.
- The community power enterprise concept should be developed to portray a gender perspective. Hence, the processes mentioned above need to be employed in developing community enterprise projects that are linked to CBRES.

- Modules on gender training have to be developed and incorporated in social preparation and capability building plans for CBRES projects. These will include orientation on gender in development for both men and women, customised to existing conditions and male/female relations, and technical training for women in women-led enterprises.
- Review and implement technical designs to suit conditions of women as CBRES operators. Women in the communities will be consulted for project redesign and development.

Overall, the roles of women in management will be strengthened within project frameworks and policies, and linked to the objective of project sustainability.

3.2.2 Baseline assessment of existing projects

The literature review and institutional assessment were followed by a baseline assessment of four micro hydro projects, two solar photovoltaic projects and a small wind turbine project. The first project assessments were conducted by University of the Philippines College Baguio and SIBAT, and studied four micro hydro projects⁹. The second set of assessments, conducted by SIBAT, studied two solar projects and one wind powered water pumping system.

These project assessments identified some of the possible entry points for gender mainstreaming, and considered what additional information would be required to design and plan gender integration in CBRES.

This section outlines some of the key findings regarding the impacts of the projects on men and women.

Productive activities

The micro hydropower systems (MHPs) did not dramatically affect the gender division of labour in the four communities studied. However, they had incidental impacts on gender roles in productive work in particular communities and in specific tasks. For instance, in Buneg and Caguyen, the introduction of the mechanised rice mill resulted in increased participation of men in post-harvest production. Rice milling now involved carrying sacks of rice to the mill, and an overall transfer of the post-harvest processing activities to the productive rather than the household sphere. This resulted in reduced workloads for women with regard to rice milling. However, it was observed that the time saved was generally spent by the women in meeting other responsibilities.

In general, the MHPs have extended household members' daily engagement in productive activities, but have made their performance easier. In Kimbutan, for example, the MHP is associated with improved livestock management and livelihood performance. Research participants mentioned that the project enabled them to feed and bathe their hogs after finishing other farming work. Prior to having the electricity from the MHP system, men and women alike were constrained by darkness from livelihood activities during the evening. The electrification of their households enabled them to perform unscheduled productive tasks before sleeping hours.

The solar and wind powered water projects in the two communities studied provided some respite for women from the traditional toil of water fetching, with reductions in time spent and physical labour. In addition, the women in these two communities were able to undertake the management of the projects. The simplicity of the solar powered water pump project enabled the women to perform routine tasks of cleaning the equipment and managing the daily distribution of water. In one community where water lifting from a well was traditionally a task for men, the wind powered water pump enabled the women to handle it themselves, and thereby improved their ability to perform household activities.

⁹ A profile of these projects is included in Annex 2.

In three of the communities studied, men and women approved of women undergoing training and capacity building to learn how to manage the systems.

Reproductive work (childcare, household maintenance, health care)

The study considered the impact of the MHPs in three areas of reproductive work – child rearing, household maintenance and access to health-related activities.

The most significant impact directly attributable to the introduction of a MHP system was the decrease in, or elimination of, rice pounding (especially in the cases of Buneg and Caguyen where rice mills were introduced after electrification).

It was noted that there was greater involvement by men in helping children with schoolwork, and a decrease in kerosene-related activities for household lighting, which were also considered significant improvements.

Overall, the women benefited with the arrival of electricity. Electricity has succeeded in decreasing the drudgery in their daily lives, even though the availability of electricity has extended their hours of performing chores at night.

In terms of health-related activities, the MHPs did not have a significant impact. Poor access to health services continues to be a source of concern in the four MHP sites.

The impact of solar and wind powered pumping and delivery of water to households was significant in terms of the reduced time and labour spent by women and children who previously carried out this activity. In addition, at the solar powered water pump site in South Cotabato, there was a significant decrease or cessation of diarrhoea-related incidents, which was attributed by community members to the introduction of the project.

Community management and politics

The realm of politics was dominated by men in the MHP sites. Men are usually elected as barangay captains and councilmen. Only a few women aspired to and were actually voted into these public offices. The introduction of the MHP has not altered these gender roles, but it has certainly enhanced the participation of men and women in community affairs. With the availability of electricity, preparations for community activities, feasts, births, and responses to emergencies have become more efficient and the workloads easier.

Recommendations from the baseline report

The following are the major recommendations from the baseline study regarding gender mainstreaming in renewable energy projects of SIBAT and the design of the CBRES programme.

- *Gender and development concepts, methods and instruments* should be integrated into the planning, implementation, and monitoring and evaluation of all CBRES projects.
- *A survey on women's assets and resources* (knowledge and skills), and a training requirements assessment, should be conducted as a basis for enhancing women's full participation in the CBRES projects.
- *Gender orientation and training of all SIBAT staff* should be required so they are equipped with knowledge and skills to take up and promote women's concerns in all phases of the project.
- *Women's participation in the projects*, and appropriate technology development, needs to be ensured: in the project development cycle (from conceptualisation, planning and indicator setting, to monitoring and evaluation); in designing women-sensitive technologies; and in the organisational and technical management of the CBRES projects.
- *Increased women's roles* in the conceptualisation, implementation and development of community power enterprises and water projects should be promoted.



- *Capacity development of women* should be provided in all aspects of projects (technical, management and financial), i.e. they should be targeted and trained in technical operation and management, project management, bookkeeping and financial management, and other related activities. A literacy component should be introduced and literacy levels of women considered when designing capacity building programmes (including through peer-to-peer sharing and learning, hands-on exposure, etc.)
- *Women-friendly technical designs and applications* should be developed (e.g. milling equipment adapted to women's strength and abilities).
- *Networking for women involved in CBRES projects should be encouraged*, to allow them to share experiences and lessons.

4. The outputs of gender mainstreaming in CBRES

4.1 Gender Action Plan (GAP)

Gender Goal: Promote gender equality and empower women in Community Based Renewable Energy Systems.

Expected outcomes:

- Rural community women taking the lead in CBRES and in CBRES enterprise establishment, management and sustainability.
- Increased economic opportunities for rural women emerging from CBRES.
- Skills of rural community women enhanced in the areas of management and technology.
- Improved wellbeing of women emerging from CBRES and women's participation in its development.
- Gender policy institutionalised within the SIBAT organisation.
- Increased capacity of SIBAT staff to mainstream gender.



Action Area	Activities	Resources/ time frame	Output/ outcome Indicators
Institutionalise gender policy in SIBAT	<p>Conduct (internal) forum consultation on gender and development (GAD) and formulate SIBAT's institutional gender policy incorporating results from the consultation</p> <p>Institutionalise gender mainstreaming into staff appraisal policy (Incorporate gender in staff appraisals)</p> <p>Establish a gender desk within SIBAT; establish implementing policies and assigning of gender focal point/s</p>	<p>Support to conduct one day consultation Schedule: May 2011</p> <p>Resources: MISEREOR and EED Schedule: To be undertaken in 2011 and beyond</p> <p>Resources: MISEREOR and EED Schedule: First Quarter 2012</p>	<p>Common understanding among SIBAT programme staff and units on GAD; and SIBAT's policy paper on gender</p> <p>An engendered PAR system with SIBAT</p> <p>Gender policies incorporated as a section of SIBAT's Manual of Organisational Systems & Procedures</p>
Engender CBRES project cycle, including CBRES tools ¹⁰	<p>Conduct unit review and revise current CBRES project instruments and incorporate gender elements in processes:</p> <ul style="list-style-type: none"> Finalise PFS and FS templates Prepare module for Orientation on CBRES and gender for the community Prepare guidance note for conducting PFS, FS and in preparing project plans with the community Engender field report and project progress report (six-month) Incorporate gender targets into CBRES programme planning 	<p>Resources and time frame: Ongoing within the ENERGIA initiative</p> <p>Schedule: to be completed within October – December 2011</p>	<p>Revised and pre tested templates for project documents</p>
Incorporate gender concerns in SIBAT's technology standards	<p>Develop gender sensitive technology in terms of design, operation, application and management</p>	<p>Resources: MISEREOR, APFED, etc.</p> <p>Schedule: Third Quarter 2011</p>	<p>Engendered Technology Designs, Feasibility Studies of Designs, Project monitoring and assessment</p>
Build organisational capacity to mainstream gender in CBRES and other programmes	<p>Orient and train SIBAT RE staff on the use of gender tools developed as part of engendering CBRES project cycle.</p>	<p>Resources: Already planned under ENERGIA</p> <p>Schedule: June 2011</p>	<p>Gender Orientation Module, Training Proceedings, Attendance Sheet, Monitoring Plan, Monitoring Report</p>

¹⁰ Details of the existing processes and specific gender inputs to be made are presented in Annex 3.

Integrate gender in CBRES project planning	Orient communities on revised planning processes	Resources: Planned within ENERGIA framework Schedule: January 2012 and onwards	Modules for community orientation Training proceedings
	Use revised tools (PFS, FS and project planning) to develop project plans with 3 communities	Resources: SIBAT's internal planning Schedule: July 2010 and onwards	Engendered Project plans for 6 communities
	Use gender tools (Guidance note for capacity building) for identifying training needs Conduct training for men and women in 1 new MHP and 1 SWT community: <ul style="list-style-type: none"> • Technical training • Organisational management • Project operation and management. • Financial management • Leadership training 	Resources: MISEREOR funds Schedule: July 2011 and onwards	Documented training needs of men and women in 6 communities Two (2) community men and women oriented and trained in 2011.

4.2 Monitoring plan

The monitoring plan will be established through a gender capacity building plan to be implemented with the College of Social Work and Community Development (CSWCD), University of the Philippines, Diliman, Quezon City.

4.3 Human resources and financing

There is a need for staff to undergo training on gender and energy issues. The team should also be oriented and trained in the use of the engendered CBRES tools. It is recommended therefore, that the gender specialist provide mentoring and support to the Gender Focal Point and implementing team, as they continue to build their skills, knowledge and capacity to implement gender mainstreaming in CBRES projects.



5. Initial results of the gender mainstreaming process

5.1 Key strategies and processes

With the introduction of this project, SIBAT has sought to include strategies and processes to ensure that gender mainstreaming is institutionalised within the organisation and incorporated in its projects.

Internal dissemination

- *Initiation of discussions about gender mainstreaming with SIBAT's National Coordinating Board.* The CBRES gender action plan has been presented and discussed with the Board. A number of board members have indicated support for gender mainstreaming in appropriate technology. Additional gender-related discussions have to be conducted to generate further debate and gain overall backing from the entire board.
- *Conduct preparatory activities to write SIBAT's policy paper on gender and appropriate technology.* This is an important body of work that will provide an overarching framework to guide SIBAT's work in gender mainstreaming and contribute to the overall achievement of gender equality within the organisation and its two core programmes: CBRES and Sustainable Agriculture.
- *Include and strengthen gender concerns as a part of SIBAT core administrative values.* With increased gender consciousness within the organisation, work on strengthening gender concerns in SIBAT's administrative work and procedures was revisited and changes incorporated in 2010, including developing policies on hiring women, considering and addressing women's health concerns, and identifying other benefits for women.
- *Hiring of a Gender Focal Point* for SIBAT who acts as a key resource person on gender issues and concerns for the whole organisation, and for CBRES and other programmes and projects.
- *Development, validation and implementation of the Gender Action Plan (GAP) as part of the institutionalisation process.* The GAP currently addresses CBRES programmes and project plans. The Sustainable Agriculture programme has commenced identification of activities to be included in the GAP.
- *Development, implementation and evaluation of a training module on 'Gender Mainstreaming in Appropriate Technologies.'* SIBAT has conducted two training workshops: for SIBAT staff and for partner NGOs and people's organisations. The training module will be offered to other projects or agencies with a focus on CBRES or appropriate technologies.

External dissemination

- SIBAT participated in policy events, including an event on "Renewable Energy Mainstreaming: Pushing forward Renewable Energy to Civil Society Initiatives", held in June 2011. SIBAT's presentation at this event had a strong gender focus.
- SIBAT and APPROTECH ASIA together made a presentation at the National Policy Workshop on Climate Change, Access to Energy and Technology Transfer. SIBAT's paper highlighted participation, access to technology and benefits to women.
- A CBRES consultation is forthcoming.

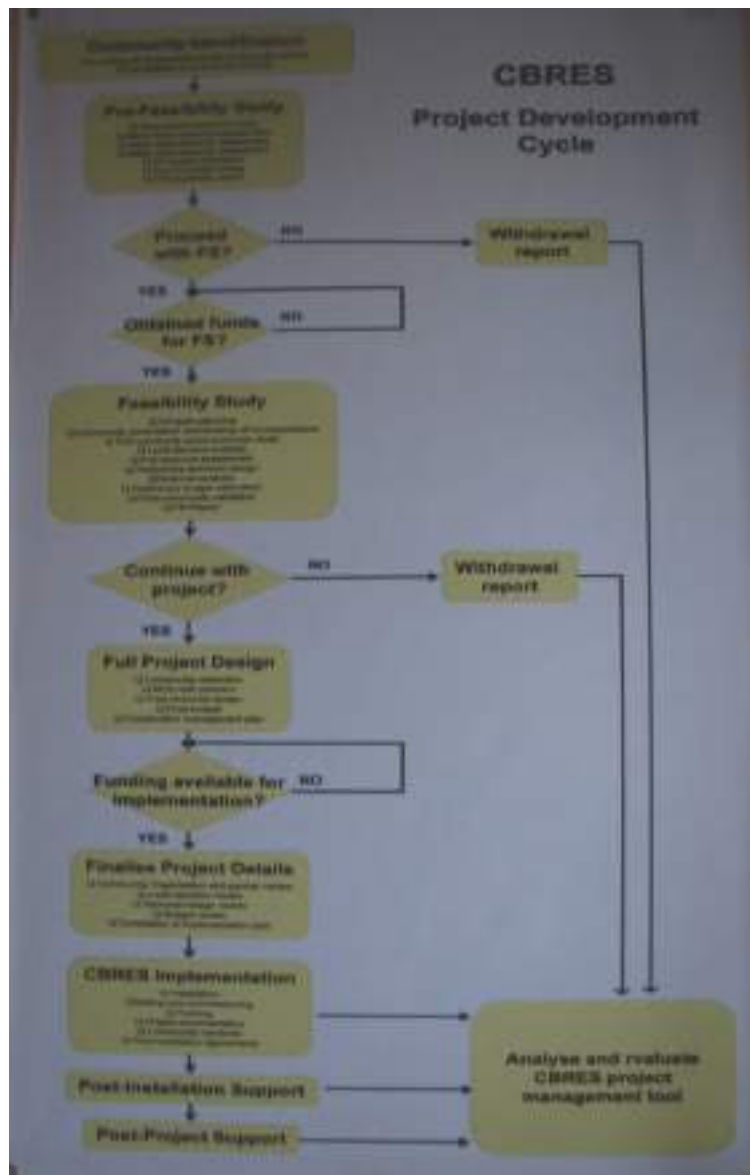
5.2 Results of gender mainstreaming in CBRES

The gender mainstreaming project has enabled the achievement of the following:

- *Formal incorporation of gender processes within CBRES and appropriate technology project development.* This includes the development and use of gender-sensitive instruments and research methods such as household surveys, pre-feasibility and feasibility studies and focus group discussions, community training and impact evaluations of SIBAT's CBRES development process.
- *Enhancement of SIBAT's in-house awareness and understanding of gender goals, concepts and processes necessary to achieve gender equality.* The new awareness and understanding

has been successfully applied and implemented by CBRES staff. Gender training is planned to be conducted for all relevant staff within each SIBAT programme, project and desk.

- SIBAT's other appropriate technology programmes and projects, such as the Sustainable Agriculture programme, have participated in gender awareness-raising trainings and have commenced a *process to incorporate gender concepts and tools in project planning and implementation*.
- *Capacities of women in local project areas to manage and sustain community based appropriate technology projects have been enhanced* and continue to be strengthened. Women in some MHP project sites participate actively in the operation of the MHPs and project implementation and maintenance, such as checking, draining and cleaning the fore bay and intake canals.
- *Successful development of gender-sensitive tools for appropriate technology project development and implementation*. SIBAT will continuously improve these tools and gather lessons from their application.
- *Gender-friendly technology innovations are being identified and adapted*. For example, the original valve for a MHP project was deemed too big and cumbersome for women to operate, making operating the valve in particular, and the MHP overall, the sole responsibility of men. The original valve was replaced with a butterfly valve, which was more manageable for the comparatively smaller hands of women. This enabled the community women to operate the MHP and thus participate more actively in the MHP project.
- *An impact case study on gender sensitivity, CBRES and rural women has been documented and shared*. The findings and recommendations of the case study, which was conducted jointly by SIBAT and Kasarian Studies Center, UP Baguio, continue to inform and improve CBRES project development and implementation. SIBAT's Sustainable Agriculture and Village-level Sustainable Development (VLSA) programmes have commenced using the results of the case study to guide their work in gender mainstreaming.
- *The gender team's capacity has been enhanced* through its key role in leading activities such as gender discussions, working on gender-sensitive documents and engendering tools.
- *Work on developing technology standards with a strong gender focus* has commenced and is ongoing.
- *The gender audit conducted* as part of the ENERGIA gender mainstreaming project raised awareness on gender issues and concerns among staff members. This was followed by training on gender awareness for the staff.



5.3 Impact of gender mainstreaming on women and men in the project areas

The gender mainstreaming within CBRES has had the following impact on women and men within the programme:

- CBRES has provided decentralised electricity, which has helped raise the productivity and incomes of households and communities, including improvements in women's productive and household work.
- CBRES has been able to pump and deliver water to households, minimising the work of women and children in fetching water for household use, gardening and livestock raising.
- Access to water facilities has also minimised water-borne diseases, which in turn has reduced women's work in looking after sick children and other family members.
- CBRES-provided electricity to run rice mills has succeeded in reducing women's manual labour hours. Indigenous women, who used to pound rice for every meal, every day, have particularly benefited from this initiative.
- Women are being empowered to take care of potable water projects.

6. Lessons from implementing gender mainstreaming in the CBRES Project

The gender mainstreaming in energy projects has raised the commitment and capacity of SIBAT as an institution, and of its appropriate technology projects, to work towards gender equality. There have been a considerable number of positive results and outcomes, which have served as an inspiration to continue with the work and not lose sight of the aim of contributing to achievement of the UN Millennium Development Goals, specifically MDG 3, which addresses issues related to women's equality.

There are a number of lessons from the project, which will contribute to the progress in gender mainstreaming within SIBAT:

- SIBAT and its project staff have varied understandings of the meaning of gender equality, gender equity, gender mainstreaming and engendering tools. These gaps will be addressed by staff development training programmes and fieldwork, which will ensure that gender needs, benefits and roles are part of the core agenda.
- SIBAT has identified the need for a continuous process of redefining gender mainstreaming and gender-sensitive appropriate technology work. Through its experiences in appropriate technology programme development, project implementation and institutionalising gender initiatives, SIBAT can contribute considerably to the achievement of gender equality in energy projects and appropriate technology work in general.
- SIBAT has acknowledged the need to keep on questioning, investigating and working toward actual gender equality. Below are some of the questions that have been raised after acknowledging the benefits to women generated by the energy projects:
 - What support can be provided to women for them to become more productive?
 - Women are now involved in backyard gardening. Does this present an additional burden to them?
 - Women are the traditional custodians of seeds, ensuring that they are in good condition and adequate supplies available for the next planting season. With the electrification of rice milling and men taking over the operation of the rice mills, will women lose a very valuable role in the community? How will this impact women?
 - Is it purely a woman's choice to do housework? Is it her individual decision to be a housewife and/or bread winner?
 - How can women be freed from reproductive work in order to engage in more productive work?
- In some MHP project areas, men handle the infrastructure requirements and women are responsible for organisational management. However, the men must be encouraged to provide support to women in organisational management functions as well.
- Aducao MHP is a good example of a women-led energy project. It was recommended that a case study focussing on Aducao be conducted as one of the next steps.
- From the case studies, the following key points were acknowledged:
 - The transition from manual rice pounding to electric rice milling has definitely alleviated women's work, releasing them from a very physically demanding task they had to undertake three times a day.
 - Electric rice milling, however, has been taken over by men, resulting in the loss of women's participation in post-harvest production. This could lead to the possible loss of women's control over seeds, as seeds are traditionally collected and stored by women during the post-harvest process.
 - There is a need to conduct an in-depth study of the impact of rice milling on the roles of women and men.
 - Lighting distribution and tariffs also need to be studied further.

7. Challenges encountered in the gender mainstreaming process

SIBAT is an implementing organisation, and therefore its staff members spend a considerable period of time on the field. This at times made communication with ENERGIA resource persons a rather difficult task.

Another challenge faced by the gender mainstreaming process was that it was anchored within the overall processes of the organisation, which sometimes presented bottlenecks. For example, as part of the gender mainstreaming process, a number of tools (e.g. pre-feasibility and feasibility studies, and household surveys) were engendered and used in gathering community and project data. This process was useful, as it made the team conscious of the gender issues in the field and helped them revisit the tools. It also led the team to realise the possibility of combining some of the tools into one, or using other strategies to gather the information required. CBRES has agreed to review the entire planning process.

It was expected that the gender team would be able to undertake the process, and carry out the gender training for the staff, by themselves. However, this was not successful and, therefore, the ENERGIA resource person was invited a second time to interact with SIBAT staff members and partners, and support the gender team. Clearly, continuous support was required, and it was only after a few times of receiving support by the resource person that the core staff team members were confident enough to steer the process forward on their own.

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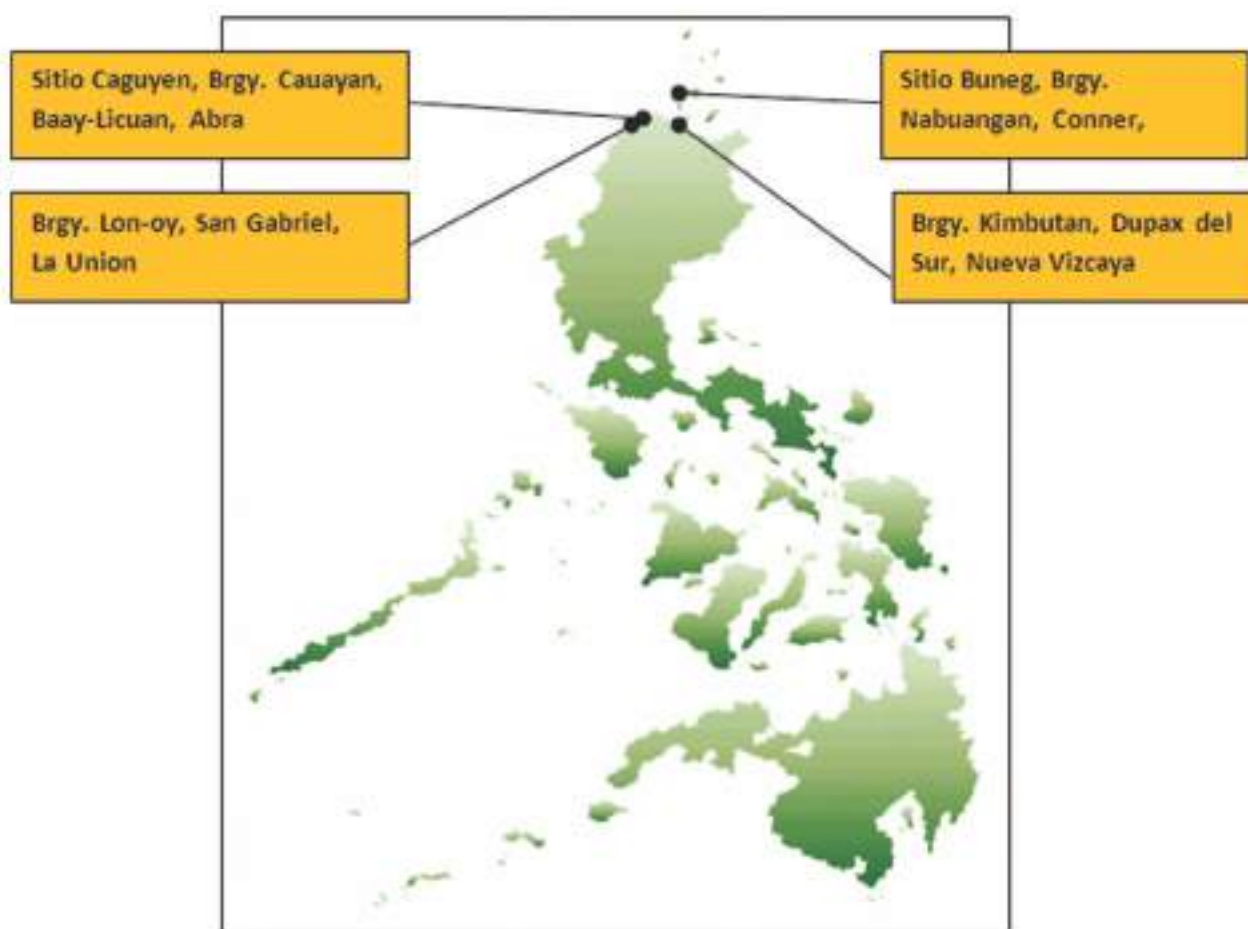
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Annex 2: A profile of some MHP communities

Location and Accessibility

Table 4. Location of MHP sites

Site	Distance from town center	Municipality	Province	Region
Sitio Buneg, Brgy. Nabuangan	36 kms	Conner	Apayao	CAR
Sitio Caguyen, Brgy. Cawayan	7 kms	Baay-Licuaan	Abra	CAR
Brgy. Kimbutan	27 kms	Dupax del Sur	Nueva Vizcaya	II
Brgy. Lon-oy	23 kms	San Gabriel	La Union	I



Source: http://tl.wikipedia.org/wiki/Talaksan:Ph_regions_and_provinces.png

All four sites are located in remote mountainous areas of Northern Philippines in mainland Luzon. Two of the areas are in the Cordillera Autonomous Region, one in Region 1 and the other in Region 2. (Please refer map). All areas become inaccessible during rainy months due to the swelling of rivers systems that separate these areas from the town centers. While Lon-oy and Kimbutan can be accessed by public Jeepneys during dry/normal weather, Caguyen and Buneg can only be reached by trekking on foot trails from drop off points to the site.

Population and Ethnicity

Indigenous ethno linguistic groups, all originating from the upland communities of the Cordilleras, populate the four sites. Buneg and Caguyen's populations are homogenous with members of the community coming from a single group. On the other hand, mixed groups occupy Kimbutan and Lon-oy (Refer Table 5) Since Kimbutan and Lon-oy are more accessible than Buneg and Caguyen, there is a higher possibility of immigration in these areas.

Table 5. Dominant ethnic groups and religion per site

Site	Ethnicity	Dominant religion
Sitio Buneg, Brgy. Nabuangan	Mabaka	Roman Catholic
Sitio Caguyen, Brgy. Cawayan	Gubang	Roman Catholic
Brgy. Kimbutan	Original inhabitants: Ecameging tribe of the Bungkalot group; other groups: Kankana-ey, Ibaloi, Kalanguya, Ilocano	Roman Catholic
Brgy. Lon-oy	Original inhabitants: Kankana-ey-Igorots; other groups: Bago-Ilocano	Anglican

Socio Economic Conditions

Agriculture is the primary source of livelihood, with rice as a major agricultural product. All areas, except Buneg, engage in selling their produce (mostly vegetables) to markets. Buneg mainly produce crops for their own consumption as the community still has a subsistence economy.

Table 6. Livelihood sources per site

Site	Primary livelihood source	Other livelihood sources
Buneg	Farming (rice)	Handicrafts, logging, gold panning, seasonal jobs outside the area, regular salaried jobs (teachers, local government officials, MHP/rice mill operator)
Caguyen	Farming (rice, vegetables, ginger)	Carpentry, blacksmithing, por dia ¹² jobs, selling rice cakes, remittances from relatives working as OFW's ¹³ in other countries (mostly as domestic helpers)
Kimbutan	Farming (rice, ginger, vegetables)	Sari-sari store ¹⁴ , hog-raising, jeepney drivers, regular salaried jobs (health workers, teachers, etc.), por dia jobs
Lon-oy	Farming (rice, corn, tiger grass, camote, banana)	Handicraft-making (brooms), seasonal jobs outside the area, regular salaried jobs (health workers, local government officials)

The above mentioned communities experience hardships in upland living conditions. Most experience rice shortages every year during the 'lean months', resulting in the villages supplementing their income by engaging in labour work, which is either seasonal or regular. Seasonal income comprises mainly from the sale of agricultural products and handicrafts and daily wages are derived from working in government construction projects. Regular cash income is derived from regular or contractual employment as government officials or employees (SIBAT, undated: 24). Some households manage sari-sari stores (in Kimbutan) or bakeries (in Lon-oy). Remittances from relatives, mostly women working as domestic helpers locally and overseas, has also become an important source of income (particularly in Caguyen and Lon-oy).

There are no economic activities in the industrial sector in these regions. Household and small farm based economic activities (for both consumption and cash) predominate (SIBAT, undated). Increased food productivity for subsistence and cash are expressed needs in these communities.

Education and health services in these regions are considerably low. Despite the presence of elementary schools in the area, there are still areas (for instance Buneg) that employ multi grade systems where

¹² Paid non-agricultural jobs

¹³ Overseas Filipino Workers – term used for Filipinos working outside the country.

¹⁴ Sari-sari means "variety" in Filipino. A sari-sari store is a store that sells a variety of goods ranging from ingredients used for cooking food (oil, sugar, salt, etc.) to hygiene needs (toothpaste, soap, shampoo), to snack items to over the counter medicine.

one teacher teaches two or three grade levels at the same time. Most of the secondary schools are also located in town centers. Access to health services and medicines need to be improved.

Profile of the MHP projects¹⁵

The Buneg Microhydro Power Project

The Buneg micro hydro power project (MHP) is situated in the farthest sub village of Buneg, Barangay Nabuangan, Conner, Apayao.

The project was initiated by the Buneg Mabaka residents when they became aware of an existing micro hydro system in Dulao, Malibcong, Abra. The residents sought advice from the Diocese of Malibcong (DM), Abra who facilitated the technical and financial support for the Dulao Mabaka MHP. In 1999, an engineer from SIBAT and a brother from DM conducted a technical appraisal of Buneg. The result indicated the potential for micro hydro energy for post harvest utilisation and household electrification. SIBAT assisted in proposal development and after a year, the UNDP Global Environment Facility, through its Small Grants Programme (UNDP-GEF-SGP) supported the implementation.

Under SIBAT's supervision, Buneg residents constructed the system. The Mabaka people's cultural practice of 'innabuyog' or cooperative labour primarily contributed to the completion of the MHP construction.

The system, with a total power of 7.5 kilowatt, currently provides electricity to 42 household beneficiaries. Aside from electrification from 6am-6pm, the Buneg MHP also renders day time rice milling services to the Buneg Mabaka community.

The Caguyen MHP

The Caguyen MHP is a 7.5 kilowatt power project in Sitio Caguyen, Baranggay Cawayan, Baay-Licuan, Abra.

The Caguyen Farmers Association (CADAGUPAN), SIBAT, and the Social Development Center (SODEC-Abra) have been involved in the pre installation processes and the development of the system. The funds for the project were provided by the UNDP GEF-SGP.

In mid 2001, the Caguyen MHP was constructed relying only on community labour due to the absence of machinery and equipment in the area. SIBAT and the DM provided project technical assistance including feasibility study, system design, and supervision. SIBAT conducted financial and operational training to prepare the Caguyen community for a community based management scheme. The Technical Education and Skills Development Authority (TESDA) also provided electricity training to the community.

The project was officially completed in February 2002 and now serves 27 household beneficiaries. Aside from lighting and electricity provision from 6 pm to 10 pm, the project also runs a rice mill operated by the CADAGUPAN.

The Kimbutan MHP

The Kimbutan MHP is a 7 kilowatt power project serving in Sitio Centro, Baranggay Kimbutan, Dupax del Sur, Nueva Viscaya.

It is among the five CBRE projects in Northern Luzon funded by the Department of Energy (DOE) - Energy for the Alleviation of Poverty Programme. The combined efforts of SIBAT, the Uniting Church of Christ in the Philippines (UCCP) and the Kimbutan community made the project physically and socially feasible.

¹⁵ All data used in this synthesis part were gathered from SIBAT's Lessons from the Field and SIBAT provided project profiles of the four MHP samples.

The Kimbutan micro hydro project is installed 200m from the barangay centre and utilises the hydro potential of the Kimbutan creek.

The construction commenced in September 1999, with the community providing the labour. As in other project sites, machinery and equipment were unavailable in the area. SIBAT provided the technical assistance for the feasibility study, system design, fund sourcing, project supervision and training. Supervision work comprised of control, organising labour intensive work, community mobilisation and site management.

The project implementation stalled for some time due to internal issues within UCCP and staffing issues with SIBAT. SIBAT eventually recommenced the project in 2001. Bad weather conditions, inaccessible roads and difficulties in transporting supplies all contributed to problems faced in the pre installation stage of the Kimbutan MHP.

The Kimbutan MHP was officially completed and inaugurated on September 27, 2003 after 36 months of construction. At present, the project serves 19 household beneficiaries, providing lighting and electricity from 6 pm to 10 pm.

The Lon-oy MHP

Lon-oy MHP is located in Barangay Lon-oy, San Gabriel La Union.

The Episcopal Diocese of North Central Philippines (EDNCP) initiated and facilitated the project. SIBAT provided technical assistance and funding from the DOE. Of the four samples for this study, Lon-oy is the only project which serves five sub villages or sites. The Lon-oy Community Development Association, Inc., the local farmers' organisation owns the project.

The project commenced with the community being prepared and organised by the EDNCP's community development personnel. SIBAT provided technical aid through its micro hydro service centre by assigning engineers and specialist to conduct surveys, design the final system, and assist the local people during system creation. Community members contributed their labour free of charge for the construction, by hauling aggregates and equipment.

The project which commenced in 1999 was completed in March 2001, after 15 months of construction. Currently, the 20 kilo watt project provides 24 hours lighting and electricity to 78 household beneficiaries, 34 of which are also provided services by La Union Electric Cooperative or LUELCO.

The actual design capacities of these MHPs (7 kilowatts minimum) are sufficient to support micro enterprise applications, but due to lack of funds, this component has not been fully addressed. Meanwhile, there is a policy of limiting lighting applications to 3 bulbs maximum (1 to 2 kilowatts) per household to ensure equity. Tariff collection is fixed and uniform in each community. Resultantly, each household, regardless of income bracket, equally pays the fixed tariff. The tariff (and other policies, such as the limited energy use/applications) is based on the project feasibility study, specifically the consumers' willingness to pay, which is validated and consented to by the community through consensus building. The disadvantage of this scheme is highlighted in the fact that it does not take into account the segmentation of consumers based on income bracket (socio economic status), it may actually result in inequity since the poor may subsidise the consumption of the well to do in the community, as evidenced by the cases in this study.

Annex 3: Existing tools being utilised for planning in CBRES

Activity	Existing Tools	Tasks to be undertaken/ modification	Outputs
		Develop indicators	
Pre feasibility	Pre feasibility template	Engender pre feasibility template	Revised pre feasibility template
Feasibility	CBRES chart (used for community meetings) Feasibility template	Develop module for orientation on CBRES for community and partners Review CBRES chart (presently used with community meetings) Review FS template	Include new step in orientation on CBRES to community men, women and partners Revised CBRES chart Revised feasibility tools and report template
Community meeting	Project plan template used for VLSD sites, including a) Activities b) Time table c) Budget d) Responsibilities/ committee	Prepare guidance note for preparing project plan Revise project plan template to incorporate gender	Include guidance note as a new tool Revised project plan template
Installation			
Capacity building	Training modules on watershed conservation and management Technical operation and management training (micro, wind and solar module) Project management training Leadership training (no module) Financial management Livelihood training (no module)	Develop guidance note for training needs assessment	Include Guidance note for training needs assessment as a new tool
Monitoring and Evaluation	Template for field reports Template for six monthly progress reports	Review field report template Review progress report	Revised field report template Revised progress report template
Programme planning	MISEREOR three year Project plan	Review project plan (MISEREOR)	

ENERGIA International Network on
Gender & Sustainable Energy



Practical Action
(Sri Lanka, India, Pakistan Programme)

