

**Training Community Women Leaders
on Gender and Budgeting, and Picohydro Development
for Just Energy Transition (JET)**

20-21 September 2024

Cavinti Municipal Hall, Cavinti, Laguna

Background

The Center for Empowerment, iNnovation and Training on Renewable Energy (CentRE), together with KALIPI or Kalipunan ng Liping Pilipina in Cavinti, with the support of Friedrich-Ebert—Stiftung (FES) Philippines and the Local Government Unit of Cavinti, set a two-day training on 20-21 September 2024 for KALIPI leaders, as first of the 3-phase training program for women to realize RE and local gender-responsive policy support for this.

This year's initiative in Cavinti is an off-shoot or follow-through to the initial discussions and interactions by the CentRE last year with Cavinti LGU personnel and especially with KALIPI leaders who have expressed the need to build local knowledge and capacity in harnessing the energy potentials of natural resources like rivers and streams that abound in the municipality. KALIPI leaders shared the view that policies and training on RE, as well as financial and human resources including women are critical to realize reliable and affordable electricity to enable more use of electronic gadgets or facilities that can provide more lighting and lighten household chores, aid children's education, and enhance family incomes through livelihood activities.

The early talks between CentRE and Cavinti LGU representatives took place at the Policy Dialogue-Workshop on the Adoption of Local Energy Code and RE Planning conducted by CentRE in cooperation with Galing Pook Foundation at UP Diliman in Quezon City in April 2023. This was followed by the focused-group discussion conducted by CentRE with the leaders of KALIPI women's association in Cavinti in coordination with MENRO, in June of the same year, under the "Women in Inclusive and Sustainable Energy" or WISE project of CentRE. Together with Cavinti MENRO Engr. Gil Custodio, KALIPI leaders - each representing one of the 19 barangays of Cavinti - made time for the focus group discussion with the team from CentRE to learn about WISE and Just Transition.

Among the key energy concerns shared by women were: high or unbearable cost of electricity (their electric bills account for about 20 to 50 percent of their monthly

household income); lower electric rates could improve their lives; and they believe that with proper knowledge or training, they can be part of or partners in finding solutions such as installing and or operating an RE system that utilizes their natural resource like rivers and streams so they have affordable and sustainable electricity from renewable energy.

With these prior undertakings, the CentRE set this year's training with the following objectives:

- Pilot a set of women trainers on energy management and small RE installation such as picohydro "Aqua Bida" to equip them as partners in just energy transition, and in achieving sustainable and affordable energy;
- Broaden women renewable energy and just energy transition champions including in the local and national policy-making and decision-making bodies who will push for a gender-responsive, inclusive and sustainable energy and just transition agenda
- Capacitate women as "energy managers" through trainings on energy efficiency and energy management, and make them resource persons or trainers for other women's groups or communities;
- Pilot the integration of budget and dedicated program for women in the energy, development, and or just transition plans in the LGU level.

The two-day activity on 20-21 September 2024 was thus divided into 3 parts:

- 1) Meeting with Cavinti Municipal Mayor Arrantlee Arroyo to collaboration or partnership in pursuing gender and sustainable energy capacity building activity for women and its institutionalization as an LGU initiative to support women's access to energy and empowerment;
- 2) Training on Gender and Budgeting, and RE – particularly picohydro – development
- 3) Conducting resource assessment or identification of site for picohydro installation and operation.

HIGHLIGHTS OF ACTIVITIES

SEPTEMBER 20, 2024

COURTESY CALL/ CENTRE-LGU CAVINTI MEETING

The meeting took place at the Office of the Mayor at the Municipal Hall of Cavinti. Present were Mayor Arrantlee Arroyo, Municipal Environment and Natural Resources

Officer (MENRO) Engr. Gil Custodio, and the municipal coordinator of KALIPI – Ms. Noralyn Judilla. For the part of CentRE, Executive Director Maris Cardenas and Responsible Energy Initiative Project Officer Ann Angala were present.

CentRE executive director introduced the organization and its key projects, particularly on gender mainstreaming in energy policies and programs through the Women in Inclusive and Sustainable Energy (WISE) initiative and the training that will be undertaken with KALIPI towards building the capacity of women and integration of budget and program for women in the energy and development plans of the municipality. CentRE, through its Executive Director, highlighted the aim to foster cooperation with the LGU in addressing energy access, high electricity rates, and climate change and empower women through inclusive policies and programs in the process of energy transition to renewable energy.

Then she shared the gender and energy training/mentoring programs that will begin that day, and which would be conducted until the next 2-4 months. This includes a basic training or discussion on renewable energy and pico-hydro development which are deemed more relevant for the LGU especially women or households located close to the rivers or streams. She also gave an overview of other activities that will be conducted which hopefully could also include the LGU energy or technical team. These are the site visits in Cavinti for assessment of some potential RE resources like rivers, which will involve analysis of water flow, topography, and other environmental factors essential for determining the viability of hydro energy generation in the area, particularly pico-hydro that can supply power needs of some households especially in remote locations.

Mayor Arrantlee Arroyo, speaking on behalf of the LGU of Cavinti, expressed appreciation of the CentRE's initiative especially in choosing Cavinti as a site or partner for knowledge sharing and piloting. He acknowledged the need for capacity building not only for KALIPI women, but also for the personnel and officials of the LGU in order to meet the electricity needs of the people to support realize further economic and social progress in their municipality which is known in the country for its abundance in water resources that can be tapped for energy generation, and not only for tourism.

He also expressed enthusiasm on the development of their Local Energy Code and Local RE plans, assigning MENRO to maintain contacts with CentRE especially in scheduling a discussion with the local council and in drafting the LEC. The LGU and KALIPI carried "AQUA BIDA" as the name of the pilot or joint project. In the end, the Mayor offered to formalize the partnership through a Memorandum of Understanding between the LGU and the CentRE. The MOU shall provide the framework for

cooperation and outline the expected roles of each party, as well as the target outputs or outcomes of the cooperation.

DISCUSSION SESSION WITH CAVINTI WOMEN AND THE LGU GAD PERSON

The afternoon of Day 1 was devoted to get to know the cooperating organizations or entities – CentRE, WISE, KALIPI, and LGU Cavinti. Various concepts and programs were also reviewed and further explained – these concepts are related to gender equality, gender equity, gender mainstreaming, gender and development (GAD) budget, climate change, renewable energy, and just transition.

Part I: Introduction about CentRE, WISE, Cavinti, and KALIPI

CENTRE

The CentRE is a not-for-profit public interest research and training association of NGOs, private renewable energy (RE) developers, electric cooperatives, academic centers, and individuals - united under a common vision of an inclusive and sustainable society where people and communities live in dignity, control their energy future, and enjoy access to reliable, affordable and sustainable energy attained through a transition that is just and democratic.

One of CentRE's programs is innovation which focuses on developing RE models, particularly distributed energy resources that are CRISP – catalytic, replicable, innovative, scalable, and participatory. The RE models – can be technology, business, and or social models – shall be piloted in remote or disadvantaged communities in collaboration with the LGUs, electric cooperatives, people's organizations and or the private sector. The RE pilots would provide or support basic household electricity needs like lighting, or generate power for agriculture or livelihood. The other programs include policy research, knowledge management, and gender mainstreaming in energy.

WISE

The Women in Inclusive and Sustainable Energy (WISE) is a platform initiated by the CentRE together with FES and partner organizations and women's groups advocating for inclusive and just energy transition in the country. It provides a venue and facilitates exchanges among women where they can share their stories about their energy situation, how they are affected by and deal with it, and what are their solutions or recommendations to address their energy concerns.

CAVINTI

Cavinti is a 3rd class municipality in the 4th District of Laguna in the Sierra Madre Mountain range. The municipality consists of 19 barangays, with a total population of 23,980 based on the 2020 census, where 12,196 are males and 11,754 females. Its main industry is tourism and cottage industries. It is known for ecotourism, particularly as “Glamping Capital of the Philippines” for its scenic and expansive water bodies such as Caliraya Lake, Lumot lake, Twin Falls, and Cavinti Falls. The primary products are pandan-made products, including the Sambalilo or straw hat.

KALIPI

The Kalipunan ng mga Liping Pilipina (KALIPI) is a federation of women’s organizations established by the Department of Social Welfare and Development (DSWD) in the 1980s for the local government units to support and empower women. The formation and management or facilitation of the community-based organization was devolved to the LGUs in 1992, thus KALIPI-Cavinti exists to this day.

Membership in KALIPI Cavinti is voluntary. However, only women whose age fall within 18-59 years old can join since the 60-year-olds and above would already join the association for senior citizens, and those below 18 years old would be joining “Kabataang Barangay” youth organization. KALIPI has a chapter or organizational structure in every barangay. At the municipal level, KALIPI is composed of KALIPI presidents of every barangay. The officers are elected every 3 years, and the organization’s programs or activities are still closely coordinated with DSWD which continues to support or fund some of these activities.

Part II. Understanding the Gender Mainstreaming and GAD programs or budgeting of Cavinti LGU

The GAD acting focal person of Cavinti, Ms. Tena, explained that she is currently in transition as she is in the process of phasing in as acting focal person, and eventual GAD person of the LGU, as the original person assigned this role is retiring this year. She made a brief sharing as regards the LGU’s current GAD and or other gender mainstreaming programs. She presented a document showing a budget for gender project under the Office of the Mayor and explained that the GAD budget/program is determined by the Municipal Council and allocated to the departments including the Office of the Mayor (OM) of Cavinti. On a brighter note, she shared that a Local Council of Women was formed this year, and that it may tap the GAD fund through the departments (i.e. DSWD, OM).

CentRE expressed the aspiration or the aim to realize a budgeting or development process at the LGU level that can integrate the participation of women, and allocation or dedicated support for trainings or realization of sustainable energy to empower women. The representatives of CentRE also reiterated that the organization is willing to support the programming/designing or capacity building for the LGU of Cavinti and KALIPI to initiate this practice in the LGU and become a pilot or model of this gender-inclusive/responsive budgeting and development planning.

Part III. Training/Workshop on Gender-Energy-and Budgeting for Women’s Energy Access

CentRE workshop facilitator and gender resource person, Ann Angala, presented and explained the concepts – gender equality, gender equity, gender mainstreaming. The gender resource person tackled them in an interactive way wherein day-to-day and local situations were used as examples to explain the concepts. Participants were also asked to identify the concepts based on examples or situations presented. To complement the discussion, flyers or information materials explaining the concepts were also distributed to the participants – about Renewable Energy and Picohydro, and about the Women in Inclusive and Sustainable Energy program and activities (WISE).

The participants were divided into two groups for the workshop. They were given situational problem or case, which would require them to discuss among themselves to identify the kind of energy access they want and the purpose of which, and assess their resources or strengths/abilities, then identify the requirements, tools, or resources they will need to reach their goals. An active, lively, and fun group discussions among the groups took place. After the set time for discussion, the groups presented their group outputs. Further explanation about the activity was given after the group sharing or reporting.

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On Day 2, the Aqua Bida training for picohydro development commenced. The first part of the training program focused on understanding renewable energy – the resources, various technologies, specifically pico-hydro systems, and the importance of RE in addressing climate change and in improving the well-being and safety of the people and planet.

As an introduction to the session, Maris Cardenas showed a short video about climate change and the renewable energy targets in the country. She briefly explained the concepts climate change, just transition, and their links to renewable energy.

The key resource person for Day 2 was Dr. Menandro Berana from the University of the Philippines College of Engineering. He was assisted by project manager Engr. Aira Turla, who has also hands-on training on picohydro development including resource assessment.

The morning was devoted for lectures, while the afternoon was used for on-site (river or stream) hands-on resource assessment. The participants' enthusiasm to learn can be seen on them throughout the day, especially as the team went to the sites – trekking and dipping feet and hands on the streams to check the flow rates.

Lectures on Renewable Energy and Pico-Hydro Systems

The day started with a series of lectures led by two key resource persons: Engr. Aira Turla provided a comprehensive overview of renewable energy, emphasizing its importance in rural development and sustainability. Dr. Menandro Berana, on the other hand, introduced the fundamentals of pico-hydro systems, explaining their mechanics, benefits, and potential applications in communities like Cavinti, where natural water resources are abundant.

The discussions were highly informative and tailored to the community's and women's needs, encouraging interaction between the participants and speakers. Key concepts were simplified for easier understanding, focusing on how Cavinti could benefit from adopting renewable energy systems.

Initial Resource Assessment

After the lectures, a resource assessment was conducted in the afternoon, headed by Dr. Berana. Together with members of KALIPI, a local organization, the team visited two sites in Cavinti to evaluate their potential for pico-hydro development. The assessment aimed to identify suitable water sources, flow rates, and geographical considerations necessary for the effective deployment of a pico-hydro system. The active participation of KALIPI members was crucial in ensuring that the local context was considered in the technical evaluation.

Initial Results of the Resource Assessment

The initial assessment of the pico-hydro potential for the specific location indicates a measured flow rate of less than 0.2 cubic meters per second (200 liters per second). However, there is no considerable natural head or vertical drop at the sites visited, which poses a challenge in harnessing significant hydropower. In traditional hydroelectric systems, the combination of both flow rate and head height is essential for generating power.

At the final briefing after the on-site resource assessments, the participants shared their reflections, and were asked if there were clarifications they would like to have or questions about the process. Then altogether, the next steps were tackled and agreed on.

NEXT STEPS

a. Identification of More Sites, Further Evaluation, and Technical Analysis

Since there was no considerable height in the explored sites, it is recommended to look for other potential sites in the area. However, there are possible methods to utilize the available flow rate in the sites visited with alternative approaches.

Firstly, a run-of-river system could be feasible if a minimal head height—ideally between 1 and 2 meters—can be created by constructing a small weir or similar structure. This would provide a manageable vertical drop that may support a pico-hydro setup and enable some power generation.

Additionally, low-head turbine technology offers solutions specifically designed for minimal head situations. Propeller-type or Archimedes screw turbines, in particular, can operate effectively with heads as low as 1 meter, leveraging the high flow rate to generate a usable amount of electricity. These systems are designed for low-head environments and could be viable given the consistent flow of 0.2 cubic meters per second.

Lastly, water wheels or undershot turbines might also be appropriate for this site. These options, while producing lower power outputs, can still be beneficial for limited applications, such as battery charging or powering small LED lighting systems. The efficiency of such systems is generally lower, but they offer a practical solution for sites without significant height.

b. Sustaining/strengthening collaboration with KALIPI Members

The members of KALIPI have been assigned to assist with continuous monitoring of the water sources and to work closely with the technical team in the next phases of project planning. Their involvement will help ensure that the project remains community-centered and that local concerns are addressed early on.

c. Close coordination with the Local Government and MENRO

The results of this initial assessment and the next steps will be presented to the Office of the Mayor and the Municipal Environment and Natural Resources Office (MENRO) for feedback and approval. Their support will be crucial in securing the necessary permits and integrating the project into the broader sustainability initiatives of the municipality.

There will be follow through activities that will be undertaken after the first part of the training. These include another resource assessment to finalize the site, hands-on training for picohydro development, monitoring of the facility, energy efficiency and management training, public fora and continuing discussions with the LGU.

