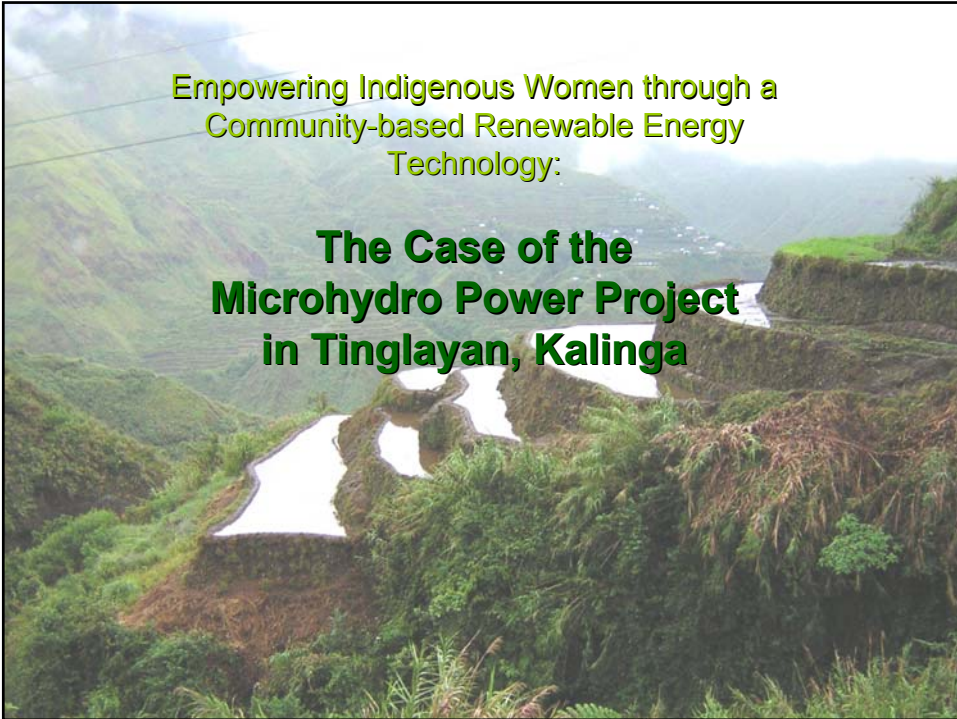
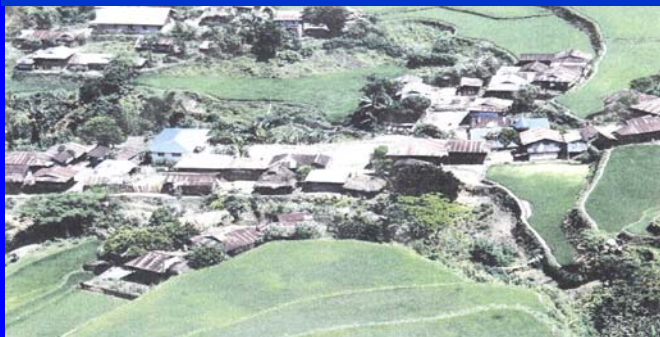


**Empowering Indigenous Women through a
Community-based Renewable Energy
Technology:**

**The Case of the
Microhydro Power Project
in Tinglayan, Kalinga**



**The beneficiaries of a 33-kW MHP
installed in 1999 in Kalinga Province of
CAR, are three 312 households in the
upland villages of
Tulgao East, Tulgao West and Dananao.**

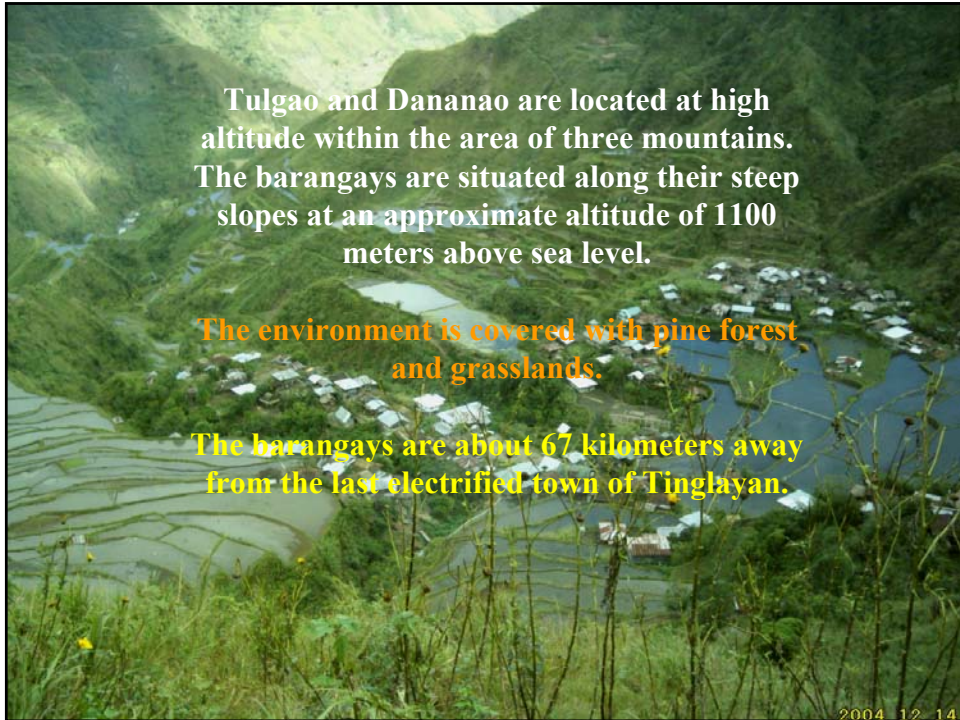


The MHP project was built through the cooperation among:

- **Tribal/community organizations**
- **Local episcopal church**
- **SIBAT**
- **KEEP**

The people here belong to the Tulgao tribe and Dananao tribe of the larger Kalinga ethno-linguistic group.

Conflicts among tribes in Kalinga are settled through the peace pact. Disputes mostly arise from border and relational issues. In 1997, the barangays of Tulgao and Dananao had a deadly conflict over their borders.



Tulgao and Dananao are located at high altitude within the area of three mountains. The barangays are situated along their steep slopes at an approximate altitude of 1100 meters above sea level.

The environment is covered with pine forest and grasslands.

The barangays are about 67 kilometers away from the last electrified town of Tinglayan.

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Kalinga province is identified as one of the poorest provinces in the Philippines.

Tulgao relies on agriculture for food and grows rice as its primary crop mainly for subsistence, i.e., for household consumption.

Prime agricultural land is limited due to the steep slopes upon which they are located.

It is only possible for one cropping of rice per year.

These barangays suffer 6 lean months - period of rice and food shortages, every year.



Wet terraced farming is the predominant form of rice agriculture supplemented by dry cultivation in the swiddens or *kaingin*.

Swidden farms, called *uma*, provide the sources of vegetables and secondary sources of income for most households.



Aside from agriculture, there are other livelihood activities that help augment the income of families during lean months.

- The men of Tulgao produce baskets, soft brooms and mats.
- The men of Tulgao are blacksmith. They produce farm tools.
- Some of the men are also carpenters.
- Men and women work as hired laborers in the farms where the average payment for men is 175 pesos/day while women are paid 75 pesos/day.

Roles of Men and Women in Production

Farming, including rice and swidden, is generally considered women's work. Men's role is limited to land preparation and repairs while women's tasks is much more diverse.

November – December	Land preparation/sowin	Men/women
January – February	transplanting of seedlings	Women
March – May	Cleaning and weeding	Women
June – July	Harvesting	All
August	Second crop, but this is not a common practice	

In swidden farming, women are responsible for most of the activities.

Activity	Number of work days	Participant
Clearing	8 days	Women
Burning	½ day	Women
Final cleaning (<i>papur-as</i>)	3 days	Women
Sowing (<i>osok</i>)	2 ½ days	Women
Weeding (<i>nullog</i>)	2 days	Women
Harvesting (<i>buras</i>)	6 days	Women
Drying	2 days	Women
Winnowing, pounding, cleaning	4 days	Women
Marketing	6 days	Women

Women's Reproductive Work

Majority of the household chores are considered women's task

Domains	Male-dominated Activities	Female-dominated Activities	
Household works	Firewood gathering	Washing of family clothes	
	Food preparation/ cooking (shared role)	House cleaning	
	House repairs	Food preparation/cooking (shared role)	
	Child rearing including discipline of children (shared role)	Rice pounding	
	Caring of sick (shared role)		Food gathering
			Child rearing (shared role)
		Caring of sick (shared role)	



Findings of the Study



Foremost among the benefits is the installation of the MHP in the Bunog Creek situated in the middle of the Tulgao and Dananao tribes, and the opportunity to work together on the project, which lessened the potential of tribal conflicts and emphasized the need for unity and working together.

Hence, community solidarity is enhanced by the community-based project.

The MHP has provided electrification to 282 households in the three villages.

- Household lighting
- Powering of small appliances
- Street lighting
- Lighting for the church, schoolhouse, barangays hall and clinic.

The operation of the ricemill has provided income from MHP-powered facilities, i.e., employment for the operators, and more importantly through

- Monthly Tariff
- Rice mill
- Sugar press
- Weaving
- Blacksmithing



Income from tariff is also generated for the community development fund.

The provision of energy resulted in a real increase in livelihood opportunities with the establishment of sari-sari stores and the increase in basket-weaving by men.

Again, there is a greater potential to improve economic lives of the individual households.

With the improvement of cooperative effort (through organizational and management trainings), current projects may be improved further (e.g., sugar press) and development projects may be further generated. Hence, there is a greater potential for community-based efforts to improve economic the lives of the community.

The MHP provides better light for the well-being of family and access to information and events from outside the community.

The MHP also has improved the attitudes and perceptions of community members towards conservation of forest.

The MHP provides an improved sense of peace and order, with the street lights.

Impact on Women

First, the women contributed substantially to the building of the MHP project.

Women contributed to community-wide efforts at building the micro-hydro system in the community.

Women helped in the hauling of sand and aggregates from the river, fetching water and preparing food. Widows in particular spent longer hours in the work camp.

In the absence of their husbands, the wives ensured participation in the construction.

Women are freed from the daily labor of pounding rice. This has had a tremendous impact on women's time allocation and on reducing drudgery in their daily lives.

Reduction of drudgery on women and girl-child: the help of the rice mill

Rice pounding is one of the major tasks of women and girl-child in community. In a survey conducted during the feasibility study of the MHP, it was found out that the number of hours spent in pounding rice/play every day is 1.15 hours in Tulgao east and 1.70 hours in Tulgao west. The quantity of rice milled in an hour is 2.5 kilos. *With the setting up of the rice mill in 2002, women and girl-child are unburdened by this task since most of them avail of the services of the rice mill. Moreover, the rice milling provided rice bran as feeds for livestocks.*

Potential for community projects that generate income is made possible, such as bakery, that is considered as women's task.

The MHP has improved socialization and greater participation of women in community affairs.

This has been a result of their important contribution in the realization of the MHP project.

In the operation and maintenance of the micro-hydro, women play the functions of bookkeeping, cashiering and payment collection.

However, repair, maintenance and troubleshooting are still regarded as men's domain.

The women were not participant in any technical training provided so far to operators and other members of the community.

Most of the MHP trainings received by men in the community, are technical in nature and are related to repairs and maintenance.

Women take part in project management.
Three out of the seven officers and
members of the project' board of directors
are women.

Recommendations

Recommendation

#1

Because the project has been produced by the community or through collective efforts, where everyone contributed to all phases of its establishment, the access and benefits to development should be guided and ensured by good community planning.

There is a need to involve women significantly from needs assessment and planning to ensure that their concerns are incorporated in the plan.

Recommendation

#2

There is a need to consciously address the participation, access and benefits of women from the community-based system.

Service providers such as NGOs, need to assist in the development of instruments and methodologies for ensuring that this concern is incorporated in all project development processes. Most of the economic gains (as shown in the Tulgao MHP) will be limited to men, if the matter is not consciously taken to task.

Recommendation

#3

There is a need to increase women's knowledge, skills and participation in technical tasks of operation and maintenance of MHP, in order to broaden their understanding and perspective of the system that they help manage. If not, women will continue to be regarded as mere end-users of electricity.

Because of their equal right to the utilization and development of the system, women should not be limited to stereotyped roles.

Recommendation

#4

There is need to mainstream gender in policies on renewable energy at all sector.

From the positive outcome of this study to the conditions of rural women, it is recommended to mainstream women issues and concerns in policies on renewable energy to really address the plight of women.

Recommendation

#5

There is need to document and conduct studies on women completed and on-going projects in renewable energy.

It is recommended that similar studies can be conducted to highlight gains of renewable energy in general and empowering women in particular.

Recommendation

#6

Scaling up of community-based RE projects on women and renewable energy. This study has proven the adaptability of the MHP to certain rural conditions where it is difficult for grid to reach. Through the community initiated and -based approach, benefits beyond electrification can be made possible, i.e., socio-economic benefits through livelihood. It is within this context that the benefits for and access by women can be also made possible.

The scaling up of the community-based RE systems with consciousness to improve the conditions of rural women is strongly recommended.

Thank You!