

Creating Conditions for Gender Equity in Rural Electrification Projects

Experiences from the Nicaraguan Electrification Project (PELNICA)



Case Study
Nicaragua, 2014



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Preface

The International Network on Gender and Sustainable Energy (ENERGIA) and the International Union for the Conservation of Nature (IUCN) signed a collaboration agreement in 2008 to integrate the complex linkages between energy, gender, and the environment. Implementation of the initiative entitled "Women as Leaders and Change Agents in the Energy Sector" began in 2013 in four countries of Central America, coordinated by the IUCN Global Gender Office, with support from ENERGIA. This initiative was made possible thanks to financial support from Hivos, the Humanist Institute for Development Cooperation.

The objectives included producing written and visual materials to capture and express the way in which gender can be mainstreamed within energy projects. The initiative seeks to document and share experiences, lessons learned, best practices, and recommendations, as a way to support and build the capacity of decision-makers, project implementing organizations, grassroots groups, energy and sustainable development experts, and government representatives, increasing the number of energy projects with gender equality.

The Latin American Energy Organization (OLADE), as part of its Gender Strategy supported by the Canadian cooperation agency, has joined efforts with ENERGIA and IUCN to identify and document case studies on a regional level to support gender mainstreaming in the energy sector. This collaboration has made it possible to share the experience from the Nicaraguan Electrification Project (PELNICA), implemented by the National Electric Transmission Company (ENATREL).

This document is the second in a series of four case studies that will be conducted in Central America under this initiative. "Creating Conditions for Gender Equity in Rural Energy Projects: Experience in the Nicaraguan Electrification Project, PELNICA" highlights the results for gender equality obtained through the PELNICA initiative, and shares some reflections on how this six-year process has been able to influence the design and implementation of other similar projects in Nicaragua, as well as expand its impacts by building strategic alliances with local governments. This study pays particular attention to the impacts that PELNICA has had on: (i) women's economic empowerment, (ii) breaking out of traditional roles in the home and in economic activities, and (iii) increased women's participation in community decision-making.

This case study has been compiled by ENERGIA. The study would not have been possible without the collaboration of Irma Gutiérrez, Gender Specialist, and Ronald Tenorio, Business Development Specialist, from ENATREL. Both Gutiérrez and Tenorio facilitated the information gathering process through the final project monitoring evaluation. Our thanks to them, and especially to ENATREL, for allowing us to share their experiences and for their arduous work to include gender equity in all of their rural electrification initiatives.

1. Introduction

The Nicaraguan Electrification Project (PELNICA) is implemented by the National Electric Transmission Company (ENATREL), with financial and technical support from the Ministry of Foreign Affairs, Trade, and Development from Canada. PELNICA is implemented in seven departments of Nicaragua (Nueva Segovia, Madriz, Estelí, Jinotega, Matagalpa, León, and Chinandega), and it was designed with the objective of contributing to economic development to improve quality of life for women and men. For this reason, project implementation has used a series of different gender methodologies and tools. PELNICA has focused its activities on promoting greater women's participation in decision-making spaces, as well as supporting women's economic empowerment as a needed element for rural sustainable development.

This study highlights the results for gender equality obtained through PELNICA, and shares some reflections on how this six-year process has been able to influence the design and implementation of other similar projects in Nicaragua, as well as expand its impacts by building strategic alliances with local governments.

2. Background and Geographic Context

The Republic of Nicaragua is a country in Central America that shares a Northern border with Honduras, and borders Costa Rica to the South. Nicaragua has approximately 6 million inhabitants¹, over 50% of whom are women. The ethnic distribution of the population of Nicaragua is *mestiza* (mixed ethnicity) in its majority (69%), followed by white (17%), black (9%), and indigenous (5%).² The official language is Spanish. Other languages spoken include Miskito, English Creole, and indigenous languages along the country's Caribbean coast.

Nicaragua is the poorest country in Central America, and the second-poorest in the Western Hemisphere. The per-capita Gross Domestic Product (GDP) of the country is USD 4,500 and 42.5% of the population lives under the poverty line.³ Despite these economic disadvantages, Nicaragua has been able to improve the provision of basic water and sanitation services, increase life expectancy, reduce infant mortality rates, and increase vaccination percentages.⁴

Nicaragua has also made important strides toward gender equality. These efforts have earned Nicaragua a fifth place ranking from World Economic Forum in terms of gender equality in the political sphere, and ninth place in the world in terms of equal opportunities for women.⁵ The legal and institutional framework for women's equality is rooted in the Political Constitution of Nicaragua. The Constitution is the foundation for the Gender Policy and National Human Development Plan promoted by the National Reconciliation and Unity Government (GRUN, 2007), as well as a series of individual laws: (i) Law No. 648, "Equal Rights and Opportunities Law"; Law No. 612, "Reform Law and Addition to Law 290: Law for Organization, Mandate, and Procedures of the Executive Branch"; Law No. 779, "Comprehensive Law against Violence against Women"; Law No. 476, "Civil Service and Administrative Career Path Law"; Laws No. 40 and 261, "Municipal Law" (promotes a 50 – 50 ratio between men and women participating in decision-making spaces).

¹ INIDE (2012).

² CIA (2014)

³ Ibid. Calculation of the poverty line according data from 2007.

⁴ Idem.

⁵ Technical Gender Unit at the National Assembly (2013).

In terms of the national energy situation, MEM⁶ data report that firewood is the most widely-used energy source in Nicaragua (45.8%), followed by petrol products (41%). Nicaragua has been able to increase electrification on a national level, rising from 54% in 2006 to 74% coverage in 2013. The electrification goal is to reach 90% coverage by 2017.⁷

Nicaragua suffered an energy crisis in 2007 and had to install new thermal plants to resolve energy generation issues that had caused constant blackouts. This investment resolved the lack of electricity by the end of 2008. Once past this crisis, a medium-term strategy was designed to shift the energy-generation matrix by reducing barriers to investment in renewable energy. This strategy is an ambitious one, as it seeks to jump from 20% of electric energy generated by renewable sources in 2006, to reach 80% in the year 2017.⁸

Initial experiences in including gender considerations in these projects began in Nicaragua in 2005. This experience emerged with technical assistance from the Canadian International Development Agency (CIDA) provided to the Nicaraguan government to create a plan and develop the rural electrification strategy. This strategy considered access to energy sources as a means to facilitate rural development, which should also include a community-level agenda for gender equality.⁹

In this context the Support Fund for Networks of Local Organizations (FAROL) project was generated, with the goal of: "Helping to improve socioeconomic conditions for the most vulnerable segments of the rural Nicaraguan population through agriculture, water and sanitation, and rural electrification initiatives, actively integrating gender equality and environmental policies established by both governments, while fortifying processes for decentralization of the Nicaraguan State."¹⁰ FAROL was a key project to integrate topics of women's leadership and participation in rural electrification projects, not only through direct work in the communities, but also by hiring gender specialists to support this process and raising awareness of the technicians working in the energy sector.

3. Project Description

The Nicaraguan Electrification Project (PELNICA) is executed by the National Electric Transmission Company (ENATREL). In July, 2009, PELNICA began to build electricity distribution networks in the Departments of Nueva Segovia, Madriz, Estelí, Jinotega, Matagalpa, León, and Chinandega, with the objective of contributing directly to the economic development and improving the quality of life for 102,000 people.¹¹ The project seeks to achieve economically and operationally sustainable electrification for rural homes and residential sectors in 659 communities, and to meet the energy needs of the women living in these areas.

ENATREL committed to gender mainstreaming starting with the project proposal itself, taking ownership of GRUN gender policies and the experiences generated through the FAROL project. PELNICA thus seeks not only to increase women's participation in community and local organizations, but also to provide support to rural women and men to allow them to make productive use of energy and become local entrepreneurs, with financial support from the project.

⁶ The MEM was created in 2007 to promote and prioritize the energy sector.

⁷ Rappaccioli, E. (2013).

⁸ MEM (2012).

⁹ Trejos, A. (2014)

¹⁰ MINREX (n.d.)

¹¹ CIDA (n.d.).

The specific objectives for work with women and men through PELNICA include:¹²

- To ensure socioeconomic and gender equality in access to resources, to begin micro or small businesses.
- To ensure participation and access for male and female beneficiaries of energy infrastructure to the tools and financing that PELNICA provides through its Rural Development (Business Development) and Gender Equality Strategy (DRIG).
- As the grid is built, to ensure that men and women have equal opportunities to extra income from work performed in temporary contracts from construction companies.
- To increase the percentage of positions held by women in community councils and decision-making spaces.
- To extend capacity-building for women on diverse topics including self-esteem, leadership, entrepreneurship, etc., with more women participating in support networks and working for their interests, compared to men.

PELNICA concluded in late 2014, and an evaluation during the implementation period performed in October, 2012, revealed that by that date the project outcomes had exceeded their initial targets by approximately 10% in all of their indicators. This includes the number of households connected to the electricity grid, number of beneficiaries, number of gender workshops facilitated in over 48 communities, number of women and men who express satisfaction with the changes in their community, number of women heads of households with access to services, etc.

Taking the data from the Annual Operations Plan (AOP) for 2013 – 2014 as an example, PELNICA has specifically documented project beneficiaries by sex, age, academic level, and heads of household, as expressed in the tables below:

Table 1. Age of the head of the household, *Sex of the head of the household.				
		Sex of the head of the household		Total
		Men	Women	
Age of the head of the household	16 to 21	29	18	47
	22 to 27	114	49	163
	28 to 33	147	72	219
	34 to 39	138	62	200
	40 to 45	120	50	170
	46 to 51	105	54	159
	52 to 57	86	51	137
	58 and over	162	124	286
Total		901	480	1,381

¹² Rojas, A.V. and Siles, J. (2014)

		Number of women		Number of men				
		Frequency	Percentage			Frequency	Percentage	
Valid	1	544	39.2	Valid	1	562	40.5	
	2	413	29.7		2	416	29.9	
	3	181	13		3	187	13.5	
	4	58	4.2		4	73	5.3	
	5	26	1.9		5	24	1.7	
	6	14	1		6	11	0.8	
	7	5	0.4		7	4	0.3	
	8	2	0.1		Total	1,277	91.9	
	9	1	0.1		Lost	System	112	8.1
	Total	1,244	89.6		Total		1,389	100.0
Lost	System	145	10.4					

Total		Academic level of the head of the household						Total
		Illiterate	Literate	Primary school	Secondary school	Technical degree	University	
Sex of the head of the household	Men	99	4	626	123	16	33	901
	Women	72	0	268	91	14	35	480
Total		171	4	894	214	30	68	1,381

Data are even collected on home ownership, in order to facilitate information for municipal governments in land legalization processes and implementation in the near future of the land purchasing law for women, as described in the table below:

		Total			Total
		If you own your home, do you have a deed?			
		Yes	No	In process	
The house I live in is...	My own	791	292	229	1312
	Rented	25	4	4	33
	Squatting	10	9	25	44
Total		826	305	258	1389

The table above shows that most of the respondent families (1,312 families, or 94.46%) own the homes where they live. Nonetheless, only 791 of these families (60.29%) have a property deed. Few families (77, or 5.54%) report renting or squatting. Local governments have agreed that when municipal deeds are granted for these properties, they should recognize joint ownership of the property, according to

a database disaggregated by sex. That is, these homes should be declared as property of both spouses, in order to ensure that women are also considered as owners of the land where the family lives.

Outcomes from PELNICA

By March, 2013, PELNICA had produced the following outcomes:

- (i) 17,457 homes (90,100 people) located in 379 communities have access to electricity (accounting for 90% of the people and 58% of the communities originally projected)
- (ii) 20 small businesses received technical assistance to fortify their operations and administrative management. Each of these businesses has a plan developed by the project staff.

Source: MAECD (n.d.)

4. Project Implementation

PELNICA conducted a baseline study at the start of the project, which revealed that women account for the majority of the population in the departments and communities in which the project focuses its work. The baseline also found that: (i) The majority of the population is low-income; (ii) nearly 15% of the women are illiterate; (iii) only 21% of the women own their own housing plots, and; (iv) the communities in general have little access to health services, no access to credit, and few collective structures or associations. The study also identified that these departments and communities suffer severe environmental damages.

As mentioned previously, PELNICA has a broad database disaggregated by sex, heads of households, age, type of energy used for illumination prior to electricity, etc. These data were used to design new activities and project objectives, with a selection of communities to be served through the DRIG and the creation and consolidation of a synergy network to make the best use of resources from other institutions that could compliment the technical efforts of the DRIG.

The DRIG was designed for women and men to make productive use of energy with the creation of micro, small, and medium-size enterprises (MSMEs) financed by the project. The team in charge of implementing this strategy is made up of people with experience working in the communities, with a gender balance among its members.

PELNICA has also invested in building the capacities of its staff, supporting them to take courses on gender issues offered at universities in the country such as the Central American University (UCA) and Polytechnic University (UPOLI), or through direct trainings provided by the gender equality specialists. In fact, the

The DRIG is made up of:

- One Gender Equality Specialist (woman)
- One Business Development Specialist (man)
- Three Social Promoters (one woman and two men)

engineers and field staff are receiving specialized gender trainings in order to operate as community outreach promoters. These trainings help the technical staff to build closer relations with the families and gather information on health, energy, and other topics, with data disaggregated by sex. According to Salvador Mansell, Executive President of ENATREL, this process of internalizing gender equality has helped the company to be one of the government institutions that has fulfilled the state mandate of promoting gender equality.¹³

PELNICA uses a series of tools and diverse methodologies to raise awareness on gender issues among the target group in the communities. These methods include role playing, reflection and analysis, dance and play sessions, group work, mini-lectures, plenary discussion, videos, and others. The methodological starting point is popular education, which focuses on "learning to learn" (knowledge, procedures, and attitudes) and understands learning as an integral communication process. The methodology also builds capacity for understanding and expression as the foundation for learning, facilitates decision-making, and develops critical attitudes and positive proposals to address individual and community problems.



PELNICA has sought out partners with knowledge of gender issues on an implementation level. Many of the partners are thus the Women's Secretariats at municipal governments, which support training efforts and have provided material, financial, and technical accompaniment to the creation of the Municipal Gender Policies. PELNICA also works with NGOs such as the Women and Community Development Foundation (FUMDEC), the Foundation for the Development of Jinotega (FUNJIDES), Intervida, Engineers without Borders, and La Cuculmecca, among others.

PELNICA collaborated with the Special Ombudswoman for Women, and the NGO Fundación ETEA to organize the "First Forum on Women's Participation in the Local and National Economy". This forum launched a research process on the gender profile of the economy of Jinotega, which was the foundation to build proposals for women's programs that could respond to the economic gaps identified. Other research and studies were also presented at the forum, including a "Gender Analysis of the Coffee Value Chain", which demonstrated the disparity between the work performed by women and the slim economic compensation that these women received for their labour, as the last link on the chain for this sector.

¹³ Mansell, S. (2014)



PELNICA has committed to incorporating training and awareness-raising modules for other stakeholders in the energy sector, including municipal authorities, as one of the tools to promote gender equality through their energy interventions. As a result, certain municipal governments have asked ENATREL to support their efforts to create Municipal Gender Policies and build municipal institutional capacity. The Municipal Gender Policies of Yalagüina, Jinotega, and Esquipulas were thus created this way with core support from PELNICA.

PELNICA also worked together with other local stakeholders such as the Municipal Government of Yalagüina and Plan Nicaragua to organize and hold the “First Municipal Forum for Non-Violence”. The forum demonstrated and publicized the high levels of violence against women that had previously been accepted as something "natural". Violence prevention was later positioned on the municipal public agenda as a result of this activity.

The project worked with the Women and Community Economic Development Foundation (FUMDEC) to organize the “First Women’s Economic Forum” in the Municipality of San Isidro, Matagalpa. The objective of this forum was to recognize the contributions that women make to the local and national economy. A fair was also organized to sell products made by the women themselves in order to gain income for their households.



PELNICA also joined the Women's Economic Agenda Program organized by the UN agency for Gender Equality and Women's Empowerment (UN Women, previously known as UNIFEM) and the United

Nations Development Program (UNDP) in Central America. As a state institution, alongside the Ministry of the Economy, PELNICA contributed to a document on "A Coordinated Economic Agenda for Nicaraguan Women". This program conducted diverse studies on the approaches for women's economic activity in the country and women's valuable contributions to the national economy.



5. Main Challenges Encountered

Despite the positive experience from the FAROL project, one of the greatest challenges that PELNICA faced was in raising awareness and building understanding among the predominantly male technical staff about the need to implement the project in a gender-sensitive way. Irma Gutiérrez, the PELNICA gender expert, recalls that gender trainings for project and company officials faced resistance at first from the participants themselves. Despite this challenge, perseverance and continuity in the awareness-raising process has generated positive results, to the extent now that ENATREL staff voluntarily report the gender inequities that they encounter in their daily work in the field, and they are able to translate this awareness into a new way of conducting their professional and family activities.

The following photographs show examples of the inequities seen in the communities, and the ways they have been documented by supervision staff:



Given that PELNICA is in its final phase, one of the largest challenges for ENATREL is to formalize its experience working on gender issues, so that this accumulated experience can be applied in other similar energy projects such as the National Program for Sustainable Electrification and Renewable Energies (PNESER), which manages a budget of 400 million US dollars. Another important challenge is to ensure effective implementation of institutional policies, which must begin with an institutional diagnostic study. According to Salvador Mansell, this is feasible thanks to ENATREL's openness and support for gender issues, but it remains a challenge that must be resolved in the short or medium term; it is important to make sure that the necessary financial resources are available to conduct gender activities appropriately in this process. In this sense, the necessary steps are being taken to create a Gender Unit within the institution, which would reinforce ENATREL's commitment to mainstreaming gender throughout the organization.¹⁴

6. Impacts and Outcomes

6.1. Energy Services Obtained and Improvements in Quality of Life

During the systematic documentation of the PELNICA project, women expressed great satisfaction with the arrival of electricity. Many confess that they can now enjoy some moments of rest during the day, as electricity allows them to complete their usual tasks in less time and with less physical effort. Some of the manual tasks that have been substituted with the use of electric appliances include: grinding corn (many communities have installed electric grinders), preparing coffee (with access to electric roasters and brewers), and mixing and blending. These changes allow many women to dedicate part of their free time to learning to read, improving their knowledge and academic level, participating in meetings at night to discuss issues in the community, holding recreational or religious activities, and other activities that they simply could not have taken on prior to the arrival of this energy service in their communities. In fact, having electric energy goes hand-in-hand with women having electric devices to make use of it. Women can now cook food and preserve it for the next day using a refrigerator, etc.

An impact study on electric projects conducted by PELNICA determined that the project has had an overall positive impact on access to education for children, adolescents, and even adults. Study groups have been organized and meet at night; parents are able to help their children in the evenings to do their homework for school without straining their eyes to work by candlelight; and many schools now have installed equipment such as tape recorders, projectors, and other devices to facilitate learning. To further improve night access to schools, PELNICA has included lighting in its energy structure to illuminate the areas around the schools. Lighting has also been installed around health centres and clinics.

The impact study conducted by PELNICA documented that access to illumination has: (i) Reduced domestic accidents as people no longer have to move around in the dark late at night or in the early morning; (ii) reduced incidents of bites or stings from poisonous animals or snakes; (iii) improved access to latrines at night, reducing defecation in the open air, and; (iv) reduced robberies and other crime, as families are able to rapidly switch on lights, etc.

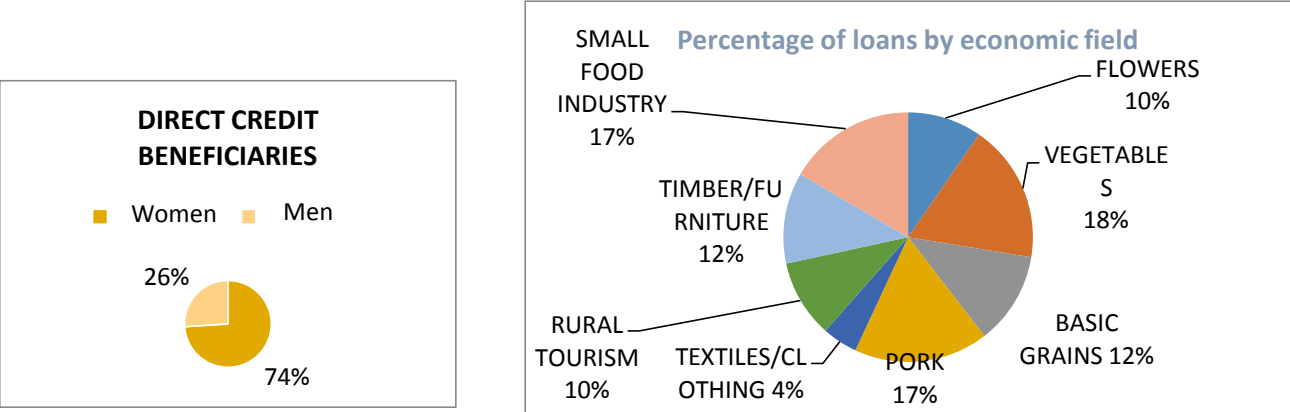
¹⁴ Mansell, S. (2014)

The study also documented that access to electricity has generated improvements in communications. For example, the ability to charge mobile phone batteries has catapulted the percentage of mobile phone users from 4% of the population at the time of the baseline study, to 42% in the year 2014. Additionally, most of the households have a television and radio to be better informed. Better still, households have refrigerators that allow them to include new foods in their diet that previously were difficult to maintain, such as meats, pasteurized milk, and others, leading to better nutrition for the beneficiary families.



6.2. Economic empowerment and non-traditional roles

PELNICA projects have been able to generate greater impacts than its PELNICA’s predecessor, FAROL, particularly with respect to rural women's economic empowerment. Under the FAROL project it was not possible to support women to produce business plans or provide financial support and follow-up for their entrepreneurial initiatives. This shortcoming was resolved through PELNICA, thanks to the creation of a loan fund supported by MAECD. This fund allowed PELNICA to facilitate access to loans ranging from USD 1,000 to USD 15,000 US dollars for the development of MSMEs. The objective of this loan fund is for women to be able to jump from being entrepreneurs to being businesswomen.



In all, PELNICA has granted loans to 267 women and 94 men. Areas: Horticulture, pork production, timber/furniture, textiles/clothing, rural tourism, flower production.

One example is the Organic Coffee Farmers’ Cooperative for coffee planting and harvesting, which is made up of both women and men. PELNICA has supported this cooperative to install a coffee roaster and grinder to be able to sell coffee as a finished product. Support from PELNICA was not limited to

the loan to purchase the equipment; the project also provided technical support for the cooperative to register its own brand and sanitary certification. The photographs below show the methods before and after the cooperative purchased its machinery.



Another example of productive use of electricity is the case of the women of the community of El Canal, who rent land to produce vegetables (squash, cabbage, tomatoes, and others), which are then sold to local markets and supermarkets. These women can now use electric pumps to irrigate and maintain their crops.

As a result of the gender awareness processes and programs to support and provide loans to women, women have undertaken economic activities traditionally reserved for men, taking on roles as bakers,



pork butchers, small business administrators, brick makers, bricklayers, carpenters, etc. ENATREL has also trained and certified 60 women as line workers (installing and maintaining electric tension lines).

One of these projects has supported groups of women organized into collectives for production and sale of different types of clothing in the community of El Dorado, Municipality of Jinotega. These women received a training as seamstresses given by the National Technological Institute, after which PELNICA financed the purchase of electric sewing machines for these women to begin their small businesses. PELNICA has also supported these groups to create their business plans.

In a similar case, a group of women from the community of Espala Quemada, in Matagalpa, organized to open a bakery with financing from the project. Now these women intend to pay down their loan ahead of schedule and purchase machinery to improve their production, as demand for their products has grown. The equipment that this group wishes to acquire includes an electric kneader and a mixer to make pastries.

Making clay bricks: Entrepreneurship that changes traditional roles

Making bricks is a traditionally male-dominated trade. Nonetheless, a group of women in Yalagüina has begun to make clay bricks thanks to PELNICA electrification works. These women use electric machines to do work that previously could only be done by hard physical labour, and thus was limited to men. Access to electricity has allowed women to have lighting in their homes and begin their work day sooner.

PELNICA supported a woman entrepreneur to obtain a loan from the credit fund to venture into brick production. This woman opened her own brick factory, just one year after completing a training provided by PELNICA. She now manages 10 men in charge of making bricks, and she oversees project quality control and variety.

Through these efforts, this entrepreneur has been able to make home improvements and build a kitchen area.

Source: Gutiérrez, I. (2014)



These and other interventions have been able to change gender stereotypes.¹⁵ For example, when electricity came to the community of Aranjuez in the Department of Matagalpa, women identified the opportunity to take advantage of the high-quality flowers growing in their gardens. These women began to use electric energy to provide heat and light at night to different types of flowers, to help them grow and develop higher quality. These women organized a collective called Multiflores, in which they work together with men to sell the flowers that they produce. These women report that the benefits from their activities have let them invest part of their income in improving the conditions of their labour, and their social conditions and position.



6.3. Women's empowerment and participation in decision-making

Investments made by PELNICA in capacity-building and awareness-raising workshops in the communities have borne fruit in terms of greater acceptance of women's participation and changing household roles. The project has documented that after its interventions, women are leading community meetings; women's capacity to lead these activities is no longer up for debate. Comments have been documented of men themselves recognizing that while electrification was important in and of itself, introduction of gender issues was even more important, as it has transformed family relations. PELNICA has documented these changes through testimonies recorded in the midterm evaluation. Some of these testimonies include comments such as: "Now I sweep the house, too", "Now I think it is alright for my son to wash dishes", "I understand that women also have rights and should demand them", and "Now I take care of the children while she goes to the community meetings", etc.

PELNICA has also been instrumental for the implementation and development of gender equality policies in the municipalities in which project activities were carried out. Close linkages were developed with the Women's Secretariats in municipal governments to support these institutions in the creation of their rural development policies and to increase women's participation in municipal councils. This

¹⁵ Trejos, A. (2014)

engagement has meant that project benefits are not limited to the activities of the energy components themselves; the benefits extend to the entire community.

Some of the achievements for women's participation and empowerment obtained through PELNICA have been documented as described below:

- Women's desire to gain greater knowledge and capacity to improve their skills and abilities as leaders through leadership and self-esteem workshops has helped them to overcome their fears of speaking in public and expressing their ideas and proposals. PELNICA has set out to document the community proposals made by women.
- Implementation of the actions of the Municipal Gender Policies conducted in the municipalities.
- Greater women's participation from the communities in local organizations such as Family Cabinets, and Community and Life groups, in which women take on new leadership roles. PELNICA has documented an increase in women's participation of over 10% in the communities served by the project; some of these women have taken on the highest leadership roles of community coordination.
- Greater numbers of women approaching municipal governments to pursue different types of projects for their communities, including: (i) access to potable water; (ii) night schools and adult literacy groups in the evenings; (iii) requests for electrical equipment such as recorders and other sound equipment for school; (iv) night-time services at health clinics.

6.4. Institutional ownership of gender methodology

The PELNICA project has been instrumental in mainstreaming gender issues throughout ENATREL; the experience generated by the project has been used to inform, develop, and implement the same format in the Small Hydroelectric Plant (SHP) project. The SHPs already existed at the start of the PELNICA project, but the experience generated through PELNICA helped to hire a gender specialist to work with the SHP project in order to increase women's participation in the boards of directors of community electric companies. This way, women could take ownership not only of the use of electricity, but of the maintenance and business management elements of SHPs as well. At this time there are approximately 30 SHPs including hydroelectric stations and turbines, which provide electricity for 10,380 families, or approximately 62,000 people. The boards of directors and members of the SHPs receive different gender trainings, including: (i) building a budget with a gender lens; (ii) inclusive communications, and; (iii) formulating projects with a gender lens:¹⁶

The gender methodology developed through PELNICA should be transferred or serve as input for other projects implemented by ENATREL. These projects may include the PNSER, which seeks to reduce poverty through the promotion of access to energy efficient and sustainable services for a portion of the Nicaraguan population.¹⁷

PELNICA has also been instrumental for the implementation and development of gender equality policies in the municipalities in which project activities were carried out. Close linkages were developed with the Women's Secretariats in municipal governments to support these institutions in the creation of their rural development policies and to increase women's participation in municipal councils. This engagement has meant that project benefits are not limited to the activities of the energy components themselves; the benefits extend to the entire community.

¹⁶ Trejos, A. (2014)

¹⁷ IADB (n.d.)

PELNICA has also generated changes internally in ENATREL in terms of the understanding and ownership of gender equality issues. With the end of the implementation phase approaching, technicians no longer show resistance to gender equality issues. To the contrary, "...now the engineer that collects the information also collects social data...."¹⁸ As a result, the project has been able to access information on the ages of the beneficiary population and data disaggregated by sex, academic level, vaccination, registration (or non-registration) in civil records, or other data of interest.

Additionally, the Executive President of ENATREL has recognized a positive difference in the benefits generated by projects implemented through more direct engagement with the communities, and with women in particular. This has led ENATREL leadership to affirm that applying a gender lens is a necessity and that this approach must be integrated in the projects managed in the ENATREL portfolio; the company's institutional structures must be strengthened to facilitate this integration by creating a gender unit to provide support in larger rural electrification projects.¹⁹

7. Relevance of the experience and lessons learned

7.1. Project relevance

The experience generated by PELNICA demonstrates that it is possible to undertake large-scale rural electrification projects with a gender equality approach. The project also demonstrates that government agencies can support electrification projects to increase economic, social, and development benefits through improved access to energy.

In addition to the best practices described previously, PELNICA has signed an agreement with the electricity distributor to offer talks in the communities to explain to men and women the importance of paying energy bills on time, savings and efficiency of equipment and lighting, where to present complaints for insufficient services or incorrect billing, etc. This new format allows the male and female population to have a base of knowledge to use and access electricity services.

ENATREL has approved and begun to implement a new phase for PELNICA, which indicates that the experience gathered since 2009 may be reproduced and improved in the second phase of the project. Given that ENATREL is seeking to incorporate the PELNICA gender approach across its institutional structure through a gender unit and the implementation of an institutional gender policy, it is reasonable to expect that this gender approach will also influence the design and implementation of other electrification projects in Nicaragua, such as PNESER.



7.2. Lessons learned

PELNICA has generated a series of lessons learned, the most valuable of which recognizes that work toward gender equality is a process that requires time and institutional commitments. PELNICA has been able to make great advances in terms of gender equality, women's (economic) empowerment, and changing traditional roles. Nonetheless, these benefits have come over the course of a six-year process that has included support by the company leadership, international donors, and constant accompaniment from a gender specialist dedicated to coordinating and conducting gender-sensitive activities within the electrification project. The institutional adoption of the PELNICA methodology will allow ENATREL to keep the gender lens present in its rural electrification projects and increase the social and economic benefits from its initiatives.

The conjunction of gender issues with economic development has been a key factor in PELNICA's success. This has allowed the general population to recognize that the project overall contributes significantly to the fight against poverty by reducing economic gaps and providing greater advantages for women.

Additionally, demythologizing gender issues through trainings, everyday efforts, and using simple examples congruent with the local reality, has produced greater acceptance of these topics among the women and men in the communities, promoting changes in attitudes and traditional roles. The project recognizes that integrating gender considerations in its implementation made it possible to perform the activities successfully. For example: (i) Holding workshops at times convenient for women, to allow them to finish their household responsibilities; and (ii) implementing "day care" systems in which one woman was hired to look after all of the children of the workshop participants. This ensured that children would be cared for and receive attention; children were given toys, balloons, biscuits, juices, etc., and the women were able to participate more actively and without distraction.

Another lesson learned was with regard to synergy: It is not reasonable to expect that possible institutional allies help project personnel to build their own work plan; these allies have their own plans that require resources (human, financial, and material). As PELNICA had sufficient resources for gender issues, the project was able to be strategic in the organization and implementation of activities on this topic. Without timely and appropriate funding from international cooperation, and the support and initiative from community leaders, it would be difficult to undertake a project of this scope and nature.

Inclusion of capacity-building, community organizing, and community relations between leaders and the project team helped to amplify the project's probabilities for success, save for any possible delays on the part of the local governments.

The project has also identified certain situations that will continue to require attention from ENATREL. For example, given that the patriarchal model legitimizes the power and authority of men over women in all spheres of life, including private life, there is a clear need to continue the gender workshops, including discussion of new forms of masculinity, to continue to contribute to deconstructing this model. Internally, there are still some mistaken conceptions on the topic of gender held by ENATREL members. It is important to work more with personnel that have still not been trained on the topic, for example, line workers.

In the communities there is also an erroneous idea that because many women are not paid, they are not working, even when women may run their own MSMEs. Remedying this misconception has required intensive work, and will continue to require attention. Lastly, it is necessary to offer businesswomen a solid financial education to develop their businesses. Many of these women have expressed that they now understand for the first time the need to manage money; this is a fundamentally important component for the sustainability of women's economic activities.

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9. Acronyms and abbreviations

AOP	Annual Operations Plan
CIA	Central Intelligence Agency
CIDA	Canadian International Development Agency
DRIG	Rural Development and Gender Equality Strategy (Estrategia de Desarrollo Rural e Igualdad de Género)
ENATREL	National Electric Transmission Company (Empresa Nacional de Transmisión Eléctrica)
FAROL	Support Fund for Local Organization Networks (Fondo de Apoyo a Redes de Organizaciones Locales)
FUMDEC	Women and Community Development Foundation (Fundación Mujer y Desarrollo Comunitario)
FUNJIDES	Foundation for the Development of Jinotega (Fundación por el Desarrollo Jinotegano)
GDP	Gross Domestic Product
GRUN	Government of Reconciliation and National Unity (Gobierno de Reconciliación y Unidad Nacional)
INATEC	National Technology Institute (Instituto Nacional Tecnológico)
INIDE	National Institute for Development Information (Instituto Nacional de Información de Desarrollo)
ISF	Engineers without Borders
MAECD	Canadian Ministry of Foreign Affairs, Trade, and Development
MEM	Ministry of Energy and Mines (Ministerio de Energía y Minas)
MINREX	Ministry of Foreign Affairs (Ministerio de Relaciones Exteriores)
MSME	Micro, Small, and Medium-size Enterprises
PELNICA	Nicaraguan Electrification Project
PNSER	National Program for Sustainable Electrification and Renewable Energy (Programa Nacional de Electrificación Sostenible y Energía Renovable)
UCA	Central American University

UN	United Nations
UNDP	United Nations Development Program
UN Women	UN Agency for Gender Equality and Women's Empowerment
UPOLI	Polytechnic University

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