Gender Summit® 8

North & Latin America 2016

Science without borders:

Improving impact by interlinking gender, geographic, disciplinary and educational dimensions.

28-29 April 2016, Mexico City, Mexico

Gender Summit 8 North & Latin America 2016

The following texts were selected in a Call for Proposals by the Gender Summit 8 Regional Committee for inclusion in the Proceedings. The key selection criteria were the closeness of the research subject matter to the content of the Programme of the GS8 North & Latin America and overall interest of the topic.

February 2017

"As a Gender Summit supporter and as a representative of the Mexican National Council for Science and Technology (CONACYT) I would like to thank you for the wonderful experience we had hosting this important event in Mexico City, where we welcomed people from 24 different nations. The GS8 was the first, of hopefully many more editions, adding the Latin American voice and particularly a Mexican perspective to the Gender Summit movement. Within our theme, 'Science without borders: Improving impact by interlinking gender, geographic, disciplinary and educational dimensions', we addressed issues that affect everyone everywhere, but in many different ways. We must work together to find creative and innovative solutions to our common problems. The Gender Summits gather us to share knowledge and best practices with a gender perspective. 'Conocimiento que transforma' is our motto in CONACYT, and it means that knowledge is powerful tool for transformation. Through science, we can transform our reality and our environment in a way that benefits us all. We are living difficult times that demand more from us. An inclusive science must and can be the answer to many of the challenges that our generation is facing, and will be the only answer to the challenges that will face future generations building a sustainable world. We send you many regards from this part of the world and wish you the best!".

Dr Julia Tagüeña, Deputy Director General of Scientific Development, National Council of Science and Technology (CONACYT), Mexico.

Gender and Climate Change

- Women's Adaptation to Climate Change in Home Gardens in San Ignacio, Sonora, Mexico - **Stephanie Buechler**
- Inclusion of rural women in adaptation and mitigation strategies to climate change, in Mexico - **Beatriz Martinez-Corona**

The costs of women under-participation in STI: evidence from Latin America

- Entrepreneurship Gender Gaps in Chile **D. Cuberes and M. Teignier**

Women and outer space

- Highlighting Women in Space **Lourdes García-Hernández**

Sex and gender knowledge improving water management

- Women as heads of the house and water for household use: a case study in the municipality of Berriozabal, Chiapas **- Verónica Gutiérrez Villalpando, María del Rosario Ayala Carrillo, Benito Salvatierra Izaba, Emma Zapata Martelo y Austreberta Nazar Beutelspacher**

The Power of Research Networks

- Mexican Network on Science, Technology and Gender (MEXCITEG)- **N. Blazquez Graf, L. Fernández Rius and L. Meza-Montes**
- Thirty years after the beginning of the movement of gender and science in México: Advances and perspectives **- E. Martha Pérez Armendáriz, Lena Ruiz Azuara, María Valdés Ramírez, Margarita Rosado, Martha Takane, M. Antonieta Pérez Armendariz, Gabriela del Valle, Isaura Meza**

Sex and gender knowledge driving Sustainable Development

- Poverty and gender: environmental sustainability in conservation soil, south of Mexico City **- Irma Escamilla-Herrera, Flor M. López, Clemencia Santos Cerquera**
- Gender Perspective for Sustainable Development in Protected Natural Areas (PNA) **- MagdalenaLagunas-Vázques, Luis Felipe Beltrán-Morales and Alfredo Ortega-Rubio**
- Enablers and disablers of women to access board positions **- A. Moyano**
- Digital education as a support for economic inclusion of gender in Mexico: #ConTICgo **- S. Rodríguez, A. Becerril**

Starting a career in Exact Sciences: How to promote the participation of women?

- INCURSION OF WOMAN IN THE INDUSTRIAL CONTEXT **- M.B. Becerra, M.G. Cervantes, A. Hernández, A.A. Franco and P.G. Becerra**
- Increased participation of women in medical education **- A Hernández-Ramos**

Inclusion of rural women in adaptation and mitigation strategies to climate change, in Mexico

Beatriz Martinez-Corona1

1 Colegio de Postgraduados, Campus Puebla, México

Keywords: gender-environment, rural women, vulnerability, technological innovation, methodological strategy

Recent studies have estimated the extent of gender differences in the living conditions of vulnerable rural women in Mexico, who are at a disadvantage in relation to the effects of climate change [1]. This vulnerability is increased by institutional boundaries, failure in the diffusion and production of knowledge, lack of access to information, resources for technological innovation and programs for adaptation and mitigation of climate change. It is necessary to generate and disseminate strategic and methodological elements of successful experiences to promote access of rural women to resources and technological and social innovation, adaptation and mitigation of climate change, vulnerability reduction through empowerment of women's groups for local development. Results of an experience of technological and social innovation with women's groups are presented.

1. Relevance

Gender problems affect rural women living in Mexico, in addition to the effects of environmental degradation and climate change. This has been identified in investigations based on critical feminist political ecology positions examined from the perspective of gender and environment [2]. This perspective places the power relations between men and women as constraints on access, use, management and control of resources, identified as central variable in the ways that social groups access and control natural resources differentially. Ecological, economic and political aspects are considered in the analysis of materials and structural relationships of gender relations and the environment, which allows for the detailed study of differences and divisions in the activities, responsibilities and rights associated with the use and management of natural resources.

Women are more vulnerable to the effects of climate change and structural inequalities, such as exclusion in decision-making in the destination and use of resources [3]. The differential impact of gender in the effects of climate change and environmental degradation, locates rural women at a disadvantage. Differences associated with gender inequalities, normativity and generic constructs, limit rural women in developing adaptation strategies and mitigation of climate change. Generally, they assume responsibility for care, food, water supply, among others, in geographic areas with environmental constraints and affectations that leads them to invest more working hours to achieve the satisfaction of their basic needs.

Women should have the right to access technology innovation for production, including information and resources to alternative and modern technology for reproductive work. Generally, the acquisition, adaptation, or innovation of technology for reproductive work are not within the family priorities, since this work is not considered as such, it is a natural mandate, obligation or responsibility of women, who hardly question working double shifts, generic distribution and access to resources and technologies to develop it.

Access to technological and social innovation would allow women to increase food production, water supply, energy use and alternative energies, among other strategies that can contribute to adaptation and mitigation of climate change. To achieve it, they require greater access to decision-making and resources, aspects not sufficiently taken in consideration in government policies.

Presented are the experiences and results from a project involving women groups from marginalized communities in the state of Puebla, Mexico. A collection of social actors facilitated the implementation of the project's research and development objectives: the Rabo Bank Foundation, The Netherlands, SEMARNAT (Ministry of Environment in Mexico); and the "Colegio de Postgraduados, Campus Puebla", which managed and executed the project and the research team who proposed and executed the project.

2. Aims & Objectives

The aim is to show the relevance of the use of methodological strategy with gender and environment to promote access of rural women to decision-making, enable capacity building for technological and social innovation, and to develop and strengthen mitigation strategies and adaptation to climate change, in association with productive and reproductive activities.

Additional aim is to present the results from three local women's groups from communities that are affected by poverty and environmental degradation, located in the state of Puebla, Mexico.

3. Methods

The project included eight local groups of women, in seven rural communities located in the Sierra del Tenzo, in the state of Puebla, Mexico, which scores highly on indicators of high marginalization and restrictions in agricultural production, as well as male migration trends. This report is focused on the results of the process involving three groups of women, carried out during 2009-2011 in the communities of: San Jose Xacxamayo, municipality of Puebla; and San Antonio Juarez, municipality of Tzicatlacoyan, in the Puebla state, in México. The participants had an average age of 38 years, four years of schooling, married, with three children, and carrying productive and reproductive work in their homes. The work these women do, presents difficulties since it is done with technological and environmental constraints, with negative consequences on the number of working hours, and the women's health.

The project's methodological approach included analysis of socio-environmental context in the study region, participatory research and popular education with gender and environment perspective. The method of participatory self-diagnosis, which involved the local women's groups, identified the women's needs. The members of the group reported having a poor service, scarce water, and climate changes in the frequency of rain falls. To obtain water, they need to walk to water wells that are located at the bottom of a canyon, this means two to three hours of work, with risk to women and children who walk in steep and rugged terrain. Lack of access to water for domestic use was a priority problem defined by the participants.

The results of the diagnostic alternative technological and social innovation analysis show that training from the perspective of gender and environment provides information regarding appropriate technologies suitable to the area and to the needs of the women. An influential factor in relation to access to decision-making by women is their lack of access to credit options due to the poverty in which they live, and lack of control over family resources. Interest-free credit offered over the period of three years, with management and group responsibility, in the form of revolving funds can enable implementation of the technologies. Low income women involved in handicraft production and other activities were provided with alternative forms of savings. Weekly entered quotas, established by them, to save and cover the cost of materials was paid with those funds. This financial arrangement, which continued for a period of three years, enabled the participants to reinvest the resources recovered each year in the adoption of alternative technological innovation. In the third year, they completed the payment of the credit, and the funds were provided to another group.

Training from the gender perspective through workshops on topics such as women's rights, sexual and reproductive health, gender and environment, were vital to them, since they started from their own experiences and living conditions. They have heard about climate change as a phenomenon and perceived it as a problem that affects their activities, and affects cultural practices of adaptation, based on traditional knowledge of their ancestors.

Demonstrations about appropriate technology for capturing rainwater, innovation targeting productive and reproductive activities (agricultural production, craft, the use of alternative energy for food preparation) were used as teaching resources that facilitated the reflection and appropriation of the proposed technologies.

The participation of husbands in the construction of collection systems, was also relevant, due to the negotiating skills developed by them within their homes.

4. Results

In San José Xaxamayo, the group members, in addition to the adoption of systems of water collection and food production, opted in the second and third year to purchase home appliances (washing machines, refrigerators, stoves gas, among others). This facilitated and reduced their work and time invested in housework, which also contributed to the reduction and redistribution of work within their homes and reducing wood consumption.

In San Antonio Juarez, the first group opted for the construction of systems for capturing rainwater using cement, wire, rod and local materials. In the second year, they invested in innovative production practices, such as vegetable production, implementing fences, drip irrigation system, and compost making. Besides the use of solar stoves in food processing, in the third year they invested in adding value to traditional handicraft production, incorporating the use of color in their designs and in new products.

The activities involving the second group at San Antonio Juarez, coincided with the presence of the Strategic Project for Food Security (PESA) in the locality. The members of the group, said they were unable to be the beneficiaries due to the imposed financial contribution requirements (intended to tax the acquisition of materials). They requested credit so they could have access as beneficiaries. This experience shows the precariousness in which they live, and the lack of access to decision-making in their homes. This situation is reproduced in multiple programs in the country, where this aspect is not considered. They were assessed on the formation of a savings program for payment within a period of two

years, which they established. They were trained in organic food production, soil formation, and construction of water collecting systems, installation of dry latrines, which were adopted in some households, therefore, contributing to environmental health.

In the process, there were also mitigation strategies developed through traditional knowledge of men and women, such as building terraces to contain soil erosion, practices that seek to ensure agricultural production and retention of vegetation cover; the conservation management of plants, such as palm, which is used to produce local handicrafts. Medicinal plants collection practices were also identified. The recognition of knowledge, perceptions and practices of rural communities in relation to climate change, helped fill gaps in scientific information, help in the design of strategies for mitigation and adaptation that are more viable from the cultural point of view, and can establish intercultural dialogue.

The project methodology, process, and strategies were evaluated. Participatory evaluation workshops, field trip (See, Fig. 1), observation, interviews and questionnaires were developed, systematized, and the results analyzed. The conclusions emphasize the participation and perseverance of the 35 women [4], in the three groups who were analyzed as direct beneficiaries of the process, including effects on their homes, which were composed of five people on average.

This experience shows that technological innovation has facilitated access and management of water by the women; and the increased production and access to food, adding value in

handicrafts, and decreased workloads, among others benefits.
The increased vegetable production was achieved by using soil-forming systems, in the form of "bio-intensive beds", the use of drip irrigation, with water obtained in collecting systems. Decrease in ambient pressure through the reduction of firewood consumption was also observed, using technological innovations in energy production for food preparation, use of solar cookers, improved stoves and access to home appliances. The study of the sustainability of the collection systems in the groups, showed water availability in the participating households for at least eight months a year, and the use of tanks for storage of water with participatory work of men and women, in the dry season.

The social innovation was central to the process, increasing the critical reflection of the participants, identifying inequalities in their condition, and generic position on environmental aspects, conservation of natural resources, and adaptation to climate change. It resulted in improved access to resources and decision-making in their homes and in the community, interest in seeking information and knowledge, and capacity development. Increasing their visibility as women collectively engaged to exercise their rights to improve quality of life for themselves and for their families, and promote environmental conservation and food production. Their participation enabled them to make positive changes in gender relations within their households, manifested in the reduction and redistribution of productive and reproductive work, and to increase their bargaining power. Their actions have served as an example for improvements in the management and conservation of soil and water as adaptation and mitigation strategies to climate change in their localities.

5. Conclusions

The poverty, ecological and social vulnerability contexts that rural women face in Mexico requires the use of participatory methodologies with a gender perspective, and involving local development processes, to facilitate effective identification of the problems linked to the effects of climate change, to overcome situations of vulnerability and inequality. These approaches enable capacity building and empowerment by promoting ownership of the processes by women groups and directly involving them as

subjects of development interventions that tackle environmental issues.

The practical relevance of the methodological and strategic approach tested was demonstrated, as well as the advantage of the theoretical perspective based on gender and environment, rooted in feminist political ecology for the empowerment of women in the management of technological and social innovation. The project demonstrated the benefits of participatory identification of appropriate technologies and infrastructure for: the satisfaction of needs; capacity building and access to decision-making of women, support of productive and reproductive activities; access to credit access; management of savings; and use of revolving funds. The process contributed to strengthening adaptation strategies, mitigate the effects of climate change, and reduce the vulnerability of women.

It is recommended to direct greater resources to programs and projects with gender and environment perspective that promote equal inclusion of women and men in processes designed to facilitate measures for mitigation, adaptation and reduction of vulnerability to climate change. Inequality gaps can be removed by facilitating access to funds and credit; and by training and empowering rural women. This requires the inclusion of methodological and strategic guidelines, as well experience in operating rules and objectives of policies and programs.
Gender and environment should be taken into consideration in the definition and implementation of policies for adaptation and mitigation to climate change, to help strengthen adaptation strategies and mitigation of climate change and direct resources for knowledge generation and training of human resources to accompany these processes.

References

[1] Vázquez, V., Castañeda, I., Molina, D., Sosa, DM., Chablé, E., and Rivero, C. (2015). "Género y cambio climático. Estado del arte y agenda de investigación en México". In Reporte Mexicano de Cambio Climático. Grupo de Trabajo II: Impactos, Vulnerabilidad y Adaptación. UNAM-PINCC (México)

[2] D. Rocheleau, B. Thomas-Slayter and E. Wangari (eds). Feminist Political Ecology: Global Issues and Local Experiences. London and New York: Routledge, 1996. XVIII, 327 pp.

[3] Buechler, S., "Climate-water challenges and gendered adaptation strategies in Rayón, a riparian community in Sonora, México", eds. S. Buechler and A. M. Hanson, in A Political Ecology of Women, Water and Global Environmental Change, Routledge, (New York, 2015)

[4] Results of three groups of rural communities were included: San Antonio Juárez, municipality of Tzicatlacoyan, and San Jose Xacxamayo, municipality of Puebla (13, 10 y 12, respectively) located in Puebla state, México.