Family patio agroecosystem: role and empowerment of rural women in two communities

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ABSTRACT

Objective: To identify the role of women in the family patio agroecosystem and its relationship in the empowerment process, in two groups of women in the municipality of Medellín de Bravo, Veracruz, Mexico.

Design/methodology/approach: The research carried out is qualitative-quantitative, of a constructionist nature, and is based on the Research-Action-Participatory process, through adaptation of the management model for natural resource management in family farming.

Results: The psychometric results obtained in the Rosemberg Self-Esteem Scale indicate that the average response is 26.3, which indicates a normal self-esteem of women who work in the family patio agroecosystem, and positively impacts their human development, empowerment, and personal identity.

Limitations on study/implications: The work of rural women in the family patio agroecosystem is not recognized, so it is important that it be made visible, mainly to them, and that they be empowered in their being, through their actions.

Findings/conclusions: A total of 52 species were found, distributed among 15 fruit trees, 13 ornamental plants, 9 seasoning plants, 9 medicinal plants, 4 timber trees and only 2 vegetables. In the breeding of small species, 3 animal species are reported: 41 chickens, 2 pigs and 3 sheep.

Keywords: Family farming, visibility of work, rural women

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INTRODUCTION

In Mexico, the production units that are established in family agriculture are the plot, the family patio (backyard or orchard), and the school orchard. This type of agriculture is based essentially on family labor. The woman participates actively, mostly in the family patio, where she is the central axis, from the design, seed selection, sowing and farming tasks. Women decide the destination of production: auto-consumption, commercialization, or else exchange (barter). However, despite the importance of their work, it is not recognized,

even by them. This has made it impossible to visualize the psychosocial impact of this activity and process. Based on this, the role of women in the family patio agroecosystem was identified, as well as its relationship in the empowerment process in two groups of women in the municipality of Medellín de Bravo, Veracruz, Mexico.

MATERIALS AND METHODS

The study carried out was qualitative-quantitative, of constructionist nature (Schwandt, 2000), and based on the management model already mentioned (Álvarez *et al.*, 2011). Information gathering was made in two groups of women, one from the community of Rancho del Padre and the other in San Miguel, the two belonging to the municipality of Medellín de Bravo, Veracruz, Mexico. The field work was carried out from February to December, 2021. Field visits were conducted, and semi-structured interviews and psychometric tests about the participants' self-esteem were applied. In the events mentioned, work was done through knowledge exchange workshops, identifying the characteristics of each family patio, the tasks that are performed, the role that women play in the management, and its relationship with empowerment. Playful activities were carried out in the process, such as drawing their patio, identifying not only the components and the interactions between them, but also the role of women in the family patio's contribution to the diet, economy and recognition of women themselves as producers.

The phases in the management model adapted were motivation, diagnosis, community development and evaluation, in each phase of the process, to allow its feedback.

Phase 1. Motivation: visits were conducted to the family patios. The interested groups assume the commitment of participating and working in their patios, and that is the basis for the start of the model's application. **Phase 2. Diagnosis**: the stages that it includes are: delimitation of the study zones, according to the interest from groups and the conditions for community work, by performing documental diagnoses of the geophysical and socioeconomic conditions of the participating communities and of the municipality that they belong to (regionalization). Family patios were also identified, where each participant drew the composition of their family patio agroecosystem, on flipboard paper, and divided it into quadrants with the objective of understanding the importance of the location of the plants, and their name and use. Determination of the biodiversity of the plants cultivated and animals bred, and the destination of production, of family patios in the study groups. The methods used ranged from field visits and open interviews, to knowledge exchange workshops. **Phase 3. Community development**: a very important tool was the application of a semi-structured interview, with general data and questions about their perceptions and emotions when planting and harvesting, and about decision making in the family patio agroecosystem, and how this activity is related to their empowerment. One of the psychometric instruments most used to evaluate global self-esteem was Rosenberg's Self-Esteem Scale (EAR, Rosemberg, 1989), which is an instrument used to explore self-esteem and aspects such as personal auto-valuation and respect for herself. The level of self-esteem is important in relation to women's empowerment, in this case in relation to their work in the family patio agroecosystem.

RESULTS AND DISCUSSION

Motivation. It was the result from having visited the patios with the women, and it was the conformation of a group in the community of Rancho del Padre (six participants) and another in the community of San Miguel (three participants) in Medellín de Bravo, Veracruz.

Diagnosis. The delimitation of the study zones was in the municipality of Medellín de Bravo, Veracruz, which borders north with the municipalities of Veracruz, Boca del Río and Alvarado; east with the municipalities of Alvarado and Tlalixcoyan; south with the municipalities of Tlalixcoyan and Cotaxtla; west with the municipalities of Cotaxtla, Jamapa, Manlio Fabio Altamirano and Veracruz (INEGI, 2017). Different plant species are used mainly for auto-consumption, for food. The seasoning plants are cared for very carefully since they are useful to prepare foods and, in addition, for medicinal remedies; the fruit trees and for shade constitute a place for recreation and coexistence for families. The exchange (barter) of plants, seeds and fruits is common, and this practice contributes to the conservation of biodiversity and is an important element for self-recognition and wellbeing of women and their families. In the patios, 52 species were found: 15 fruit trees, nine medicinal, nine seasoning, two vegetables, 13 ornamental, and four woody. It was found that breeding of small animal species is carried out in four family patios. It is important to mention that 15 species present more than one use; 13 have two uses, and two have three uses. In the species with two uses, eight species stand out with medicinal use, six edible, six for seasoning, five ornamental, and one for timber/firewood. The species that presented three uses were basil (seasoning, medicinal and ornamental), and coconut palm (edible, woody and medicinal). These results show the knowledge there is in the use of their crops. The plants for seasoning are very well-cared for, since they are useful to prepare food and for medicinal use (Table 1).

The fruit trees and for shade constitute a place for recreation and coexistence. For the families, the exchange (barter) of plants, seeds and fruits is common. This practice contributes to the conservation of biodiversity and is an important element for self-recognition and welfare of women and their families. These results evidence the importance of the multi-functionality of the family patio, whose main contribution is the family's welfare. In the family patio agroecosystem, not only plant species were found, but also animal species, such as hens, sheep and pigs, which are the species that constitute animal breeding in the family patios of study.

Only four production units had animal breeding. The total number of animals was 46 (three sheep, two pigs, 41 hens). In general, they are located behind the house. The destination of this production is auto-consumption.

Community development. This phase was conducted through knowledge exchange workshops, and in them, the women recognized the importance of their work in the patios, making visible their duty and with it their being. Identifying the roles they carry out contributes to their empowerment and increases their self-esteem. To identify the importance of the location and management of crops in the family patios, the participants carried out a drawing of their patio where they showed the elements of the family patio agroecosystem that they manage. A piece of paper divided into six quadrants was used.

Table 1. Species with more than one use.

Scientific name	Part of the plant used	Used	Used forms	Used Numbers
Agave	Leaves Complete plant	Seasoning Ornamental	Food Ornament	2
Bougainvillea sp.	Flower	Medicinal Ornamental	Infusion to relieve cough Ornament	2
Carica papaya	Fruit Fruit and green leaves	Edible Tenderize	Fresh & onserved Tenderenze meat	2
Citrus limon	Fruit Leaves	Edible Medicinal	Beverage and food Infusion for relax	2
Cocos nucifers	Fruit Meat Water Leaves Trunk	Edible Medicinal Construction Constrution	Food Beverage House roof Structure of a house	3
Diospyros nigra	Fruit	Edible	Fresh and dessert	1
Dysphania ambrosioides sp.	Leaves	Seasoning Medicinal	Food Infusion for deworm	2
Mentha spicata	Leves	Seasoning Medicinal	Food Infusion for digestion	2
Musa paradisiaca sp.	Truit Leaves	Edible Seasoning	Food Cooking tamales	2
Persea americana	Fruit Leave Seed	Edible Cosmetic Medicinal Cosmetic	Dip Hear conditioner Infusion, anti-inflamatori and pain control Darken eyebrows and hair	4
Pinus	Tunk	Woddy Construction	Firewood for cooking Structure of a house	2
Salvia rosmarinus	Leave	Seasoning Medicinal	Food Astringent in infusion	2
Sansevieria trifascia	Leaves	Medicinal Ornamental	Infusion, anti-inflamatori	2
Tagetes lucida	Flowers and leaves	Medicinal Ornamental	Infusion for relax Ornament	2

The participants drew the distribution of their crops and animal breeding, organizing the activities into a hierarchy according to the quadrant in which they drew them, as well as their importance and destination (Figure 1).

In the drawings, they described and counted the elements found. In the the participants' drawings analyzed, it was identified that ornamental plants are generally in front of the house or in the entryway, and they have a relationship with the beauty and emotional wellbeing they provide.

Animal breeding was placed behind the house, the fruit trees are located around the house without a specific location, the shade allows the house to be cooler and in the open spaces it provides places for recreation and relaxation, in addition to giving access to fresh fruit during the whole year.

Figure 1. Drawings of the family patio agroecosystem made by the participants.

The design of their patios has aspects that range from emotional wellbeing to satisfaction over having the availability of fresh foods, and the comfort of having their seasoning and medicinal plants accessible. The family patio agroecosystem generates positive emotions such as joy, satisfaction, effort and pleasure which impact their self-esteem directly and positively, by making their own decisions and deciding when and where to plant, which gives them assurance and self-confidence, valuing their being and their doing.

The rural women interviewed mention that this production unit helps the family economy by having fruits, and edible and medicinal herbs. They share that the fruits are healthier and more nutritious, which supports their diet. The care for the family patio agroecosystem has been a family and cultural inheritance that has been transmitted from generation to generation.

The Rosemberg Self-Esteem Scale (EAR, Rosemberg, 1989) is an instrument to explore self-esteem and aspects such as personal self-valuation and respect for oneself. The level of self-esteem is important in relation to women's empowerment, and in this case it is related to her work in the family patio agroecosystem. This scale includes 10 items in the content, half are stated positively and the other half negatively (Figure 2).

The average resulting score was 26.3, which indicates that the mean of self-esteem of rural women from the communities intervened is normal according to the indicators described before. Only one subject showed a higher self-esteem. The global results suggest that the work in the family patio agroecosystem impacts positively in the human development of the women, and particularly in their self-esteem (what a person feels for him/herself) with close relation with self-knowledge.

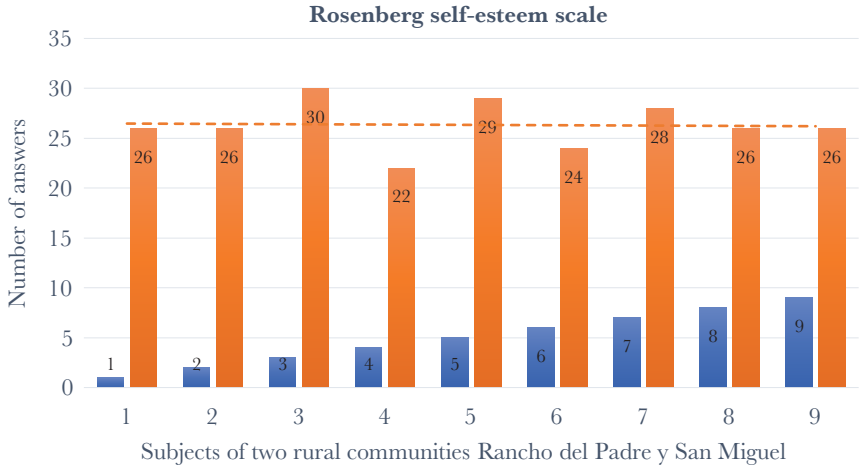

Figure 2. Graph of self-esteem results.

Authors such as Alcántara (2001) defines self-esteem as attitude, and it is the habitual way of thinking, loving, feeling and behaving with themselves, which is a very important factor in the identity of rural women in Medellín de Bravo. Self-esteem impacts their self-concept, which resides in the formation of their personality, since it has to do with social competence and influences how the person feels, thinks, learns and values him/herself, how they relate with others and, definitely, how they behave (Clemes and Bean, 1996; Clark, Clemes and Bean, 2000). When making decisions in the family patio agroecosystem, a positive impact is generated and this contributes to creating more and better opportunities for rural women of our country.

CONCLUSIONS

In Mexico, in the family patio agroecosystems, rural women are perceived to be in a space where they make their own decisions. The work by women in the family patio agroecosystem has served as a strategy to contribute to the diet thanks to the direct access to plants, fruits and breeding of small animal species. The women from the communities of Rancho del Padre and San Miguel are of the opinion that fruits from their patios are healthier, more nutritious, and that their ornamental plants provide them joy, satisfaction and pleasure. They have access to plants for cooking, medicinal plants, and impact their self-esteem directly and positively, contributing to create more and better opportunities for rural women. This study goes beyond a simple exploration, since the exchange of ideas makes it a place of learning.

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