Agroecological systems promoted by the Vicente Guerrero Group (GVG): Key factors for their permanence

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ABSTRACT

Objective: To determine the factors that ensure the permanence of agroecological activities and/or systems promoted among three family groups affiliated with the Vicente Guerrero Group (GVG).

Design/methodology/approach: The research employed a mixed-methods approach, integrating qualitative techniques such as participant observation, interviews, and workshops with quantitative methods through a structured questionnaire. The survey was administered to 34 families from three different groups.

Results: Key factors identified for the continuity of agroecological systems included regular field visits, the presence of a motivated local representative, the establishment of a demonstrative model plot, ongoing training, and the feasibility and adaptability of introduced innovations. To maintain their agroecological orientation, families implemented eight core practices: soil and water conservation, input reduction, polyculture systems, agroecological pest and disease management, efficient input use, crop rotation, field redesign, and on-site input production. Families expressed a strong interest in ongoing training related to agroecological innovations.

Limitations on study/implications: The analysis focused solely on three of the 18 family groups connected to the GVG across Tlaxcala and Puebla, which may limit the generalizability of the findings.

Findings/conclusions: The sustained success of agroecological initiatives requires dedicated efforts across all actors within the agroecosystem. The long-term adoption of promoted practices and systems hinges on shared commitments between the supporting organization (GVG) and the participating family groups.

Keywords: agroecological profiles, agroecological transition, agroecological practices.

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INTRODUCTION

Current challenges facing global agri-food systems, along with prevailing trends in land, water, and biodiversity use, call for the implementation of new food production models that promote food security while preserving natural resources (Sarandón, 2020; Spiegel *et al.*, 2021). These models also aim to contribute to the paradigm of food sovereignty. Agroecological systems are rooted in co-participatory processes that recognize ecological dynamics, peasant knowledge, collective labor, disciplinary insights, and practical applications (Wezel *et al.*, 2009; Sarandón, 2020). Within this framework, farmers are co-promoters of the shift toward agroecological techniques (Osorio, 2015), a process further strengthened by social movements and other actors contributing to agroecological transitions. The Vicente Guerrero Group (GVG) has been a national and international benchmark for over four decades, advancing participatory agroecological strategies for the use and conservation of common goods, fostering connections between producers and consumers, and promoting local self-determination and productive self-sufficiency (Roncancio, 2017). GVG acknowledges that agroecological transitions

require social integration and creativity. Thus, it promotes the development of skills and capacities through facilitators or community promoters, referred to by Baquero (2013) as "outstanding community agents". These individuals serve as essential catalysts for social dynamism and are vital to agroecological transitions (Guzmán *et al.*, 2016; Méndez *et al.*, 2016). This study seeks to identify the key factors that ensure the continuity of agroecological activities and systems promoted among three family groups affiliated with the GVG. It also aims to identify and analyze specific practices in order to evaluate their operational significance and reinforce the territorial scaling of agroecology.

MATERIALS AND METHODS

The research was conducted in three localities in the state of Tlaxcala: Vicente Guerrero, in the municipality of Españita (19° 25′41"′N and 98° 02′23"′W), San Felipe Cuauhtenco in Contla de Juan Cuamatzi (19° 18′48"′N and 98° 07′19"′W), and San Francisco Tetlanohcan, in the municipality of the same name (19° 15′36"′N and 98° 09′50"′W) (Figure 1).

The study employed a mixed-methods approach, integrating both qualitative and quantitative methods. Qualitative tools included four participatory workshops, observation, at least five group meetings, attendance at three fairs (Vicente Guerrero, Cuauhtenco, and Ixtenco), several field visits, and a structured interview with each leader of the GVG. The quantitative aspect involved the application of a questionnaire to 34 families from the three studied groups: 5 from San Francisco Tetlanohcan, 12 from San Felipe Cuauhtenco, and 17 from Vicente Guerrero, who have received support for 2, 10, and 40 years, respectively. The questionnaire covered five areas: 1. Socioeconomic characteristics, 2. Agroecological transition, 3. Practices and motivations supporting the permanence of existing systems, 4. Monitoring and training needs. Both qualitative and quantitative data were analyzed, recorded, and graphed using Microsoft Word and Excel, as well as JASP (version 0.18.1.0, 2023). The results are presented in bar and radar charts.

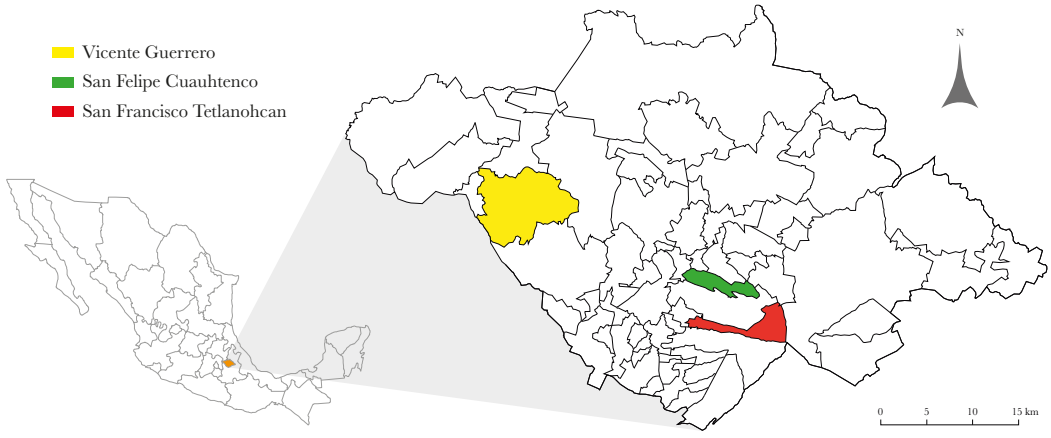

Figure 1. Geographic location of the localities, State of Tlaxcala.

RESULTS AND DISCUSSION

Methods for monitoring GVG families

The agroecological transitions promoted by the Vicente Guerrero Group (GVG) are rooted in local needs, identified through participatory methods that not only address current realities but also shape the strategies for follow-up. These efforts aim to build collective self-determination through a peasantry in agroecological transition (Morejón, 2023). The implementation and continuity of agroecological activities in communities take various forms, with participatory strategies such as exchanges, workshops, diagnostics, and field visits emerging as the most effective. These approaches, also emphasized by Merçon (2015), prioritize the most pressing local issues, fostering broader influence within other families in the territory. However, challenges such as the use of unfamiliar or poorly adapted species, and varying levels of commitment and interest, can hinder or even interrupt the continuity of these practices.

The GVG has developed follow-up strategies aimed at ensuring the permanence of each promoted agroecological activity, practice, or system. This includes encouraging ongoing participation of local leaders who act as liaisons between the community and the organization. These processes foster knowledge exchange and skill development among farming families, empowering them to serve as ambassadors of agroecological practices. Together with the GVG, they work to build local self-management and establish synergies between communities and institutions that share this vision (Roncancio, 2017; Zebadúa *et al*., 2024). Notably, 83% of the families reported receiving some form of support such as training, inputs, employment, income, or invitations to events an average of 15 times per year, which reinforces their agroecological engagement.

For over four decades, the GVG has been recognized as a national and international reference in agroecological promotion, the result of ongoing efforts by the organization, its partners, and member families who bear testimony to their strong socio-environmental commitment. The GVG stands as a beacon of the agroecological movement, championing traditional agricultural systems such as the milpa, local seed varieties, and agroecological innovations across Mexico and Latin America (Zebadúa *et al*., 2024).

Eight commonly adopted practices were identified as key strategies for maintaining agroecological profiles (Figure 2). Soil and water conservation, reduced use of agrochemicals, and agroecological pest and disease management were highlighted by families as essential to sustaining these systems. These practices form part of broader campesino strategies aimed at addressing the socio-environmental problems generated by conventional agricultural models (Sánchez, 2014; Sarmiento *et al*., 2017; Zebadúa *et al*., 2024).

Families particularly emphasize the role of agroecological practices in the recovery and/or preservation of their natural resources. Españita, one of the partner communities, is recognized as a pioneer in adapting rainwater harvesting techniques, diversification, and the production of *Tlaxcashi* and other organic inputs findings aligned with those of Hernández (2015). This community exemplifies how local adaptation of agroecological innovations, rooted in campesino experiences, integrates agriculture as a central element of communal life, providing not only food but also delivering vital agro-ecosystem services. Spatial-temporal diversification thus emerges as a local strategy for maintaining

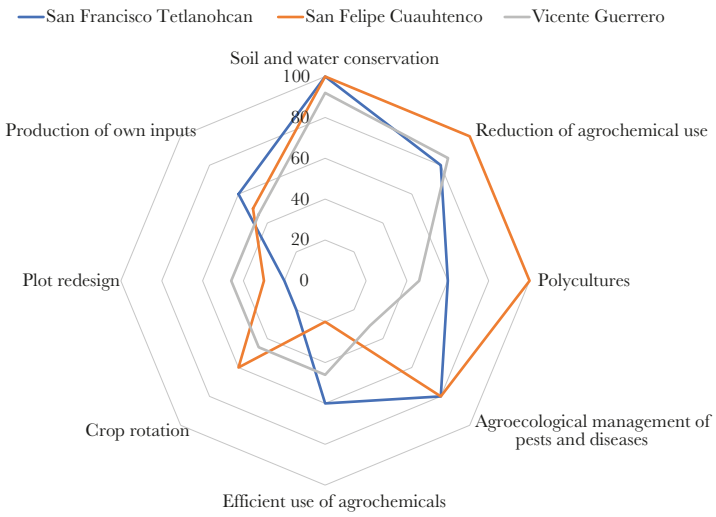

Figure 2. Basic practices to maintain agroecological profiles.

agroecological profiles both locally and territorially (Sarandón, 2020), prioritizing the healthiest production methods possible. Across the three communities, families consistently acknowledge the significance of cultivating polycultures practices typically implemented incrementally or at small scales. Polyculture is regarded as essential for preserving and conserving local agrobiodiversity. Mixing different crops contributes to agroecosystem sustainability, fertility, and resilience (Hernández, 2015). In Tetlanohcan (40%), Cuauhtenco (70%), and Vicente Guerrero (54%), polycultures are deemed indispensable as they serve as key sources of nutrition for the family diet and promote the use and conservation of native sedes a practice strongly supported by the GVG through initiatives such as community seed funds and local fairs (Medina, 2016; Sarmiento *et al.*, 2017).

In Tetlanohcan and Cuauhtenco, several families (40%) consider knowledge-sharing dialogues as essential tools for acquiring skills in preparing soil amendments and managing crops, pests, and diseases. Thirty-two of the thirty-four surveyed families expressed their interest in gaining these skills through GVG exchange activities, while eighteen believed this knowledge could be acquired through peer-to-peer training visits. The GVG implements the Campesino a Campesino (CaC) methodology, recognized as one of the most effective strategies for disseminating, adopting, and adapting agroecological innovations among farmers. The approach is based on three core components: exchanges, visits, and experimentation, all tailored to the diverse learning styles of participating families. The majority of families (85%) reported that their primary learning occurred through hands-on experimentation testing, observing, and evaluating new techniques directly in their plots (Tuchin, 2023). Visual assessment is the dominant form of evaluation in these processes. Meanwhile, for 32% of families, the most meaningful learning occurred through exchanges that shared real-life experiences within similar contexts. Another 41% highlighted exchange visits as highly effective learning opportunities traditional methods for transmitting knowledge among campesinos. (Ocampo-Álvarez, 2016; Tuchin, 2023).

Monitoring and continuity process between GVG and linked families

The Vicente Guerrero Group (GVG) implements a range of follow-up strategies to support activities promoted among partner families. Over the past three years, the majority of families (71%) have received some form of training through workshops, talks, or courses. A smaller percentage (9%) reported having been invited throughout the year to participate in fairs held in other communities or in cultural events such as "Maize Day" and "Native Seeds Day." These initiatives serve to strengthen both the communal work and the communication among partner communities.

The perceived benefits of implemented practices significantly influence families' decisions to remain involved with the GVG. Approximately 65% indicated their willingness to continue their engagement through training or participation in various projects, while 18% expressed interest in maintaining involvement through exchange visits. The continued use of agroecological practices is largely an individual decisión 97% reported this as a personal choice which highlights the need for strong intrinsic motivations to undertake agroecological transitions (Guzmán *et al*., 2016; Spiegel *et al*., 2021).

A noteworthy finding is that most of the surveyed families (88%) expressed a strong will to keep implementing agroecological practices, as they are convinced of the advantages of producing food through such methods. About 82% noted that their involvement was based on deliberate decision-making, while 79% attributed it to the pursuit of common well-being. Overall, families believe that adopting agroecology allows them to reduce harm to otherssomething that can occur when conventional or even certified organic producers use external inputs for crops that are often excluded from their own household diets. Interestingly, 18% of the participants viewed agroecological methods as an integral part of their lives, interpreting them as a local or campesino way of life. This aligns with what Ortega-Espès (2018) refers to as a foundational principle of peasant-environment harmony.

The implementation of agroecological strategies is based primarily on the voluntary choices of families, shaped by their specific needs. As these practices are adopted, new needs emerge, necessitating additional management strategies. Figure 3 presents the training needs identified by the surveyed families, reflecting their interests, length of engagement with the GVG, availability of resources, and evolving priorities.

Topics such as recipe development (food, cosmetics and/or medicines), resource management and conservation, and production of inputs are common needs in all three cases.

It is worth noting that in communities such as Vicente Guerrero and Acxotla del Monte, among others, the Vicente Guerrero Group (GVG) actively fosters the dialogue of knowledge among local groups striving to enhance, empower, and give visibility to peasant women. These initiatives include the preservation of traditional dishes, medicinal formulas, and cosmetic practices. As part of this effort, the "Mujeres de Vicente Guerrero" group GVG partners meet weekly to transform backyard-grown aromatic herbs into various products such as cosmetics (soaps), medicinal remedies (syrups, tinctures), and other items showcased during exchange events. These women play a pivotal role in community transition processes under various identities: as producers, vendors, chefs, backyard caretakers,

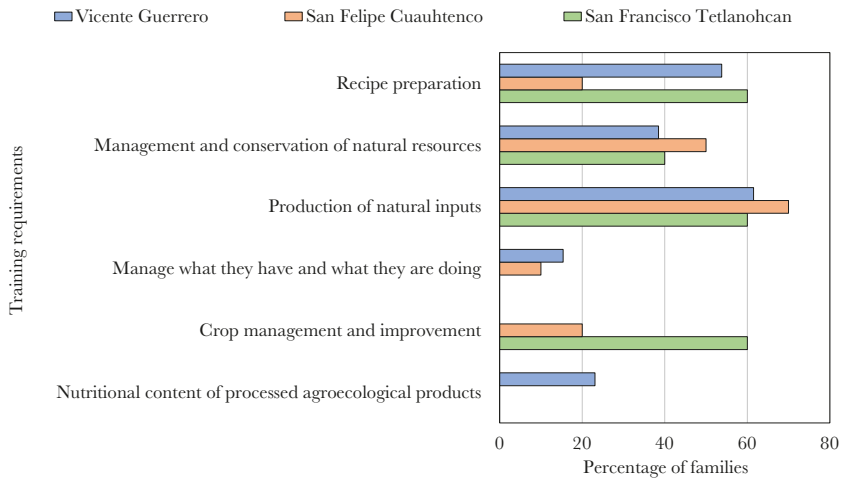

Figure 3. Training needs of families in the three groups.

artisans, preservers, and seed donors. Their contributions underscore the significance of gendered agroecological innovation. The conservation and sustainable management of local resources remains a key concern for families. The longstanding presence of the GVG, coupled with an inherited awareness among rural families of the importance of preserving natural resources, are foundational reasons why a large portion of families expressed strong interest in participating in training sessions aimed at maintaining agroecological practices. Driven by the need to reduce reliance on external inputs, the GVG has promoted the reuse of organic waste to develop natural inputs for pest, disease, and crop nutrition management (Ávila, 2019). These strategies are not only fundamental to agroecological transition processes (Guzmán *et al.*, 2016) but also essential to the organization's original efforts to increase plot productivity (Sánchez, 2014). In Vicente Guerrero, there is also growing interest in analyzing the nutritional content of locally processed products to inform consumers of their quality and health benefits. Lastly, the families involved in the study acknowledged several achievements and contributions of the GVG, including: a) the production of bio-inputs (60%), b) soil and water conservation efforts (82%), and c) eco-technologies (71%) such as ferro-cement tanks for rainwater harvesting, fuel-efficient stoves (lorena), vermicomposting systems, seed preservation structures (cuescomates), and simple micro-tunnels for vegetable production. These techniques and structures are now visibly integrated into the agroecosystems of Tlaxcalan communities. Moreover, 33% of families expressed a sense of representation through the native seed protection and rescue law, an important recognition also highlighted by Baquero (2013). The GVG's more than four decades of agroecological history exemplify a model worthy of replication, recognition, preservation, and enhancement as part of broader territorial agroecological transitions.

CONCLUSIONS

The GVG's promotion of agroecological transitions through collective strategies fosters the adoption and adaptation of innovations tailored to local needs. The continuity of implemented agroecological practices hinges on ongoing communication via field

visits, community interest, and the feasibility and adaptability of each transferred technique. Therefore, the strategy of continuous training and knowledge exchange equips families with tools, skills, and insights essential for the effective management of their agroecosystems.

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