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## AGROECOLOGY:

A ROUTE TOWARDS HEALTHY NUTRITION THROUGH STRENGTHENING THE SOCIAL ECONOMY

### **AGROECOLOGÍA: UNA RUTA HACIA LA NUTRICIÓN SANA A TRAVÉS DEL FORTALECIMIENTO DE LA ECONOMÍA SOCIAL**

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#### ABSTRACT

Agroecology is presented as a comprehensive solution that addresses the challenges of nutrition and social economy by combining traditional knowledge and modern scientific practices. This approach promotes sustainable agricultural systems that benefit both the environment and local communities, emphasizing biodiversity, soil fertility and integrated pest management, thus reducing dependence on chemical inputs and promoting ecosystem resilience. The research focuses on how agroecology can improve nutrition by strengthening the social economy. In terms of nutrition, it promotes the production of fresh and diverse foods, improving food security and diet quality, and combating malnutrition and diet-related diseases. Economically, it strengthens local economies by supporting small farmers and fostering local markets, which promotes social and economic justice. Agroecological farmers earn more stable income by selling directly to conscious consumers, eliminating middlemen. Furthermore, agroecology contributes to food sovereignty, allowing communities to define their food systems according to their needs and values, creating a more just and sustainable economy.

**Keywords:** Agroecology, Nutrition, Local economy, Food security.

#### RESUMEN

La agroecología se presenta como una solución integral que aborda los desafíos de la nutrición y la economía social combinando conocimientos tradicionales y prácticas científicas modernas. Este enfoque promueve sistemas agrícolas sostenibles que benefician tanto al medio ambiente como a las comunidades locales, haciendo hincapié en la biodiversidad, la fertilidad del suelo y el manejo integrado de plagas, reduciendo así la dependencia de insumos químicos y promoviendo la resiliencia de los ecosistemas. La investigación se centra en cómo la agroecología puede mejorar la nutrición fortaleciendo la economía social. En términos de nutrición, promueve la producción de alimentos

frescos y diversos, mejorando la seguridad alimentaria y la calidad de la dieta, y combatiendo la desnutrición y las enfermedades relacionadas con la alimentación. Económicamente, fortalece las economías locales apoyando a los pequeños agricultores y fomentando los mercados locales, lo que promueve la justicia social y económica. Los agricultores agroecológicos obtienen ingresos más estables vendiendo directamente a consumidores conscientes, eliminando intermediarios. Además, la agroecología contribuye a la soberanía alimentaria, permitiendo a las comunidades definir sus sistemas alimentarios de acuerdo con sus necesidades y valores, creando una economía más justa y sostenible.

**Palabras clave:** Agroecología, Nutrición, Economía local, Seguridad alimentaria.

## INTRODUCCIÓN

La agroecología se presenta como una solución integral que aborda los desafíos de la nutrición y la economía social al combinar conocimientos tradicionales y prácticas científicas modernas. Este enfoque promueve sistemas agrícolas sostenibles que benefician tanto al medio ambiente como a las comunidades locales, enfatizando la biodiversidad, la fertilidad del suelo y el manejo integrado de plagas, reduciendo así la dependencia de insumos químicos y favoreciendo la resiliencia del ecosistema. La investigación se centra en cómo la agroecología puede mejorar la nutrición fortaleciendo la economía social. En términos de nutrición, promueve la producción de alimentos frescos y diversos, mejorando la seguridad alimentaria y la calidad de la dieta, y combatiendo la desnutrición y enfermedades relacionadas con la alimentación. Económicamente, fortalece las economías locales apoyando a los pequeños agricultores y fomentando mercados locales, lo que promueve la justicia social y económica. Los agricultores agroecológicos obtienen ingresos más estables al vender directamente a consumidores conscientes, eliminando intermediarios. Además, la agroecología contribuye a la soberanía alimentaria, permitiendo a las comunidades definir sus sistemas alimentarios según sus necesidades y valores, creando una economía más justa y sostenible.

## DEVELOPMENT

In recent decades, growing concerns about nutritional health and environmental sustainability have driven the search for alternatives to conventional agricultural systems. Agroecology has emerged as a viable solution, not only to address these challenges, but also to promote a

more equitable social economy. This practice integrates ecological principles in the design and management of agricultural systems, focusing on biological diversity, resilience and sustainability.

Agroecology is not limited to food production; It also encompasses social and economic aspects, fostering more robust and self-sufficient communities. Through practices such as crop rotation, the use of organic fertilizers and the reduction of agrochemicals, agroecology seeks to improve the quality of the soil and the natural environment, resulting in more nutritious and healthy food products. Furthermore, by promoting local economies and fair markets, agroecology supports small farmers and contributes to the equitable distribution of economic benefits. This approach aligns with the principles of the social economy, which prioritizes community well-being over individual profits, encouraging cooperation and equity.

According to Altieri & Nicholls (2020), they describe how global events, such as the Covid-19 pandemic, have revealed the socioeconomic and environmental effects caused by global dependence on external inputs for food, thus highlighting the importance and urgent need for adopt ecological, resilient and inclusive agri-food models.

According to Zamora (2020), it is necessary to recognize that the ecological dimension, in addition to being crucial for the distinctiveness of products, is fundamental to determine their environmental sustainability. The agroecosystem is the area where actions can be implemented that help mitigate the impacts of the globalized agri-food model on climate change, and agroecology is the main strategy to achieve this.

In this context, the research titled "Agroecology: a route to healthy nutrition through strengthening the social economy" has as its General Objective: to explore how the adoption of agroecological practices can improve nutritional health and strengthen the social economy. Through a comprehensive analysis of the nutritional and economic benefits of agroecology, this research aims to offer a roadmap to a more sustainable and just future for farming communities and society at large.

### Specific objectives:

- Identify nutritional benefits: Analyze how agroecological methods can produce healthier and more nutritious foods compared to conventional agricultural systems.
- Evaluate the economic impact: Analyze how the adoption of agroecological practices can economically benefit

rural communities, promoting a fairer and more sustainable economy.

- Promote sustainability: Investigate how agroecology can contribute to environmental sustainability through agricultural practices that respect and maintain biodiversity and local ecosystems.
- Strengthen the social economy: Explore how agroecology can be integrated into social economy models, where profits and benefits are distributed equitably between producers and communities.

This dissertation will examine the theoretical foundations concerning agroecology and social economy, as well as the capacity of this discipline to offer solutions to social problems from a psychological perspective. Finally, conclusions will be provided and strategies will be outlined to promote the adoption of agroecology as an essential pillar in the search for healthy nutrition and an inclusive social economy.

### **Theoretical Foundations of Agroecology and Social Economy**

In this section, the fundamental principles and concepts of agroecology and social economy will be explored. The theoretical bases that support the integration of agroecological practices with economic models that prioritize community well-being and social equity will be analyzed. Likewise, the interrelationship between these two fields and their potential to generate sustainable and fair food systems will be examined.

This vision integrates ecological and social concepts and principles, with the purpose of managing horizontal agri-food models through territorial processes that optimize biological interactions (plants and animals) with social interactions (humans) and their environmental environment (ecosystem). Its scope is characterized (Soler & Sevilla, 2010); (Silva-Laya et al., 2019) in three dimensions: ecological and technical-productive, which amalgamates social characteristics (cultural identity, historical diversity, specificities of time and space) and environmental (use of renewable energy and conservation and regeneration of common ecological goods); sociocultural and economic, focuses on aspects related to the quality of life of indigenous sociocultural systems, on social cooperation strategies for the development and implementation of production and consumption alternatives that rescue and revalue worldviews; and politics, involves social movements and explains the resistance of traditional, self-sufficient and localized agroecosystems, with the objective of proposing

and promoting participatory and democratic strategies that contribute to leveling historical and gender inequalities in rural agriculture.

Strengthening the agroecological approach is justified by the numerous benefits of diversification. The diversity of products generated with this approach results in an increase in income and, consequently, in an improvement in the quality of life of farmers and their families. Additionally, it reduces production costs by replacing external inputs with ecological processes (Anderson et al., 2019).

The author argues that agroecology is an approach that integrates ecological principles in the design and management of agricultural systems. It seeks environmental sustainability, biological diversity and resilience in the face of climate and economic changes. Agroecology not only focuses on agricultural production, but also on social and economic aspects, promoting practices that improve the quality of life of rural communities.

Collective action and institutionalization are essential for the functioning of both approaches. In this sense, Ruggieri et al. (2022) studied institutionalized governance systems that promote collective action dynamics and develop agroecological strategies, highlighting the difficulties of the transition depending on the size of the collective. Rodríguez-Borray et al. (2022) systematized the institutional experience of a SIAL to identify success factors and elements that can be replicated in other territories, concluding that agroecological models focused on the transformation of raw materials are the most effective. This supports the argument that processed foods have higher valuation and better remuneration in certain markets.

From the agroecological perspective, it is stated that the Social Economy is the set of economic practices that prioritize social well-being over individual profit. They include cooperatives, associations, mutual societies and social enterprises that operate under principles of solidarity, equity and democracy.

Both approaches share principles of equity, sustainability and solidarity. Agroecology seeks agricultural systems that are both ecologically and socially sustainable, while social economy promotes economic models that benefit the entire community, not just individuals.

The social economy, in turn, promotes the reinvestment of profits in the community and in the improvement of the working and social conditions of its members. Collective action and participatory governance are essential for the functioning of social economy organizations, such as

cooperatives and associations, that seek to implement fair and sustainable economic practices. It also seeks to add value to local products and promote solidarity markets, where processed and quality products can obtain a better price and recognition.

As a summary,

Agroecology and social economy are interrelated through their shared principles of sustainability, equity and solidarity. Both approaches seek to strengthen rural communities through diversification, cost reduction, and valorization of local products. By integrating ecological and social principles, agroecology and social economy can create more resilient and just systems that benefit all members of the community, promoting a transformation towards sustainable and equitable rural development.

### **Impact of Agroecology on Nutrition and Environmental Sustainability**

This section will address how the implementation of agroecological practices contributes to the improvement of the nutritional quality of food and the preservation of the environment. Case studies and empirical data will be presented that demonstrate the benefits of agroecology in terms of biodiversity, soil health, agrochemical reduction, and nutritious food production. Additionally, the role of agroecology in climate change mitigation will be discussed.

Agroecology is focused as a sustainability alternative, since it allows us to contribute to a green economy in symbiosis with the human species and the environment, where the five essential aspects are considered to achieve sustainable rural development taking into account the social, environmental, political, economic and technological. Nevertheless; The Venezuelan peasant has taken initiative in favor of the agroecological model as a way to produce healthy, quality food in the agricultural sector in accordance with the ecosystem, thinking about the present and future generations of the world, despite the transplant of technology imposed by the column backbone of capitalism called globalization (Zaibak, 2012).

In accordance with Espelt (2024), the food industry also has a formidable capacity to infiltrate and dominate emerging sectors and trends. The consumption of ecological, biological, sustainable and organic products has positioned itself at the forefront of contemporary preferences. According to the European Commission, the designations ecological, biological and organic, although with certain variations. They refer to those products that have not been subjected to any type of pesticide or chemical substance,

grown in harmony with natural cycles, without genetic intervention and that offer benefits to both the environment and local agricultural and livestock communities.

### **Nutrition Improvement**

**Crop Diversity:** Agroecology promotes crop diversification, which results in greater availability of varied and nutritious foods. Unlike industrial agriculture, which usually focuses on monocultures, agroecology favors a diet rich in fruits, vegetables, legumes and grains, thus improving the intake of essential vitamins and minerals.

**Food Quality:** Foods produced under agroecological practices are generally fresher and have greater nutritional density. The absence of pesticides and chemicals not only reduces the risk of toxic contaminants, but can also increase the number of antioxidants and other beneficial nutrients in foods.

### **Environmental sustainability**

**Biodiversity Conservation:** Agroecology protects biodiversity through agricultural practices that promote the diversity of plant species and varieties. This not only improves the resilience of agricultural ecosystems against pests and diseases, but also contributes to the conservation of local and global biodiversity.

**Improving Soil Health:** Practices such as crop rotation, the use of organic fertilizers and the non-use of agrochemicals contribute to improving soil health. Healthier soils are more fertile and can store more carbon, which helps mitigate climate change.

**Efficient Use of Resources:** Agroecology emphasizes the efficient and responsible use of natural resources, such as water and energy. By promoting techniques such as drip irrigation, composting and the use of renewable energy, we reduce environmental impact and conserve the natural resource base for future generations.

**Carbon Footprint Reduction:** By encouraging local food production and consumption, agroecology reduces the need for long-distance transportation, thus reducing the carbon footprint associated with food distribution. In addition, agroecological practices such as agroforestry and integrated pest management contribute to carbon capture and the reduction of greenhouse gas emissions.

**Social and Economic Impact: Strengthening Local Economies:** Agroecology supports small farmers and strengthens local economies. By fostering direct

relationships between producers and consumers, fairer and more equitable trade is ensured, which benefits both the agricultural community and consumers.

**Food Sovereignty:** Agroecology is a fundamental pillar of food sovereignty, allowing communities to have greater control over their food systems and reduce dependence on multinational corporations. This empowers farmers and allows them to make decisions that promote sustainability and social equity.

### **Strategies to strengthen the Social Economy through Agroecology**

This section will detail the strategies and policies necessary to integrate agroecology into the social economy. Models of success in various regions will be explored and how agroecology can promote robust and resilient local economies will be analyzed. The barriers and challenges to the adoption of agroecology will also be discussed and solutions will be proposed to overcome them, with the aim of fostering an inclusive social economy that benefits all actors involved.

According to the following authors: Monzón & Chaves (2012); Bretos & Morandeira (2016); Solorzano et al. (2018); (Chaves & Monzón, 2018);(Chaves & Savall, 2019).

The Social Economy (SE) is defined as a set of organizations, established with social objectives, that operate both in the market and outside it. These entities are characterized by being based on principles and values such as the empowerment of people over financial aspects, democratic and participatory governance, solidarity, sustainability and commitment to the environment. Membership in these organizations is voluntary and any surplus generated cannot be appropriated by those who create, control or finance them.

The ES covers a set of companies and entities that represents an alternative way of generating economic activity, differentiating itself from conventional companies in terms of its governance principles and established priorities. This economic dimension is specifically highlighted in the requirements demanded of SE entities according to the Social and Solidarity Economy Law (LESS), where emphasis is placed on their status as a private entity and their exercise of an economic activity governed by business criteria (Fajardo, 2018). These entities, in the field of SE, adopt principles and values that allow this economic aspect to be reconciled with social responsibility and common well-being (Bastida et al., 2020).

According to Costamagna (2020), the SSE arises from community processes that were not always part of the established system, highlighting values such as solidarity, sustainability, equality, respect for the environment and behavior with the community. This perspective has a wide scope of action in the territory, with its networks and reflections, and at the same time provides a space where social organizations and people can teach the State and the academy, offering new models of production and consumption that question the capitalism from various perspectives.

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Agroecology promotes the consumption of local, organic foods that ensure an equitable relationship between producers and consumers. This movement, born in the context of food sovereignty, responds to the social, economic and environmental effects caused by the food industry. Simultaneously, the social and solidarity economy is consolidating itself as an alternative to dominant capitalism (Espelt, 2024).

### **Promotion of Cooperatives and Producer Networks:**

**Formation of Cooperatives:** Agroecological cooperatives allow small farmers to join forces, share resources and access larger, fairer markets. These cooperatives can negotiate better prices, reduce costs through collective purchases of inputs, and improve marketing capacity.

Below is an image (see figure 1), represented by men and women from the La Esperanza de Apanhuac Community, belonging to the Cacahuatatepec Communal Assets of various ages working in the field, demonstrating cooperation and community effort. A message of unity, sustainability and the importance of cooperation is transmitted to achieve healthy nutrition and strengthen the local economy through agroecological practices, demonstrating.

Fig. 1: represented by men and women from the La Esperanza de Apanhuac Community.



**Source:** Photograph taken by the authors.

Producer Networks: Establishing networks of agroecological producers facilitates the exchange of knowledge, experiences and resources. These networks can organize local fairs and markets, where producers sell directly to consumers, eliminating intermediaries and ensuring fairer prices.

#### **Education and Training:**

Training in Agroecological Practices: Providing continuous training in agroecological techniques helps farmers adopt sustainable practices that improve productivity and soil health. Training programs may include integrated pest management, composting, crop rotation and efficient water use (figure 2).

Fig. 1: The following photograph shows the biological diversity, characteristic of agroecology, including vegetables, fruits and medicinal herbs.



**Source:** Photograph taken by the authors.

**Social Economy Education:** Teaching farmers and communities about the principles of the social and solidarity economy, such as equity, cooperation and sustainability, encourages greater participation and commitment to these practices.

**Access to Financing and Resources:**

**Microcredits and Solidarity Funds:** Creating microfinancing mechanisms and solidarity funds specifically designed for agroecological projects allows small farmers to access the resources necessary to improve their practices and expand their operations.

**Government Subsidies and Support:** Governments can implement financial support policies and programs for agroecology, including subsidies for the adoption of sustainable technologies and ecological certification, as well as tax incentives for cooperatives and social economy companies.

**Strengthening Local Markets:**

**Farmers Markets:** Establishing and supporting local farmers markets and fairs allows producers to sell directly to consumers, reducing dependence on large distribution chains and increasing local incomes.

**Responsible Consumption Initiatives:** Encourage the consumption of agroecological and local products through awareness campaigns, certification labels and consumer education programs on the benefits of supporting local and sustainable producers.

**Public Policies and Institutional Support:**

**Incorporation of Agroecology in Agricultural Policies:** Including agroecology in national and local agricultural policies ensures a legal and regulatory framework that supports the transition towards sustainable agricultural practices. This may include protection of agricultural lands, incentives for biodiversity, and favorable regulations for organic production.

Strengthening the social economy through agroecology requires a multidimensional approach that includes the formation of cooperatives, continuous education and training, access to financing, strengthening local markets, institutional support and the creation of strategic alliances. These strategies not only promote sustainable agricultural practices, but also foster social and economic justice, creating more resilient and self-sufficient communities.

As a summary, Agroecology offers a robust framework to improve nutrition and strengthen the social economy. By integrating sustainable practices with a focus on equity and social justice, this model provides a pathway to more

resilient, fair and sustainable food systems, benefiting both the environment and local communities.

## CONCLUSIONS

Agroecology emerges as a holistic solution that integrates traditional and scientific knowledge to address contemporary challenges in nutrition and social economy. This approach not only promotes environmental sustainability, but also has a significant impact on improving the quality of life of local communities.

**Nutrition:** Agroecology drives the production of fresh, varied and nutritious foods, which improves food security and dietary quality. By promoting crop diversity and sustainable agricultural practices, you ensure a more balanced diet rich in essential nutrients, crucial to combating malnutrition and diet-related diseases.

**Social Economy Economically,** agroecology strengthens local economies by supporting small farmers and encouraging local markets. This model promotes social and economic justice by ensuring equitable distribution of resources and more direct access to markets. Agroecological farmers earn more stable and fair incomes by eliminating middlemen, selling quality products directly to conscious consumers.

**Food sovereignty:** Agroecology contributes significantly to food sovereignty, allowing communities to define and control their food systems according to their own needs and values. This empowerment of local producers and consumers creates a more just and sustainable economy, and fosters self-determination and community resilience.

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