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ORIGINAL

Determining the cost-benefit ratio of financial advice in the implementation of sustainable practices in the cultivation of turmeric long

Determinar de la relación de costos-beneficios de asesoría financiera en la implementación de prácticas sostenibles en el cultivo de cúrcuma longa

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ABSTRACT

Turmeric production in the department of Caquetá, especially in Florencia, is undergoing a transition towards more sustainable and responsible practices due to the increasing demand for this plant for its medicinal and culinary properties. Environmentally friendly agricultural practices are being implemented, such as integrated pest and disease management, the use of organic fertilizers, and efficient irrigation systems. These measures not only preserve the environment but can also improve product quality and benefit local communities. The exploratory, deductive, and inductive analysis reveals the complexity of the transition process, highlighting the importance of a holistic approach that considers economic, environmental, and social aspects. Although there are challenges, such as choosing appropriate methods and effectively implementing new practices, motivation and the positive potential of aspects such as previous experience and health can inspire farmers on their path towards sustainable agriculture. It is essential to address limitations with a proactive approach and provide the necessary support to move towards a healthier and more environmentally friendly production model.

Keywords: Production; Turmeric; Transition; Practices; Management; Challenges; Organic.

RESUMEN

La producción de cúrcuma en el departamento del Caquetá, especialmente en Florencia, está experimentando una transición hacia prácticas más sostenibles y responsables debido a la creciente demanda de esta planta por sus propiedades medicinales y culinarias. Se están implementando prácticas agrícolas amigables con el medio ambiente, como el manejo integrado de plagas y enfermedades, el uso de abonos orgánicos y sistemas de riego eficientes. Estas medidas no solo preservan el entorno, sino que también pueden mejorar la calidad del producto y beneficiar a las comunidades locales. El análisis exploratorio, deductivo e inductivo revela la complejidad del proceso de transición, destacando la importancia de un enfoque holístico que considere aspectos económicos, ambientales y sociales. Aunque existen desafíos, como la elección de métodos adecuados y la implementación efectiva de nuevas prácticas, la motivación y el potencial positivo de aspectos como la experiencia previa y la salud pueden inspirar a los agricultores en su camino hacia la agricultura sostenible. Es fundamental abordar las limitaciones con un enfoque proactivo y ofrecer el apoyo necesario para avanzar hacia un modelo de producción más saludable y respetuoso con el medio ambiente.

Palabras clave: Producción; Cúrcuma; Transición; Practicas Manejo; Desafíos; Orgánico.

INTRODUCTION

The production of turmeric in the department of Caquetá, specifically in the city of Florencia, has experienced notable growth in recent years due to the increasing demand for this plant's medicinal and culinary properties. However, this increase in production poses environmental and social sustainability challenges. In this context, environmentally friendly agricultural practices are being implemented to grow turmeric more sustainably.[1]

According to Bielli et al.[2] these practices focus on reducing the use of agrochemicals and promoting organic farming methods. For example, integrated pest and disease management techniques are being adopted that minimize dependence on chemical pesticides and herbicides, and the use of organic fertilizers is being encouraged to improve soil fertility and reduce erosion.

In addition, efficient irrigation systems are being implemented to optimize water use, and renewable energy is being promoted to reduce the carbon footprint associated with turmeric production.[3,4] These practices not only help to preserve the environment but can also improve the quality of the final product and benefit local communities by promoting soil and water health and biodiversity in the region.[5,6,7,8,9]

In this sense, turmeric production in Caquetá, especially in Florencia, is transitioning towards more sustainable and responsible models. These models seek to balance agricultural productivity with environmental conservation and the well-being of local communities. This holistic approach to turmeric production ensures a continuous supply of this precious crop and contributes to the construction of more resilient and equitable agricultural systems in the region.

METHOD

Location

The study will be carried out in the department of Caquetá, located in the south of Colombia, in the Amazon region. Specifically, it will focus on the municipality of Florencia, with special attention to the village of Santo Domingo, where the Curcuma longa cultivation area is located on Pinel Hill.

Population

The target population is the farmers of the municipality of Florencia, which has approximately 240,000 inhabitants. It is hoped that these farmers will benefit directly from the agroecological production model of Cúrcuma Longa. However, the model is also designed to be replicable and accessible to farmers in other regions interested in adopting agroecological practices.

Approach

The research focuses on developing a training program for farmers in agroecological management practices, specifically aimed at cultivating Curcuma Longa. This approach seeks to use the area's resources and promote sustainable practices that respect the environment and promote food security.

Method

The method used to develop the training program included an initial interview to assess the farmers' previous experience in crop management and identify areas for improvement. This information was used to adapt the program content to the farmers' specific needs and ensure its relevance and effectiveness.

Paradigm

The type of research is framed within the critical-social research paradigm, which promotes the active participation of farmers in the research process and decision-making related to the adoption of agroecological practices. This approach seeks to guarantee that the training program is designed in a participatory manner and considers the socio-economic and environmental realities of the farmers and their communities.

This methodology provides a solid foundation for developing and implementing the training program in agroecological management of the cultivation of Curcuma longa in the department of Caquetá.

RESULTS

Exploratory analysis: General perception

The exploratory analysis of turmeric cultivation reveals an interconnected network of key elements. At the center of this network is the product, turmeric, the cultivation and management of which requires a careful and coordinated approach. As a fundamental part of this network, producers depend on land, chemicals, and human resources to plant and cultivate turmeric roots. However, agroecological methods and adequate training are crucial to maximize profit and promote health. Certification guarantees standards of quality and sustainability, strengthening confidence in the product. Producers can access technical and commercial support through networking and collaboration, enabling them to expand their reach and diversify their products. This analysis provides a comprehensive basis for visually visualizing the interviewee's experience (figure 1).

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Figure 1. Concept cloud

Deductive analysis

In the deductive analysis of the experience, a dynamic process of knowledge transmission and adaptation to different conditions can be observed. Through their residence in the growing area, producers experience a constant balance between maintaining traditional practices and adopting innovations. This continuous change implies potential costs related to investment in new techniques and technologies and learning opportunities to improve efficiency and product quality. Certification plays a crucial role in this process, providing a frame of reference for evaluating and validating agricultural practices (figure 2).

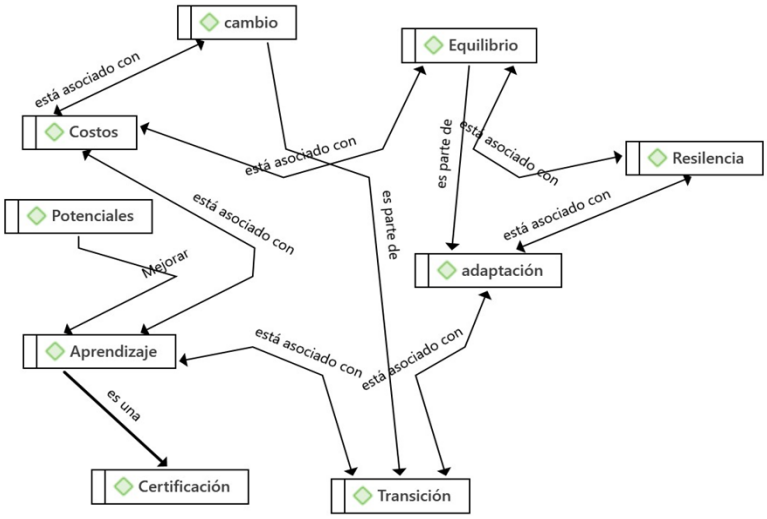

Figure 2. Word networks connecting economic costs

Biodiversity is fundamental to sustainable practices in organic agriculture, where crop rotation is prioritized, and chemicals are avoided. Experience and advice play key roles in this process, ensuring that practices are practical and respectful of the environment and promoting a balance between production and the conservation of natural resources (figure 3).

Inductive analysis

Turmeric cultivation is in the process of transitioning towards more sustainable practices. The words part of the motivation are experience, health, conservation, change, and land. These words are related to positive and motivating aspects that drive the shift towards healthier and more environmentally friendly agricultural practices. Farmers' previous experience, the positive impact on health, the conservation of natural resources, the need for change towards more sustainable systems, and the value of land as a vital resource are factors that can inspire and motivate farmers to adopt new practices.

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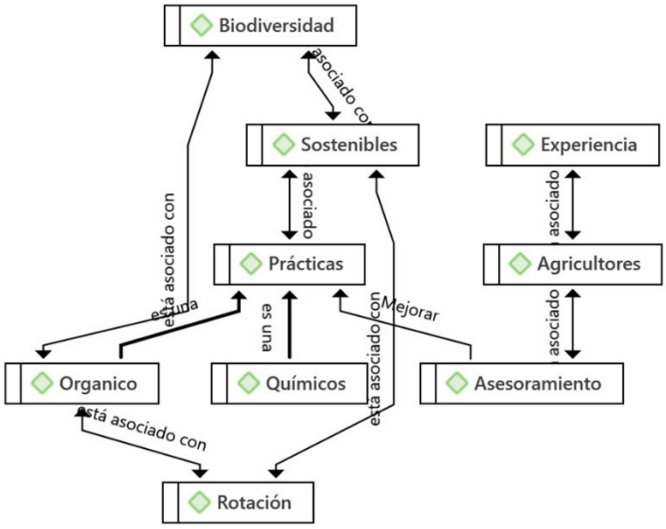

Figure 3. Word networks connecting the organic

On the other hand, the words that are part of the limitation are method, practices, and restriction. These words suggest challenges and obstacles hindering the transition towards more sustainable practices. Choosing the correct method, effectively implementing new agricultural practices, and the limitations inherent in the change process can generate uncertainty and resistance among farmers. However, it is essential to emphasize that these limitations can be overcome with the right motivation and adequate support to boost the transition process towards sustainable agriculture (figure 4).

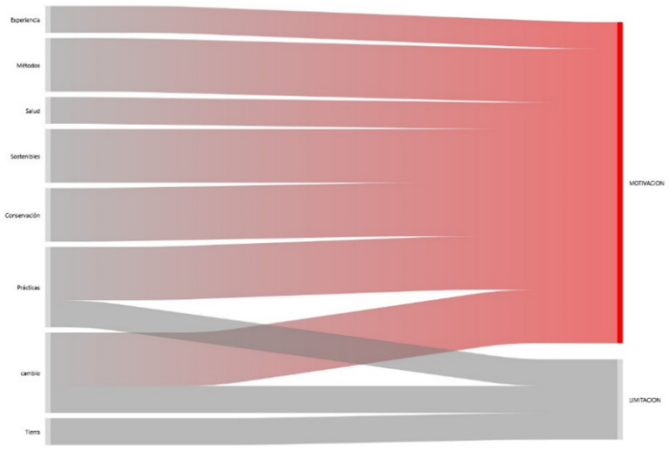

Figure 4. Sankey diagram

CONCLUSIONS

Exploratory, deductive, and inductive analysis of the experience of growing turmeric in transitioning towards more sustainable practices reveals the complexity and interconnectedness of different aspects involved in this process. From dependence on resources such as land and chemicals to the need for training and certification, the importance of a holistic approach that considers economic, environmental, and social aspects is evident.

Despite the challenges and limitations inherent in the transition process, such as choosing suitable methods and effectively implementing new practices, the motivation and positive potential of aspects such as previous experience, health, conservation, and change to inspire and guide farmers toward sustainable agriculture are highlighted. This highlights the importance of addressing limitations proactively and offering the necessary support to overcome them and move towards a healthier and more environmentally friendly production model.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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