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ORIGINAL

To analyze the teaching and learning processes in the cultivation of copoazú in the Caranguchal village

Analizar los procesos de enseñanza y aprendizaje en el cultivo de copoazú en la vereda el Caranguchal

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ABSTRACT

The copoazú production chain is a fundamental area of study, especially in relation to the teaching and learning processes involved in its cultivation. The copoazú, belonging to the Theobroma genus, is native to neotropical regions and stands out in Brazil and Colombia for its diversity. This study focuses on the Caranguchal village, Florencia, Caquetá, and examines how knowledge transfer impacts copoazú productivity and quality. In this context, several educational strategies have been implemented, including lectures and practical activities in the field, with the objective of engaging farmers in continuous and participatory learning. The main problem investigated is the effectiveness of these educational processes. The results obtained are evaluated and an analysis is made of how the teaching strategies affect the copoazú production chain. The research was carried out in the Santa Marta village in Florencia, where farmers are engaged not only in copoazú, but also in other crops and livestock activities. The methodology used included surveys and qualitative interviews to collect data on farmers' perceptions and experiences. The results reveal that the active participation of farmers in the educational process is crucial to improve agricultural practices and crop sustainability. However, challenges such as limited access to updated information and difficulties in marketing due to infrastructure problems are also identified. The research highlights the importance of short marketing circuits and the implementation of agroecological practices to preserve biodiversity and improve economic and environmental sustainability. In conclusion, the study underscores the need to promote educational methods adapted to local needs and encourage community participation to achieve greater effectiveness in the copoazú production chain. This will contribute to improve the quality of life of farmers and ensure the long-term sustainability of this important agricultural activity.

Keyword: Copoazú; Agricultural education; Sustainability; Agroecology.

RESUMEN

La cadena productiva del copoazú es un área de estudio fundamental, especialmente en relación con los procesos de enseñanza y aprendizaje involucrados en su cultivo. El copoazú, perteneciente al género Theobroma, es originario de regiones neotropicales y destaca en Brasil y Colombia por su diversidad. Este estudio se centra en la vereda Caranguchal, Florencia, Caquetá, y examina cómo la transferencia de conocimientos impacta la productividad y calidad del copoazú. En este contexto, se han implementado diversas estrategias educativas, incluyendo conferencias y actividades prácticas en el campo, con el objetivo de involucrar a los agricultores en un aprendizaje continuo y participativo. El principal problema investigado es la efectividad de estos procesos educativos. Se evalúan los resultados obtenidos y se analiza cómo las estrategias de enseñanza afectan la cadena productiva del copoazú. La investigación se llevó a cabo en la vereda Santa Marta, en Florencia, donde los agricultores se dedican no solo al copoazú, sino también a otros cultivos y actividades ganaderas. La metodología utilizada incluyó encuestas y entrevistas cualitativas para recopilar datos sobre las percepciones y experiencias de los productores. Los resultados revelan que la participación activa de los agricultores en el proceso educativo es crucial para mejorar las prácticas agrícolas y la sostenibilidad del cultivo. Sin embargo, también se identifican desafíos como el acceso limitado a información actualizada y las dificultades en la comercialización debido a problemas de infraestructura. La investigación destaca la importancia de los circuitos cortos de comercialización y la implementación de prácticas agroecológicas para preservar la biodiversidad y mejorar la sostenibilidad económica y ambiental. En conclusión, el estudio subraya la necesidad de promover métodos educativos adaptados a las necesidades locales y fomentar la participación comunitaria para lograr una mayor efectividad en la cadena productiva del copoazú. Esto contribuirá a mejorar la calidad de vida de los agricultores y a garantizar la sostenibilidad a largo plazo de esta importante actividad agrícola.

Palabras clave: Copoazú; Educación agrícola; Sostenibilidad; Agroecología.

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INTRODUCTION

The copoazú production chain emerges as a key field of study, where the teaching and learning process plays a fundamental role (Orozco & Rodríguez, 2017). The copoazú belongs to the genus Theobroma. There are 22 species of neotropical trees, distributed from 18° north latitude to 15° south latitude, where Brazil and Colombia are considered the main centers of diversity. Sterling & Rodríguez (2014).

"In Latin America, agrarian law has become a powerful tool in favor of the subaltern subjects of rurality to balance the profoundly unequal relations they face, which are deepened by private law, based on a liberal vision of private property akin to capitalist forms of production." Carrozza & Morales(2005)

Agricultural production is an essential component of the economy of many regions, contributing significantly to sustainable development Meneses Quiroga (2020).

The paper dives into evaluating the results obtained in this process, exploring how knowledge transfer directly impacts the productivity and quality of copoazú Moreno (2020) production.

As an objective of the teaching and learning processes of the Copoazú crop in the Caranguchal village, which seeks not only to transmit knowledge but also to encourage participation and continuous learning in the community of the Caranguchal village, Include farmers in the evaluation of the educational process, gathering feedback on the effectiveness of teaching strategies and possible areas for improvement

The research problem lies in the effectiveness of the teaching and learning process in cultivating the copoazú production chain. Specifically, what are the results of the teaching and learning process in cultivating the copoazú production chain? In the municipality of Florencia, various educational methods and strategies have been implemented for learning the copoazú production chains. These strategies include lectures in closed environments and activities in open areas that directly involve field and crop observation.

"The problems of how people learn do not arise from the practical problems that learners experience during the learning processes, but from the beliefs and theories from which these processes are interpreted" (Castañeda Zapata and Cárdenas, 2008, p. 74).

The property has managed to obtain significant yields through various agricultural and livestock activities, including the cultivation of copoazú, cocoa, oranges, bananas, plantains, camo, and poultry. The owner follows a traditional production methodology and has limited access to information for self-learning through books, meetings in the production chain, and conversations with a few people who are knowledgeable in this area.

This research is expected to provide valuable information on the effectiveness of the teaching and learning process in the cultivation of the copoazú production chain, which could contribute to improving agricultural practices and increase the results of productive knowledge for farmers through didactic workshops (such as the dice of questions, box test, forum among others, field trips (observations of some processes of planting, pruning, harvesting), the research made it participatory for all people involved to contribute and contribute their knowledge.

METHOD

The methodology sought to transmit knowledge and encourage participation and continuous learning in the community of the Caranguchal village. Farmers were included in evaluating the educational process and gathering feedback on the effectiveness of teaching strategies and possible areas for improvement.

Location and population

The research was conducted in the urban area, located on the road leading to Morelia, with a detour to Caranguchal, specifically in the Santa Marta village in Florencia, Caquetá. The geographical coordinates of this location are 1°36′51″N and 75°36′42″W, and in this site they have an extension of land that exceeds 1700 m^2.

Figure 1 is the area designated for the research to analyze the teaching and learning process applied to the cultivation of the copoazú production chain. The study will be carried out through a methodological strategy based on surveys to obtain significant data that will allow a comprehensive evaluation of this process in this specific context.

Population

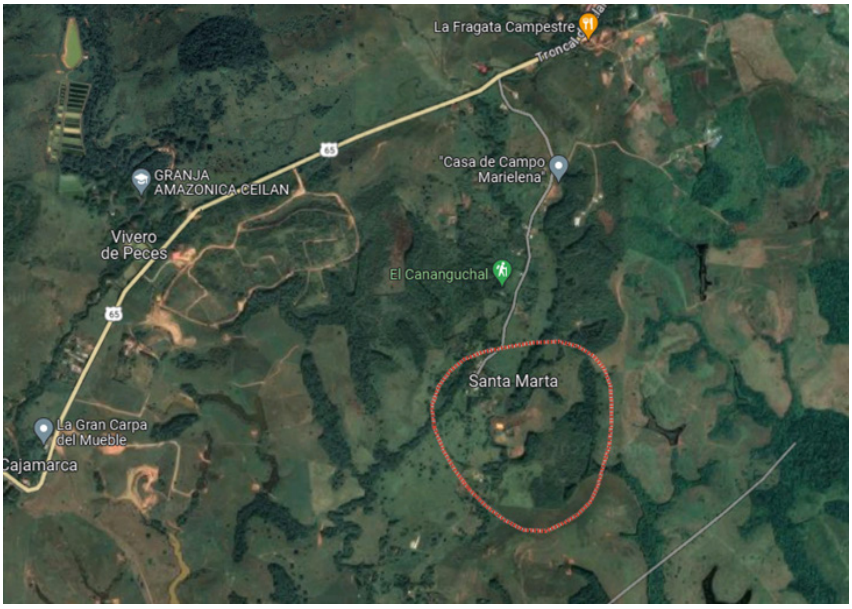
The present work will be carried out with the community of the village of Caranguchal by integrating different perspectives which have managed to obtain significant yields through various agricultural and livestock activities, including the cultivation of copoazú, cocoa, oranges, bananas, bananas, camo, and poultry breeding. However, their primary commercial focus is copoazú cultivation, which they started 15 years ago after participating in seed guardian conferences. From this seed, they now have 60 trees in production.

Paradigm

The research was based on the paradigm that cultivating Copoazú in the village of Caranguchal is not simply an agricultural activity but an integral process intertwined with the community's daily life. To adequately understand the teaching and learning processes related to this practice, which goes beyond observing agricultural techniques, seek to unravel the social, economic, and cultural complexities that influence the transmission and acquisition of knowledge in the specific context of Copoazú cultivation.

Considering the cultural diversity in the village of Caranguchal, this approach seeks to promote an intercultural dialogue that enriches the teaching and learning processes, recognizing the importance of preserving and revitalizing agricultural practices rooted in history and local identity. This data will provide a more generalizable view of certain aspects, such as the level of acquired

knowledge, standard practices, and general perceptions in the community of this village.



Source: Google maps (2023)
Figure 1. Location of the research area

Type of research

The research is of an evaluative/comparative type. It focuses on evaluating the effectiveness of the teaching and learning process in the cultivation of the copoazú production chain. The research will include the analysis of the results of the interview of the participants, the results of those who have not participated.

The research approach is qualitative as it focuses on understanding the reality from the perspective of the producers, and on identifying their perceptions, beliefs and knowledge about copoazú cultivation.

The research method is qualitative, based on the interpretation of experiences given by the community of the copoazú production chain.

Diagnosis of the knowledge of the producers associated with the Copoazú crop.

They conducted an applied interview with producers to obtain a representative view of the opinions and experiences within the supply chain industry. The number of interviewees allowed for a diversity of perspectives and situations relevant to understanding the sector's challenges and needs.

The interview questions were open-ended, clear, concise, and easy to answer. Voice recordings were made, which facilitated data collection and ensured that the producers expressed their ideas effectively.

The questions related to technology adoption in agriculture, environmental sustainability, and market trends provided a more complete and up-to-date picture of the situation.

RESULTS AND DISCUSSION

Diagnosis of the knowledge of the producers associated with the Copoazú crop.

Benefit

The perceptions of program implementers reveal different categories of analysis identified for the study and its evaluation.

According to SINCHI (2017), knowledge sharing is not limited to transfer but involves a construction process that requires constant dialogue. This value is not reduced only to economic issues but ranges from community strengthening to environmental preservation.

In figure 2, the network observes that the information from the research on the knowledge of the copoazú production chain was not relevant, which suggests that this research is ignorant of how it covers the economic benefits and its process of reaching a good, viable sustainability.

FAO (2015) states the importance of considering sustainability in three aspects when addressing value chains: economic, social, and environmental. Economic sustainability aims to increase the income and profits of those involved to ensure long-term financial continuity. In the social sphere, it seeks an equitable income distribution beyond the monetary, especially for those most vulnerable in the chain. Finally, environmental sustainability requires responsible use of natural resources to maintain the chain in the long term.

Environmental

The diversity of the copoazú fruit for processes such as juice, jams, nectars, pulp, dairy products, chocolates, the manufacture of cosmetics, and the production of food for animals and its great ecological contribution such as the use of the shell for the use of

organic fertilizer in agroforestry systems (Rodríguez & Mendoza, 2002).

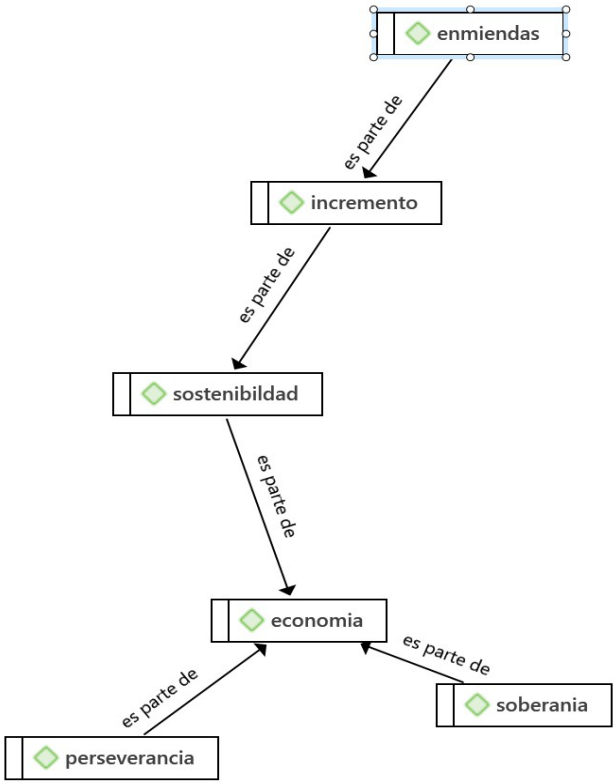


Figure 2. Network diagram of the profit family

In figure 3, in the network, it is observed that the information of the environmental family is intertwined with the ecology since it is essentially a contribution to the potentialities of the land. These are systems that carry different sustainable agroforestry management, which allow to improve the characteristics of this, likewise allows a greater extension in the natural and native diversity of the regions contributing an improvement in the production management is a valuable tool to understand how its different parts work and how they are interconnected to maintain a healthy system.

According to Santos (2012), the copoazú belongs to the genus Theobroma, which includes 22 species found in neotropical regions in the rainy zones of the tropics. It is distributed from 18° north latitude to 15° south latitude. Brazil and Colombia are considered the most diverse places for this genus, with the most significant number of wild species.

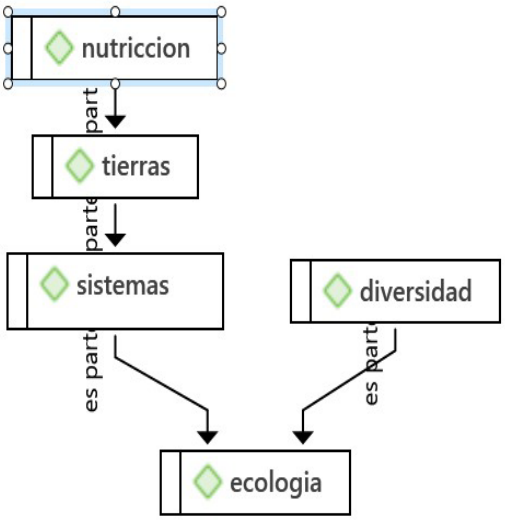


Figure 3. Environmental family network diagram

CONCLUSION

Once the research on the teaching analysis of the copoazú production chain was evaluated, it was considered that the diversity of information within the sample obtained through the interviews was crucial, highlighting relevant aspects such as geographic

location, type of crop, economics, and its management order to get good sustainability.

The teaching and learning process in the copoazú production chain in the Caranguchal village reveals the complexity and importance of this agricultural system in the region, which has been managed with various educational methods implemented to train farmers, from lectures in closed environments to activities in the field. The results show that knowledge transfer positively impacts the productivity and quality of copoazú production but also identified areas where lack of access to updated information could limit its sustainable development. In addition, the importance of considering economic, social, and environmental aspects to ensure the long-term sustainability of this production chain was highlighted.

This suggests the need to continue promoting participatory and locally adapted educational methods to improve agricultural practices and increase productive outcomes for farmers.

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The authors did not receive funding for the development of this research.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

AUTHORSHIP CONTRIBUTION

Conceptualization: Víctor Alejandro Escobar Peña, Jeny Alexandra Piedra Espinosa, Verenice Sánchez Castillo.
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Formal analysis: Víctor Alejandro Escobar Peña, Jeny Alexandra Piedra Espinosa, Verenice Sánchez Castillo.
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Methodology: Víctor Alejandro Escobar Peña, Jeny Alexandra Piedra Espinosa, Verenice Sánchez Castillo.
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Writing - original draft: Víctor Alejandro Escobar Peña, Jeny Alexandra Piedra Espinosa, Verenice Sánchez Castillo.
Writing - proofreading and editing: Víctor Alejandro Escobar Peña, Jeny Alexandra Piedra Espinosa, Verenice Sánchez Castillo.

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