

**ORIGINAL**  
**Research article**

## **Economic strategies for rural development in Santander through extension and territorial planning\***

**Estrategias económicas para el desarrollo rural de Santander a través de la extensión y el ordenamiento territorial**

Received: May 10, 2023 - Evaluated: August 11, 2023 - Accepted: November 13, 2023

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**To cite this Article**

González-Araque, J. A., & Mosquera-Téllez, J. (2024). Economic strategies for rural development in Santander through extension and territorial planning . *Revista Gestión y Desarrollo Libre*, 9(17). 1-17. <https://doi.org/10.18041/2539-3669/gestionlibre.17.2024.11046>

**Editor:** Dr. Rolando Eslava-Zapata

**Abstract**

The study aims to formulate economic strategies to strengthen rural development in the Santander department through extension and land use planning. For this purpose, a theoretical review was conducted with a theoretical-explanatory documentary character and an analytical-correlational approach. The conceptual, diagnostic, and propositional methodological phases were carried out under economic, environmental, and social criteria. The normative, theoretical, and conceptual foundation externalizes rural land's territorial asymmetries and the regional approach's importance for departmental rural development. The diagnosis shows sectoral and multilevel disarticulation, systemic potentialities of the territory, and weaknesses of Santander's departmental planning instruments. The results make it possible to interpret the complexity of the transformations that condition rural development in the department, articulate different regional planning instruments, and strengthen the role of the economic perspective in regional competitiveness, environmental sustainability, and social equity by the objectives of sustainable development.

\* Original article. Research and innovation article. Research article. Research project Guidelines for regional development and environmental governance for the Greater Santander Administrative Planning Region in the medium term, linked to the Integrated Territory Management Research Group – GIT and the Economic and Business Sciences Research Group GICEE of the Universidad de Pamplona, Colombia.

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**Keywords:** Regional Competitiveness, Rural Development, Environmental Sustainability, Social Equity

### **Resumen**

El estudio tiene como objetivo formular estrategias económicas orientadas a fortalecer el desarrollo rural en el departamento de Santander a través de la extensión y el ordenamiento del territorio. Para ello, se llevó a cabo una revisión teórica con carácter documental de tipo teórico-explicativa y un enfoque analítico-correlacional. Las fases metodológicas conceptual, diagnóstica y propositiva se llevaron a cabo bajo criterios de económicos, ambientales y sociales. La fundamentación normativa, teórica y conceptual exterioriza las asimetrías territoriales del suelo rural y la importancia del enfoque regional para el desarrollo rural departamental. El diagnóstico evidencia desarticulación sectorial y multinivel, potencialidades sistémicas del territorio y debilidades de los instrumentos de planificación departamental de Santander. Los resultados permiten interpretar la complejidad de las transformaciones que condicionan el desarrollo rural del departamento, articular diferentes instrumentos de planificación regional, y fortalecer el papel de la perspectiva económica en la competitividad regional, la sostenibilidad ambiental y la equidad social, en concordancia con los objetivos de desarrollo sostenible.

**Palabras Clave:** Competitividad Regional, Desarrollo Rural, Sostenibilidad Ambiental, Equidad Social

### **SUMMARY**

INTRODUCTION. RESOLUTION SCHEME. - I. Research Problem. - II. Methodology. - III. Writing plan. - 1. Rural development, extension, and territorial planning. - 2. Legal bases of rural development in Colombia. - IV. Research results. - 1. Territorial diagnosis of Santander. - 2. Rural development strategies for Santander. - CONCLUSIONS. - REFERENCES.

### **Introduction**

Despite its potential, rural land in Latin America is characterized by the presence of major conflicts (Quiroga-Cubillos, 2019, p. 204) in environmental, economic, and social aspects, and irregular indicators associated with land concentration and unsuccessful agrarian reform initiatives (ECLAC; FAO; IICA, 2019, p. 13), while the global neoliberal trend led to little governmental attention in Colombia to rural development (Cárdenas-Pinzón & Vallejo-Zamudio, 2015, p. 96). 13), while the global neoliberal trend led to scant governmental attention in Colombia towards rural development (Cárdenas-Pinzón & vallejo-Zamudio, 2015, p. 96), while prioritizing the export of flowers and vegetables and encouraging the participation of women in such rural activities, in such a way that the modification of the productive approach of self-sufficiency became an alternative to improve the quality of life of some peasants. However, in the face of the broad normativity existing in the country on territorial development, rural development, and agricultural extension, and the aforementioned productive trends, land use conflicts generated by economic activity are abundant and have had an impact on the increase of social inequity and the low economic competitiveness of the Colombian countryside (Carrillo-Castelblanco & Useche-Triana, 2018, p. 16).

In the scope of the department of Santander, the prevalence of urban development over rural development and the neglect of the social conditions of the peasantry has led to precarious rural development, negative environmental impacts, and precariousness of rural life characterized by primary agricultural and livestock economic activities complemented by forestry

exploitation, which according to the National Administrative Department of Statistics (DANE) are represented with more than 10.00% and 50.00% of land use, respectively. (DANE, 2021, p. 8-10), While according to the Agustín Codazzi Geographic Institute (IGAC), the 43.00% overutilization of departmental land and 16.00% underutilization generate territorial conflicts (IGAC, 2016) associated with the irreparable impact of natural reserve areas and other specific productive areas (Viscaya-Cáceres & Curtidor-Martínez, 2016).

In Santander, planning processes have been carried out that respond to exogenous changes and new trends in rural development with a territorial approach; however, the social system presents limited indicators, the political system has low effectiveness of public policies, the economic system does not take into account the capacities of local producers, which considerably affects the rural competitiveness of the department (DANE, 2022). In addition, there needs to be a marked disarticulation of sectoral initiatives and a low application of integrated territorial planning approaches for developing the rural sector.

Based on these social, economic, political, and territorial problems, the study focused on strengthening the economic approach that prevails in rural areas with strategic regional planning and development aspects. Therefore, the objective of the work was aimed at formulating economic strategies for strengthening the rural sector of Santander through rural extension and land use planning from a documentary methodological structure of a quantitative, theoretical-explanatory, and analytical-correlational type, which allowed carrying out the theoretical foundation of regional and rural development, the analysis of three (3) prioritized planning instruments and the formulation of economic strategies that incorporate elements of rural extension and land use planning to ensure economic and productive growth that promotes social welfare and environmental sustainability.

## **Resolution scheme**

### **1. Research Problem**

How can strategies be formulated to enhance rural development and regional competitiveness in Santander through rural extension and land use planning?

### **2. Methodology**

The present research is quantitative with a documentary character of a theoretical-explanatory type and an analytical-correlational approach. The documentary character is supported through a theoretical and documentary review of theories of rural development with a local perspective as a basis for the process of analysis and correlation of variables that are raised in the three (3) study instruments which are: Departmental Agricultural Extension Plan 2020-2023 (Government of Santander, 2020), Land Use Planning Guidelines and Directives (Government of Santander, 2014) and Regional Competitiveness Plan (PRC) 2020-2032 of the Department of Santander (Chamber of Commerce of Bucaramanga, 2020), as elements of exploratory articulation for the generation of strategies in line with the objectives proposed.

For this analysis, a purposive - non-probabilistic sampling of departmental planning instruments was used, taking as a sample the Agricultural Extension Plan (PDEA) 2020-2023 of Santander, the Regional Competitiveness Plan (PRC) 2020-2032 of Santander and the Land Use Planning Guidelines of Santander of 2014. Data collection and information analysis

instruments were bibliographic consultations in specialized databases, documentary archives, and variable correlation matrices.

The phases proposed for the methodological development of the project were conceptual, contextual, and propositional. The conceptual phase comprised the collection and analysis of theoretical, conceptual, and normative information related to the problems presented in this research. It was carried out with the help of specialized databases and governmental entities. The contextual phase contemplated the analysis of secondary information obtained from the instruments of the Agricultural Extension Plan (PDEA) 2020-2023 of Santander, the Regional Competitiveness Plan (PRC) 2020-2032 of Santander, and the Land Use Planning Guidelines of Santander of 2014, using a comparative study of the three planning instruments and the prioritization of key elements with SWOT matrices. Finally, based on the results obtained in the previous stages, the proposal phase made it possible to define development strategies using criteria of regional competitiveness, environmental sustainability, and social equity through the Analytical Matrices for Strategy Formulation (MAFE).

### **3. Writing plan**

#### **3.1 Rural development, extension, and territorial planning**

Historically, rural areas have been closely linked to agricultural production, which is why public policy and rural processes have focused on the development of this sector, especially in the primary sector of the economy associated with extraction, fishing, agriculture, and livestock, but from a utilitarian point of view of the land, without alluding to the diversity of multisectoral relationships that encompass the sociocultural dynamics of life in the countryside.

It is common to find a scarcity of tools for the interpretation of the rural and the generation of guidelines that contribute to territorial cohesion (Fernández, Fernández, & Soloaga, 2016, p. 16), especially of soils far from large cities, regularly known as “remote rural,” with enormous difficulties in their access conditions and structural social and technological gaps that have an impact on the decrease of the rural population (Ruiz-Pulpón & Martínez-Sánchez, 2022, p. 6). In addition, according to a report by the International Labor Organization (ILO), rural land has precarious working conditions and biological vulnerability (ILO, 2020, p. 4), which makes it sensitive to extreme climate variability and its impact on vegetation cover, water network, and protection area (López-Feldman, et al., 2019, p. 35).

For these reasons, within rural development trends, the formulation of rural development policies aimed at decentralization and autonomy of the rural sector (Alario-Trigueros & Morales-Prieto, 2020, p. 5) and the sustainability of natural resources (Castilla-Gutiérrez, 2021, p. 115), which foster new approaches to the rural and the respective orientation of public policies (Dirven, 2019; Dirven & Candia, 2020), from an endogenous perspective (González-Meyer & Stefano-Micheletti, 2021, p. 10).

In the context of Latin America, characterized by huge territorial asymmetries (ECLAC, 2019, p. 12), approaches revolve around the generation and implementation of strategies to ensure access and land tenure through figures such as rural reforms, peasant reserve zones (FAO; ANT, 2019, p. 69) and the configuration of food systems (FAO; ECLAC, 2020, p. 5), all focused on improving the working conditions of peasants.

In Colombia, low decentralization and inefficient land use regulation (Plata-Guerrero, 2019; (DNP, 2021) and the armed conflict resulting from difficulties in land access and tenure (Carrillo Castelblanco & Useche-Triana, 2018) have given rise to rural reform and land

restitution processes, which start from the recognition of the strategic value of rural land close to urban environments (Thurmann Prudente, 2019), the need to increase rural productivity and seek its articulation with local tourism development dynamics (Mosquera-Téllez, Jaimes-Gauta & García-Mogollón, 2022, p. 7), of the obligation defined by the Ministry of Science, Technology and Innovation (MINCIENCIAS) to incorporate research and innovation in rural production (MINCIENCIAS, 2016, p. 189).

One of the approaches that have been widely disseminated is that of the new rurality, which is supported by a model that favors the construction of territorial peace through Development Programs with a Territorial Approach (PDET) and Social Management Plans for Rural Properties - POSPR (Agencia Nacional de Tierras, 2018), as mechanisms aimed at integrating, valuing and strengthening rural territories, especially those affected by the scourge of violence, armed conflict, forced displacement and deterritorialization; through strategies aimed at the conservation and recovery of the customs and cultural traditions of rural land (Rodríguez-Arango, 2018; Ramírez et al. , 2020, p. 8).

Another approach that can contribute to strengthening the countryside in Colombia is that of regional development (Malambo-Jiménez, 2018), whose orientations have been mainly focused on rural economic development with a territorial approach (Zuluaga-Aldana et al., 2021) based on the vocation and productive profile of rural land (Carvajal et al., 2018). Similarly, the systemic and interdisciplinary approach supported by the complexity of human relations in the territory (Rodríguez, 2017) is regularly used in studies on regional development, as in the case of the Administrative Planning Region (RAP) of Greater Santander, formed by the departments of Norte de Santander and Santander (Mosquera-Téllez et al., 2022, p. 19).

In this way, both regional development and the systemic approach to territory are valid for the Colombian context and enable the articulation of rural development and territorial planning (Massiris, 2017, p. 16; Massiris, 2018), can contribute to reduce the negative impacts caused by ignorance of the carrying capacity of strategic ecosystems (Flórez-Gutiérrez et al., 2021, p. 103), or due to inoperability of the same territorial entities in their public management (Rodríguez-Salas & Contreras, 2021, p. 3).

### **3.2 Legal bases of rural development in Colombia**

To date, Colombia's rural land and the peasant communities that inhabit it have not received the necessary attention from the State and the institutions in charge of the problems in the rural sector, which is reflected in the backwardness of the countryside and the consequent economic instability of Santander. However, it is convenient to highlight the orientation of the Political Constitution (PC) of Colombia to the promotion of productivity, competitiveness and harmonious regional development (Colombia, PC, 1991, Article 334), the direction to the articulation of socioeconomic planning processes from a territorial perspective promoted by the Territorial Development Law that regulates the issuance of Land Management Plans (POT) (Law 388, 1997) and complemented by Resolution No. 0422 (Rural Development Agency, Rural Development Agency, 1997). 0422 (Rural Development Agency, 2019), the support for the formulation and articulation of sectoral plans with territorial plans at different scales of approach to the territory exercised by the Organic Law of Territorial Planning - LOOT (Law 1454 of 2011) and the support of Law 1856 of 2017 that pursues the dynamization of rural development through increased productivity, rational use of resources, environmental sustainability and stability of the rural territory (Law 1876 of 2017).

As a complement, it is possible to highlight the existence of the Food and Nutritional Security Policy (SAN) and territorial development (Betancourt-García, 2017), which, from a sectoral approach, promotes the closing of socioeconomic gaps of food and nutritional insecurity, mainly present in vulnerable groups. The General Land Management Policy (PGOT) currently being formulated by the National Planning Department (DNP) under the guidelines of Colombia's Land Management Commission (COT, Agreement 028, 2020) seeks to become a long-term roadmap for the country's territorial development and proposes a balance between urban and rural areas as a mechanism for reducing the socio-spatial asymmetries present in the countryside.

However, despite their approval, the laws above have not produced the expected effects regarding the rational use of land and natural resources (Plata-Guerrero, 2019, p. 12). In addition, economic activities without technological incorporation technology and difficulties in overcoming traditional production have led to delays in rural development and the fulfillment of the Sustainable Development Goals (SDGs). Other regulations that influence the development of this research are shown in Table 1.

**Table 1. Planning regulations for rural development and territorial planning in Santander**

<b>RULE</b>	<b>CONCEPT</b>	<b>RELATIONSHIP WITH THE DEPARTMENT</b>
Ley 152/1994	“Organic Law of the Development Plan”.	To prepare municipal POTs integrated into the POD, guidance and technical support are required.
Decreto 1807/2014	Regulates the integration of the risk management area in the POT and compiles the “Decreto 3600 of 2007” on determinants of land use planning in rural areas and urban actions of land structuring and parceling.	Delimits rural agricultural, livestock, forestry, or natural resource exploitation areas in the restricted development category; classifies them into suburban soils, rural population centers, and areas for rural housing; regulates the location of health, education, social welfare, cultural, and sports facilities.
Decreto 264/2014	“Guidelines and directives of territorial planning for the department of Santander.”	Its orientation to 2030 supports the formulation of the Santander Departmental Management Plan.
Decreto 1077/2015	Sole Regulatory Decree of Housing, City, and Territory about land use planning.	It defines sustainable construction guidelines to reduce the consumption of natural resources and promote environmental, social, and economic sustainability.
Resolución 407/2018	The “Regulates the technical matters of the National Agricultural Innovation System - SNIA.”	The PDEA of Santander, as a planning instrument, defines <i>strategic elements</i> of rural extension.
Resolución 858/2018	Environmental determinants for the POT issued by the Regional Autonomous Corporation of Santander (CAS).	It focuses on the natural environment, the transformed environment and quality of life, risk management and adaptation to climate change, and maximum occupation densities.
Resolución 422/2019	Guarantees “quality in the provision of agricultural extension services, according to the Rural Development Agency (ADR) requirements.”	The PDEA delegates extension actions to the municipalities, facilitates the agricultural and institutional offer through productive projects, and consolidates the participation of rural women.
Resolución 1688/2019	The Corporación Autónoma Regional de la Defensa de la Meseta de Bucaramanga updates the environmental determinants for preparing municipal POTs.	It seeks to guarantee the sustainable development of rural land, urban land, and urban expansion.

Ley 1551/2012	It modernizes the regulations related to the municipal regime within constitutional and legal autonomy, which recognizes the municipalities as management instruments to fulfill their competencies and functions.	It guides the categorization of municipalities and districts according to population, current income, economic importance, and geographic location and supports the preparation of municipal development plans.
Ley 2200/2020	It dictates “norms tending to modernize the organization and operation of the departments.”	It requires training the administrative and political regime that makes up the territorial entity with goals and strategies for its proper management.

Source: modified from González (2021, p. 29-33).

#### 4. Research results

##### 4.1 Territorial diagnosis of Santander

Santander is one of the 32 departments of Colombia, with seven provinces that include 87 municipalities and 1,319,425 inhabitants, 143,441 of which live in rural areas (Gobernación de Santander, 2020). Its surface area is 30,537 km<sup>2</sup>, corresponding to 2.70% of the national territory, and the relief boasts comparative advantages given its environmental diversity represented in strategic ecosystems and water resources; however, it simultaneously presents a significant anthropic load associated with the inadequate use of environmental resources, such as water, fauna, and flora (Gobernación de Santander, 2014).

According to the PDEA of Santander, 31 productive chains were prioritized with a total value of 8,588,750. However, only 15 of them (worth 5,648,000,000 and carried out for an amount of 7,402,700,000,000) were contemplated in the departmental programs, which demonstrates the general noncompliance of the PDEA and the particular overcast of some processes, contrary to the development of the agricultural sector. On the other hand, the environmental authority's review of Santander's LDOT showed noncompliance with current regulations, the proposed territorial occupation model, and the absence of a prospective vision in the department's development. The review of Santander's PCR showed positive results in most of the indicators considered, in which environmental sustainability stands out. At the same time, conflicts are observed in protection zones related to deforestation and irrational land use. Likewise, infrastructure and market diversification are the subject of departmental challenges. Below is a comparative analysis of the three (3) planning instruments (Table 2).

**Table 2. Comparative table of Santander's three planning instruments**

	DEPARTMENTAL AGRICULTURAL EXTENSION PLAN - PDEA	GUIDELINES AND DIRECTIVES FOR TERRITORIAL PLANNING - LDOT	REGIONAL COMPETITIVENESS PLAN – PRC
Structure of the technical document	Prioritizes productive chains in response to economic, social, and environmental problems.	It seeks to enhance the department's territorial balance, integral human development, and social equity from 5 dimensions: natural, social, economic, environmental, and political-institutional.	It aims to improve competitiveness from the strategic pillars: institutional, productivity, and territorial development, and three transversal axes: human capital, infrastructure, and science, technology, and innovation).

Economic system (Productive)	It is oriented towards productivity, associativity, access to information, and use of ICT.	It aims to enhance agricultural production through biotechnology to ensure the proper use of resources, economic growth, and productivity through environmental services in protected areas and agricultural, forestry, industrial, and mining activities.	It seeks to diversify exports, increase participation in international markets, attract foreign investment, and promote the internationalization of the economy.
Economic system	The general objective is to increase the results of the prioritized productive chains through extension methodologies. Its goal is to increase the productivity and yields of the prioritized agricultural chains by 21.5%.	It considers vital social indicators that condition demographic behavior, permanence in the field, and the human development index.	
Environmental system	It contemplates agricultural supply and occupation criteria, food coverage, and expansion of organizational social competencies.	It seeks to improve economic, social, and territorial development, take advantage of ecosystems and landscapes, and minimize geological disadvantages, erosion, and degradation of water sources, fauna, and flora.	It needs to consider in its strategic pillars what is related to employment rates and unmet basic needs.
Territorial system	It presents actions to guarantee the availability of natural resources in agricultural, livestock, and forestry production.	It proposes a model of land occupation oriented to the proper use of natural resources and the protection and recovery of protected areas and strategic ecosystems.	It proposes strategies for the conservation and defense of environmental zones, sectoral agreements for the management of water resources, forest management, and agro-environmental development.

**Source:** modified from González (2021, p. 56-59).

Based on what was stated in the conceptualization and evidenced in the comparative analysis, two important components are identified: rural extension and territorial planning. The first presents strengths that allow to dynamize sustainable development, develop human and productive capacities, innovation, and establish support actions for producers in order to generate opportunities such as the inclusion of small producers, facilitating the institutional agricultural offer, develop the agricultural sector according to the specific characteristics of the department (table 3).

**Table 3. SWOT analysis of rural extension in Santander**

	INTERNAL ASPECTS	EXTERNAL ASPECTS
<b>Positive aspects</b>	<b>Strengths</b> 1. Boosts development and productivity. 2. Promotes sustainable development. 3. Develop community, productive, and associative capacities 4. Information and ICT available.	<b>Opportunities</b> 1. Inclusion of small producers in value chains. 2. Facilitates the institutional agricultural offer. 3. Agricultural development according to regional characteristics.



	<ol style="list-style-type: none"> <li>5. Allows sustainable management of natural resources</li> <li>6. Prioritises local production chains and livestock activities.</li> <li>7. Support actions aimed at diagnosing, recommending, updating, training, transferring, assisting, and empowering.</li> </ol>	<ol style="list-style-type: none"> <li>4. Agricultural production models with technological offers and better techniques.</li> <li>5. Participation of rural women.</li> <li>6. Conservation and efficient use of resources.</li> <li>7. Export of exotic fruits - pulps and freeze-dried products.</li> </ol>
<b>Negative aspects</b>	<p><b><u>Weaknesses</u></b></p> <ol style="list-style-type: none"> <li>1. Delay in agreements for the formation of PAPs.</li> <li>2. Low participation of women in agricultural activities.</li> <li>3. Lack of training in good agricultural practices.</li> <li>4. Lack of knowledge of the vocation of the soil.</li> <li>5. Poor management of local agro-ecological conditions</li> <li>6. Lack of measures for managing waste produced by agricultural and livestock processes.</li> <li>7. Low implementation of practices to mitigate offensive odors produced by some livestock activities.</li> </ol>	<p><b><u>Threats</u></b></p> <ol style="list-style-type: none"> <li>1. Changes in climate and extreme climatic variability.</li> <li>2. Armed actors with a presence in rural territories.</li> <li>3. Changes in resource allocation.</li> <li>4. Costs of agricultural inputs.</li> <li>5. Exhaustion of soil and water resources.</li> <li>6. Low generational replacement.</li> <li>7. Low profitability.</li> </ol>

**Source:** modified from González (2021, p. 59-61).

In turn, territorial planning has strengths such as a great diversity of natural attractions, strategic ecosystems, hydrographic networks, treatment plants, and waste disposal areas, a variety of climates, and good geographic location, which help to interrelate the territorial approach with the economic, social and political system and guide Santander's rural development (Table 4).

**Table 4. SWOT analysis of territorial planning in Santander**

	<b>INTERNAL ASPECTS</b>	<b>EXTERNAL ASPECTS</b>
<b>Positive aspects</b>	<p><b><u>Strengths</u></b></p> <ol style="list-style-type: none"> <li>1. Geographic location.</li> <li>2. Plains and valleys that allow for habitability.</li> <li>3. Metropolitan scale model</li> <li>4. Diversity of natural and cultural attractions.</li> <li>5. 255 research groups, a technological park, and three technological development centers</li> <li>6. Variety of climates (warm, semi-dry, cold, humid).</li> <li>7. Strategic ecosystems that provide goods and services to the urban-rural population.</li> <li>8. Hydrographic network - rivers, streams and wetlands</li> <li>9. Wastewater treatment plants (WWTP) and solid waste disposal areas.</li> </ol>	<p><b><u>Opportunities</u></b></p> <ol style="list-style-type: none"> <li>1. Clean technologies for livestock and agriculture</li> <li>2. Land categorized for sustainable use for sustainable productive activities.</li> <li>3. Ecological corridors.</li> <li>4. Recovery of the capacity of degraded ecosystems.</li> <li>5. Sustainable use areas for agriculture, livestock, recreation, and nature reserves.</li> <li>6. High tourism potential.</li> <li>7. High potential in multimodal transport systems (land, air, rail, and river).</li> </ol>
	<b>Negative aspects</b>	<p><b><u>Weaknesses</u></b></p> <ol style="list-style-type: none"> <li>1. Anthropic conflicts in the main ecological structure.</li> <li>2. Isolation due to suburbanization processes and expansion of the metropolitan area of Bucaramanga.</li> </ol>

- |  |  |
|--|--|
| 3. Low articulation with municipalities and provinces due to poor and unstable transport infrastructure. | 5. Forest fires  |
| 4. Loss of territorial biodiversity in moors, forests, and wetlands.                                     | 6. Reduction in the availability and quality of water. |
| 5. Overuse and underuse of land.   |  |
| 6. Limited technical development of poultry farming activities.  |  |
| 7. Low diversification of the productive structure.  |  |
| 8. Illegal use of wood and illegal mining.   |  |
| 9. Decision-making disconnected from the needs of the population.  |  |

**Source:** modified from González (2021, p. 61-63).

## 4.2 Rural development strategies for Santander

Rural extension strategies are formulated for the rural development of Santander in order to meet the goals proposed in the 2020-2023 PDEA of Santander, in articulation with the 2015 LDOT of Santander and the 2020-2032 PRC, supported by the 2032 vision of the department and the Sustainable Development Goals (SDGs) of the UN (Table 5).

**Table 5. MAFE rural extension matrix for rural development in Santander**

	<b>STRENGTHS</b>	<b>WEAKNESSES</b>
	<b><u>SO Strategies</u></b>	<b><u>OO Strategies</u></b>
<b>Opportunities</b>	1. Design of production chains under precision agriculture schemes	1. Consolidate the Administrative and Planning Provinces by integrating all the departments' municipalities.
	2. Support for priority chains based on productivity, associativity, participation of actors, and human capacities.	2. Promotion of women's participation in all agricultural activities.
	3. Promotion and sustainable control of natural resources.	3. Training in good agricultural practices, odor management in each productive unit, and new alternatives to have more sustainable production chains.
	4. Formulation of transversal rural development programs that integrate the social, economic, and political	
	5. Training on crop management and sustainable production techniques.	4. Knowledge of the vocation of the soils and their specific function through technical assistance and interaction mechanisms for each producer.
	6. Promotion of agricultural diversification with new products and added value to exotic fruits.	5. Rescue of the ecological balance through recovery and rehabilitation of ecological zones.
	<b><u>ST Strategies</u></b>	<b><u>OT Strategies</u></b>
<b>Threats</b>	1. Development of awareness programs for agricultural producers on environmental impacts.	1. Formation of monitoring groups to support the municipalities.
	2. Space generation is used to create policies that stimulate clean production.	2. Recognition of women as axes of conciliation in territories with armed actors.
	3. Strengthening rural education with technological approaches	3. Transfer of knowledge on the depletion of resources and the negative effect of

and entrepreneurship and innovation.	harmful and unsustainable economic activities.
4. Promotion of the use of alternatives such as self-created bioassays	4. Promotion of the use of waste to create fertilizers that reduce production costs.

**Source:** modified from González (2021, p. 65-66).

Similarly to the rural extension strategies, the territorial planning strategies for rural development in Santander are proposed in order to comply with the guidelines and directives for departmental territorial planning in conjunction with the goals of the PDEA 2020-2023 of Santander and the PRC 2020-2032 of Santander. They are also supported by the planning processes currently being carried out in Colombia regarding the General Territorial Planning Policy (PGOT), in the Administrative Planning Region (RAP) of Greater Santander, and the Department of Santander concerning the Departmental Planning Plan (POD), as well as in the department's Vision 2032 and the SDGs (Table 6).

**Table 6. MAFE matrix for territorial planning for rural development in Santander**

	STRENGTHS	WEAKNESSES
	<b>SO Strategies</b>	<b>OO Strategies</b>
<b>Opportunities</b>	1. Recovery and strengthening of strategic ecosystems through ecological corridors to preserve the department's biodiversity and natural reserves.	1. Strengthening the relationship between the provinces and the metropolitan area of Bucaramanga through citizen participation programs.
	2. Training agricultural and livestock producers in the use of clean technologies in order to safeguard the department's hydrographic network.	2. Integrating the metropolitan area, municipalities, and provinces through multimodal transport systems.
	3. Diversification of production processes according to the soil classification and taking advantage of specific areas for each activity.	3. Development of new production alternatives according to the soil's vocation, considering the preservation and appreciation of ecosystems.
	4. Research and innovation should be developed to properly use natural resources appropriate to regional ecological conditions properly, promoting the efficient and sustained use of ecosystems.	4. Promotion of the technical development and promotion of the agricultural sector to increase its production and productivity.
	5. Articulation of the metropolitan scale model with the needs of the provinces and municipalities.	5. Creation of vertical integration mechanisms between the population and institutions for greater participation in the decision-making process.
	6. Optimization of the solid waste and wastewater treatment process in the department.	6. Restoration of ecological balance through reforestation and conservation programs for natural reserves.
		7. Orientation of the growth and development of agricultural, recreational, or natural reserve activities in the areas with the greatest potential.
	<b>ST Strategies</b>	<b>OT Strategies</b>
<b>Threats</b>	1. Creation of advertising campaigns to raise awareness among the population about the	1. Determining and evaluating natural threats so that projects and programs align

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negative impacts of climate with systemic vulnerability and socio-change on their economic natural disasters.	
activities.	
2. Strengthening risk mitigation programs and reducing vulnerability to disasters.	2. Promotion of responsible consumption of productive resources.
3. Conservation of vegetation cover in high areas of the basins to prevent the removal of masses.	3. Generation of crop alternatives adapted to meteorological phenomena.
4. Determination of natural threats so that the identified projects can reduce the population's vulnerability.	

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**Source:** modified from González (2021, p. 66-67).

## Conclusions

The study confirms the relevance of the systemic approach to the territory implemented by Mosquera et al. (2022) and the warmth of the notion of regional development proposed by Malambo-Jiménez (2018) as essential trends to dynamize the rural sector to the extent that they allow taking advantage of the particularities of the territory and generating added value to the agroecological potential and strategic ecosystem services, in aspects such as sustainable production and tourism. They also offer the possibility of counteracting dynamics that produce negative transformations, such as the improper use of land and available natural resources, which in turn cause environmental, social, economic, and political conflicts.

The comparative analysis of three planning instruments: "the Agricultural Extension Plan (PDEA) 2020-2023 of Santander", 'the 2014 Santander Land Use Planning guidelines and directives' and 'the Regional Competitiveness Plan (PRC) 2020-2032 of Santander' allowed evidencing that although they have equivalent and similar internal components on rural development with a territorial approach in environmental aspects, These instruments have not achieved optimal compliance with their guidelines, actions and goals due to interinstitutional disarticulation, the low political will of those governing and responsible for their implementation, and the scarce support from the State.

The particular diagnosis of the PDEA made from the accountability in the period 2020- 2021 shows the non-compliance of goals related to productivity, associativity, access, and use of ICT in the productive chains prioritized in the PDEA; the guidelines and planning guidelines have not been taken into account for the distribution of the territory which has generated imbalances such as, In the competitiveness plan, despite having such a high index, there are deficiencies in road infrastructure, connectivity, concentration in a single sector, lack of sophistication and diversification, and low territorial development, directly affecting the rural population of the department.

As a result, two important components are related: rural development and land use planning. Rural development seeks to boost sustainable development, deploy human and productive capacities, innovate and establish actions to support producers to generate opportunities such as the inclusion of small producers, facilitate the supply of agricultural institutions, and develop the agricultural sector by the specific characteristics of the department. In turn, land use planning is oriented toward taking advantage of the diversity of natural attractions, strategic ecosystems, hydrographic networks, treatment plants and waste disposal areas, and a variety of climates and geographic locations, which help interrelate the territorial approach with the economic and social and political system and guide Santander's rural development.

The strategies formulated for rural development aimed at rural extension and departmental territorial planning can serve as support to meet the goals proposed in the planning instruments analyzed and contribute to their articulation with the departmental vision and the SDGs in strategic aspects associated with economic competitiveness, environmental sustainability, and social equity.

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