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Territorial innovation management model: a strategy for university teaching, research, and extension

Modelo de gestión de innovación
territorial: estrategia para la formación,
investigación y extensión universitaria

Modelo de gestão da inovação
territorial: estratégia para o ensino, a
pesquisa e a extensão universitária

Abstract

Introduction: this article presents a proposed model for territorial innovation management, taking into account actions and initiatives carried out at the University. **Objective:** to design a territorial innovation management model as a strategy to articulate the processes of education, research, and outreach. **Method:** qualitative, descriptive-propositional study grounded in the interpretative paradigm. Institutional documents related to the key processes were reviewed to obtain information. In addition, 15 managers and 52 faculty members were consulted; participants were purposively selected for their experience in these processes. **Results:** needs were identified regarding coordination among areas, territorial partnerships, knowledge management, incorporation of territorial needs, and monitoring of results. The model was designed with six components: territorial diagnosis; knowledge management; territorial innovation ecosystems; articulation of education, research, and outreach; governance, partnerships, and participation; and monitoring, feedback, and evaluation. **Conclusion:** the proposal provides an organized roadmap to articulate key processes while aligning them with territorial needs. Its implementation will help systematize the planning, execution, and evaluation of university initiatives.

Keywords: university management, territorial innovation, university-territory engagement, knowledge management, university extension

Resumen

Introducción: el artículo presenta propuesta de modelo de gestión de innovación territorial, tomando en cuenta acciones e iniciativas que se realizan en la Universidad.



Objetivo: diseñar modelo de gestión de innovación territorial como estrategia de articulación de los procesos de formación, investigación y extensión. **Método:** estudio cualitativo, descriptivo-propositivo y sustentado en paradigma interpretativo; para obtener información se revisaron documentos institucionales relacionados con los procesos clave. Asimismo, se consultó a 15 directivos y 52 docentes seleccionados intencionalmente por la experiencia que poseen en estos procesos. **Resultados:** se identificaron necesidades sobre la coordinación entre áreas, alianzas territoriales, gestión del conocimiento, incorporación de necesidades territoriales y seguimiento de resultados. El modelo se diseñó en seis componentes: diagnóstico territorial; gestión del conocimiento; ecosistemas de innovación territorial; articulación de la formación, investigación y extensión; gobernanza, alianzas y participación; y seguimiento, retroalimentación y evaluación. **Conclusión:** la propuesta desarrolla una ruta organizada para articular procesos clave y a la vez con las necesidades territoriales; la implementación del mismo ayudará a ordenar la planificación, ejecución y evaluación de iniciativas universitarias.

Palabras clave: gestión universitaria, innovación territorial, vinculación universidad-territorio, gestión del conocimiento, extensión universitaria

Resumo

Introdução: o artigo apresenta uma proposta de modelo de gestão da inovação territorial, considerando ações e iniciativas realizadas na Universidade. **Objetivo:** projetar um modelo de gestão da inovação territorial como estratégia de articulação dos processos de formação, pesquisa e extensão. **Método:** estudo qualitativo, descritivo-propositivo, sustentado no paradigma interpretativo. Para obtenção de informações foram revisados documentos institucionais relacionados aos processos-chave. Ademais, foram consultados 15 gestores e 52 docentes selecionados intencionalmente pela experiência que possuem nesses processos. **Resultados:** foram identificadas necessidades quanto à coordenação entre áreas, parcerias territoriais, gestão do conhecimento, incorporação das demandas territoriais e acompanhamento de resultados. O modelo foi concebido em seis componentes: diagnóstico territorial; gestão do conhecimento; ecossistemas de inovação territorial; articulação da formação, pesquisa e extensão; governança, parcerias e participação; e acompanhamento, retroalimentação e avaliação. **Conclusão:** a proposta desenvolve um roteiro organizado para articular processos-chave e, ao mesmo tempo, atender às necessidades territoriais; sua implementação contribuirá para ordenar o planejamento, a execução e a avaliação das iniciativas universitárias.

Palavras-chave: gestão universitária, inovação territorial, articulação universidade-território, gestão do conhecimento, extensão universitária



Introduction

The Universidad Nacional Francisco Luis Espinoza Pineda (UNFLEP) carries out a wide range of activities in teaching, research, and outreach that reach the different sectors of the territory in which the university operates. UNFLEP is an institution committed to the needs that emerge within its surrounding communities, which raises the question of how best to design mechanisms that connect these territorial demands to the university's core processes. It is likewise necessary to coordinate and strengthen the learning generated through these activities, as well as to determine how the resulting evidence should feed into institutional planning.

Territorial innovation is not confined to the incorporation of technological measures into productive processes; it also encompasses cooperative relationships, collective learning, and the capacity of different stakeholders to draw on available resources and knowledge to address community problems (Caravaca et al., 2005). From this standpoint, the contribution universities can make hinges on their ability to work alongside a range of institutions, public bodies, social and productive organizations, and territorial actors alike. Garrido Rubiano et al. (2016) underscore the importance of this articulation for strengthening territorial capacities, while Jacho Rodríguez (2025) identifies citizen participation, collaborative governance, and sustainability as the conditions underpinning the consolidation of innovation ecosystems.

For the purposes of this study, a territorial innovation management model is understood as a system of relationships, responsibilities, and procedures through which the university incorporates territorial needs into its planning, knowledge generation, and evaluation of outreach outcomes. This conception brings together a range of organizational and operational elements; beyond simply identifying stakeholders and resources, it defines how needs are prioritized, how the university's core processes are coordinated, and how institutional decisions are ultimately fed back into the system. The model is intended to move beyond isolated interventions toward an evidence-based approach (Picado Vanegas, 2015; Guevara Medina, 2023).

The university engages with its surrounding territories by channeling the problems that arise there into its teaching processes, generating research from those problems, and subsequently addressing them in the communities through outreach initiatives. The relationships that emerge from this dynamic broaden the traditional role of universities, positioning knowledge production and application squarely within the context of social, economic, cultural, and environmental needs. Velázquez-Rodríguez (2022) and Salgado Téllez et al. (2025) link this dynamic to academic relevance and applied research. Within this context, UNFLEP is positioned as an actor capable of taking part in processes of territorial innovation and transformation (Mayrena Bellorín & Obregón, 2025).

A management model oriented toward territorial innovation must specify how territorial stakeholders will relate to one another, what resources each contributes, and what procedures will be used to translate needs into institutional responses. Córdova Rosario (2026) notes that this type of management requires integrating capacities and knowledge around shared objectives. Within the university setting, such integration calls for a genuine connection among teaching, research, and outreach, so that the experiences developed together with territorial

actors can yield academic learning, applicable knowledge, and socially relevant solutions (Mayrena Bellorín & Obregón, 2026).

Territorial innovation models can facilitate coordination among the various territorial actors and help identify development opportunities (Pinell Tórrez & Chavarría Zeledón, 2024; Giusto Largaespada et al., 2025; Guido Chávez, 2025). Other studies, in turn, link such models to the strengthening of applied research, knowledge management, and university-society engagement (López, 2015; Cassells Martínez, 2022; Martínez Centeno et al., 2025). None of these contributions, however, go far enough toward integrating academic, research, and outreach decisions within a single management structure, a gap that this study sets out to address.

This study is relevant insofar as it offers criteria for organizing initiatives around clearly defined objectives, actors, and monitoring mechanisms within the university. The proposal is built on the premise that every institutional decision should stem from previously prioritized problems and that the resulting experiences should be documented, evaluated, and drawn upon in the future. This approach responds to the call, raised by Herrera Castrillo (2025), to strengthen evidence-based planning, and links it to the specific academic and territorial characteristics of UNFLEP.

Accordingly, when intercultural considerations and rural development with a territorial focus are taken into account, research can offer more comprehensive approaches that strengthen the university-community relationship (Solís Chavarría, 2024); prior studies likewise show how academic research contributes to territorial development (Arcia Ramírez et al., 2018).

This gap justifies the need for research aimed at strengthening university management through models that integrate teaching, research, and outreach with territorial demands. Accordingly, the present study aims to design a territorial innovation management model capable of articulating the institutional processes of the Universidad Nacional Francisco Luis Espinoza Pineda. The intention is to put forward an evidence-based model that strengthens the link between the university and its territory, providing a conceptual and methodological foundation for future territorial innovation strategies and for reinforcing university engagement more broadly.

Methods and materials

This study was carried out at the Universidad Nacional Francisco Luis Espinoza Pineda (UNFLEP), located in the community of Santa Adelaida, at kilometer 166½ of the North Pan-American Highway in the city of Estelí, Nicaragua. It follows a qualitative approach, which made it possible to explore in depth the meanings, experiences, and perspectives of participants within their natural settings. As Noreña-Peña (2024) points out, qualitative research allows for a deeper understanding of the dimensions that shape the phenomenon under study.

The study followed a descriptive-propositional design at UNFLEP, aimed at

characterizing the institutional conditions surrounding the articulation of teaching, research, and university outreach, and at designing a territorial innovation management model. The descriptive component made it possible to systematize the perceptions of university stakeholders together with institutional information, while the propositional component guided the construction of the model intended to strengthen the university-territory relationship.

The unit of analysis comprised the teaching, research, and outreach processes, along with administrators' and faculty members' perceptions of how these processes relate to territorial needs. A total of 67 participants took part in the study, 15 administrators and 52 faculty members, selected purposively for their experience in academic management, research, outreach, program coordination, or engagement with territorial actors. Participants with knowledge of innovation and university processes were included, while those who declined to participate or could not provide relevant information were excluded.

Data were gathered through qualitative techniques, including document review, interviews, and a focus group. Piza Burgos et al. (2019) note that qualitative techniques facilitate the exploration of participants' experiences, perceptions, and meanings, while Duarte Sánchez and Guerrero Barreto (2024) point out that document review complements these techniques by providing the background and context that enrich qualitative analysis. Combined, these techniques contribute to a deeper and more contextualized understanding of the reality under study.

The document review covered the Institutional Educational Model, the Annual Operating Plan, curriculum macro-planning documents, research and outreach programs, and national policies and strategies related to higher education, innovation, and territorial development. Each document was examined for guidance concerning the university's core processes, the actors involved, and the mechanisms envisaged for engaging with the territory.

Consultations with administrators and faculty members yielded information on the relationship among teaching, research, and outreach, the institutional capacities available, existing collaborative networks, and the conditions required to implement the model. Responses were organized through thematic analysis, grouped accordingly, and finally cross-checked against the findings of the document review to determine their correspondence with the model's components.

The study unfolded across four interrelated stages. The first involved the review of institutional documents; the second consisted of collecting and organizing the contributions of the 15 administrators and 52 faculty members consulted; and the third brought both sources together to identify needs, capacities, and institutional relationships. In the fourth stage, the model itself was designed, with its inputs, management processes, expected outcomes, and feedback mechanisms clearly defined.

The preliminary version of the territorial innovation management model was validated by a focus group of experts, drawing on four criteria: coherence, relevance, clarity, and applicability within the university. The observations gathered were then used to refine the relationships among the model's components.

The model establishes mechanisms for coordinating the university's core

processes, organizing the knowledge generated, and engaging territorial actors in identifying and addressing the problems that arise.

Results and discussion

The findings presented here were organized around the university's identified needs and the design of the territorial innovation management model. This process brought three central issues to light: the absence of a common structure for coordinating the university's core processes, the potential for incorporating territorial problems into the institution's day-to-day work, and the lack of mechanisms for systematizing and evaluating outcomes.

Diagnostic assessment of the need to articulate the model's elements

The information gathered showed that the university already has experience in territorial engagement through agricultural, livestock, veterinary, medical, dental, and mental health outreach days; these activities have provided a solid foundation for building meaningful relationships with the community, producers, and other institutions. Among the difficulties identified were the coordination of the different academic areas, the systematization of experiences, and the ability to connect research projects with the dissemination of their findings.

Territorial engagement should not be limited to the execution of outreach activities; these activities also need to be incorporated into the planning process, channeled into research projects, and fed back into the territories they originated from. Such relationships, moreover, call for a structure capable of supporting the implementation and evaluation of the resulting actions. These connections are what justify treating the articulation of teaching, research, and outreach as a specific, distinct element of the management model.

The need to organize the relationship between the university and its surrounding environment echoes the argument made by Isaksen et al. (2022), who link regional innovation systems to the resolution of social and territorial challenges; similarly, Tripp et al. (2024) note that such systems become more relevant when they are oriented toward concrete problems, while Jeannerat and Crevoisier (2022) add the role played by knowledge and sustainability. Together, these contributions point to the need to move from isolated initiatives toward coordinated processes genuinely connected to territorial needs.

The territorial innovation management model proposes coordination spaces in which the university and territorial actors can jointly prioritize the problems to be addressed; it is expected to help connect decisions on teaching, research, and outreach that are currently made in isolation from one another. The model also promotes closer institutional integration and a sustainable contribution to territorial development.

The qualitative techniques applied made it possible to gather information and clarify the university's role within its territories, a role that ultimately depends on its academic capacities and on the conditions in place for coordinating with the

different participants involved. Putting the territorial innovation management model into practice will therefore require several complementary components, including communication strategies capable of disseminating results.

The territorial innovation management model will make it possible to align the university's processes with the needs that arise across its territories. This is consistent with Thomas and Pugh (2020), who argue that universities contribute to territorial development through teaching, applied research, and social engagement, and with Tödtling et al. (2021), who maintain that regional innovation systems must adapt to new social challenges. Compagnuccia and Spigarelli (2020), for their part, hold that universities contribute to territorial development through teaching and knowledge-generation processes, while Rudskaya et al. (2022) contend that territorial innovation is strengthened when research and economic development are brought together. Finally, Theeranattapong et al. (2021) emphasize that the university-territory relationship is central to the management of regional innovation.

Implementing the model is expected to strengthen coordination with the National Consumption and Trade System (SNCC), facilitating the involvement of strategic actors throughout the different phases of implementation; it is also expected to strengthen coordination with regulatory bodies, so as to ensure compliance with the current legal framework and keep the proposal aligned with national education policy.

Foundations of the territorial innovation management model

- *Knowledge management*

Knowledge management is a key factor that not only drives innovation within the university but also strengthens the university-territory relationship, since it facilitates the creation and transfer of knowledge both within academic institutions and across organizations (García Rodríguez et al., 2020). Regional innovation systems likewise show that knowledge management is an integral part of the processes that connect ecosystem actors and promote entrepreneurship and territorial growth (López-Rubio et al., 2020). Finally, the transfer of knowledge from the university to other sectors helps to strengthen innovation that is contextualized to the demands of the digital and organizational environment (Aguayo Saltos & Lozano Jaramillo, 2025).

- *Inclusion and gender equity*

Integrating a gender perspective strengthens the university's contribution to territorial development by promoting a more equitable distribution of the benefits derived from innovation and by advancing principles of diversity, inclusion, and sustainability at the regional level. Territorial innovation approached through a lens of inclusion and gender equity encourages the equitable participation of women and underrepresented groups within the university, strengthening creativity and collaboration throughout the innovation process (Restrepo et al., 2021). Mainstreaming a gender perspective across teaching and outreach, moreover, improves the university's capacity to respond to territorial challenges (Vila Merino & Álvarez Jiménez, 2025), while a pluralistic approach to gender in research contributes to innovation that is more responsible and better contextualized (Latorre Ruiz et al., 2025).

Cultural and creative approach

This approach allows the knowledge, cultural practices, and creative capacities generated by the university to be translated into innovative solutions that enhance sustainability, strengthen collaboration among local actors, and support the territory's economic, social, and cultural development. A cultural and creative approach to territorial innovation enhances universities' ability to design projects that drive local development through creative and cultural industries (Badilla Agüero, 2025), to use creative processes as a driver of sustainable innovation in regions (Faraone, 2022), and to integrate creative dynamics into territorial innovation systems in ways that strengthen social and economic cohesion (Solis Navarrete, 2015).

- *Climate change adaptation and territorial resilience*

As one of the model's strategic axes, this dimension makes it possible to align teaching, research, and outreach with the socio-environmental needs of the territory. Segura Guerrero et al. (2022) argue that adapting to climate change strengthens the resilience of territorial systems by integrating local strategies oriented toward the region as a whole. Along similar lines, Valverde Blanco et al. (2022) indicate that teaching and research in climate management contribute to building the competencies key actors need for socio-environmental resilience. Finally, Cedeño Frías and Camarena (2025) suggest that environmental education driven by the university strengthens both institutional and community capacity to confront the effects of climate change in a sustainable manner.

- *Participatory and civic approach*

This approach aligns the teaching, research, and outreach processes with the territory's actual needs, strengthening collaboration with local actors and communities. A participatory, citizen-centered approach reinforces local governance and brings the community into the planning and implementation of territorial innovation strategies (Vílchez-Vargas, 2023); it also helps to improve the effectiveness of public policy and to foster shared social responsibility between the university and the citizenry (Aquiye Loayza et al., 2021). In doing so, it promotes transparency, inclusion, and sustainability in both university and territorial management (Mariñez Navarro, 2022).

- *Ethical and humanistic approach*

An ethical and humanistic approach orients the model's decisions toward respect for people, inclusion, and shared responsibility for territorial problems; in practice, this means that the priorities selected, the knowledge produced, and the results evaluated must all involve broad participation and transparent criteria. Hernández Cruz and Hütt Herrera (2024) establish a connection between community participation and the strengthening of local governance, while the co-production of knowledge between citizens and universities drives collaborative solutions for complex territorial development contexts (Leguía-Cruz et al., 2024).

The territorial innovation management model matters for the university because it aligns learning processes with the real needs faced by communities,

helping to strengthen the university's social relevance. Through the model, teaching can be integrated with research and outreach activities capable of responding to territorial problems, generating innovative solutions with a greater economic, social, and environmental impact.

Implementing the model will contribute to training professionals with contextualized competencies, sharper critical thinking, and a stronger ethical commitment to the processes associated with sustainable development. It can also promote collaboration between the university and the different sectors of society (productive, governmental, and community-based) while consolidating the institution's role as a strategic actor in territorial transformation, one that favors knowledge transfer, innovation, and the building of local capacities.

UNFLEP has already undertaken a number of actions in support of community development, including the organization and delivery of agricultural, veterinary, medical, mental health, and dental outreach days across various territories, carried out through close interinstitutional coordination with producers and state institutions.

Cross-cutting axes of the territorial innovation management model

- *Institutional strategic vision*

This dimension is highly relevant to the model's implementation: the university needs a strategic vision capable of guiding it toward a transformation that systemically integrates teaching, research, and outreach with the dynamics and needs of the territory. Higher education institutions must be able to generate relevant knowledge, drive innovation with greater social impact, and strengthen alliances with public, private, and community actors.

Institutional strategic vision guides action and safeguards sustainability, given that strategic planning is a tool capable of helping any organization sustain its productivity, educational institutions included (Núñez Esqueda, 2023); strategy, structure, and culture, in turn, are cross-cutting elements of strategic management that shape institutional continuity (Mejía Zambrano et al., 2022).

The university's strategic vision provides the framework that allows the management model's actions to remain consistent over time rather than depend solely on individual initiatives. Its central function is to embed territorial innovation within the planning process, assign responsibilities, and connect objectives with outcomes, all of which point toward an organizational culture grounded in quality, social responsibility, ethics, and participation.

- *Territorial innovation ecosystems*

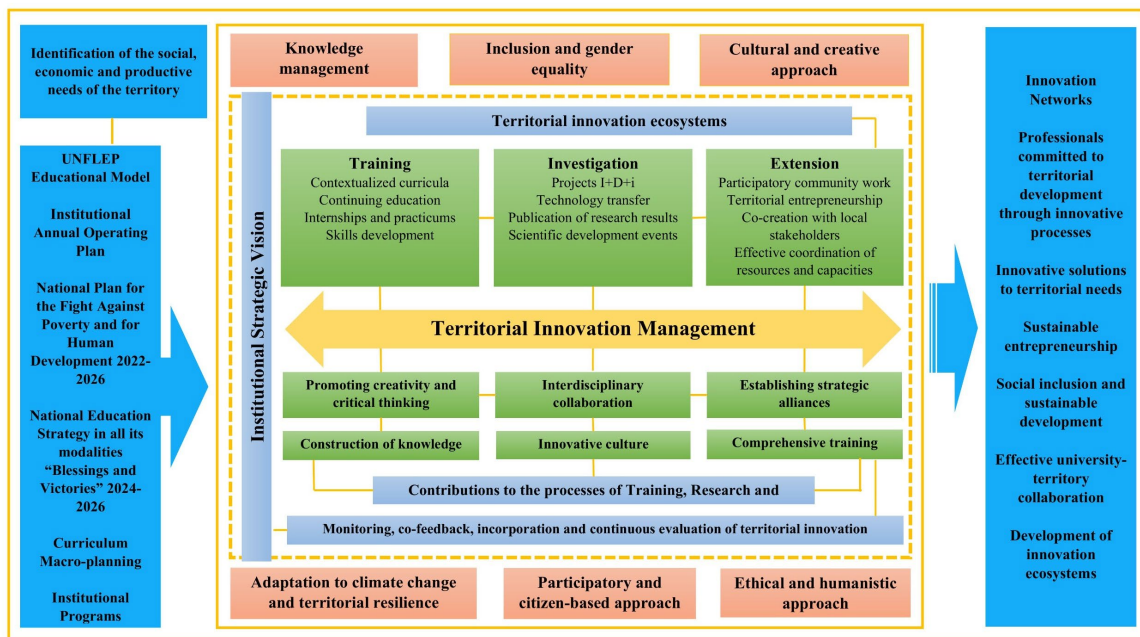
Within the management model, the territorial innovation ecosystem constitutes a space of relationships among the university, institutions, the productive sector, and communities; each of these actors contributes knowledge, resources, or capacities that can be applied to the problems identified. The university plays a particularly important role in facilitating connections between territorial contributions and the teaching, research, and outreach processes; the ecosystem is thus conceived as a mechanism for agreeing on courses of action, producing knowledge, and following up on the resulting commitments.

Territorial innovation ecosystems are dynamic, collaborative environments that bring together knowledge, actors, and institutions to strengthen sustainable local development. Reina-Rozo (2022) frames community-based innovation ecosystems as a setting for socio-technical co-production grounded in collaboration and co-creation among actors, a view consistent with Figueroa-Egurrola and Wong-González (2023), who emphasize that regional innovation systems rest on the interaction between territory, knowledge, and actors. These systems are also shaped by key factors such as policy, education, and technology, which drive the relationships among participants in innovative activities (Arce-Medina et al., 2019).

Figure 1 below presents the proposed territorial innovation management model, together with its underlying foundations and the articulation of teaching, research, and outreach, which together bring all institutional processes into play and support the desired outcomes in students' comprehensive formation.

Figure 1

Proposed territorial innovation management model



Source: Authors' own elaboration.

- *Monitoring, co-feedback, incorporation, and continuous evaluation of territorial innovation*

Territorial innovation ecosystems are dynamic structures in which diverse actors interact to generate sustainable local development (Contreras Varas, 2024). Co-feedback among participants facilitates the transfer of knowledge and the generation of solutions tailored to territorial demands (Forlani & Picciani, 2026).

Bustillo López et al. (2025), for their part, note that knowledge management fosters cooperation among institutions, businesses, and communities. Building on these contributions, the model incorporates the systematization of experience and the return of results to stakeholders as ongoing working practices.

Within the model, monitoring, feedback, and evaluation are each assigned a distinct function: monitoring makes it possible to compare the activities carried out against the goals originally planned; feedback gathers stakeholders' assessments and supports decision-making; and evaluation examines outcomes across the university's different areas of work. All the information generated through this process is meant to feed back into future planning, with the model occupying a central place in the resulting learning cycle.

- *Contributions to teaching, research, and outreach*

Bringing teaching, research, and outreach together allows territorial needs to be addressed through the university's different capacities. In teaching, identified problems can be turned into learning experiences and practicums grounded in each territory; in research, they translate into applicable questions and projects; and in outreach, they can be addressed through joint action with local actors. This is consistent with Mayrena Bellorín and Obregón (2025), who describe the university as an agent of social transformation, and with Campo Sarria (2023), who links university articulation to participation and the joint production of knowledge.

The management model will help organize the relationship among the university's three core processes by establishing which territorial needs have been identified and prioritizing them together with the relevant actors; this sequence, in turn, will contribute to strengthening both institutional and territorial capacities.

Components of the proposed model

Triangulating the document review with the consultations carried out among faculty made it possible to link the identified needs to a specific operational function of the model: the difficulties encountered served to prioritize problems and gave rise to the territorial diagnostic component; the need to record and transfer learning underpinned the knowledge management component; and the need to coordinate with other actors was incorporated through the innovation ecosystems component. The articulation of teaching, research, and outreach was likewise built into the model, so that all of its components could work together effectively.

Table 1
Components of the territorial innovation management model

Component	Operational purpose	Expected products	Suggested indicators
Territorial diagnosis and prioritization	Identify problems, assets, and opportunities together with local actors.	Stakeholder map; portfolio of prioritized problems; opportunity matrix.	Number of prioritized problems; actor participation; annual update of the diagnostic assessment.
Knowledge	Capture, organize,	Project repository;	Knowledge products

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Component	Operational purpose	Expected products	Suggested indicators
management	and transfer learning and results.	best-practice records; feedback reports.	transferred; use of results in research and teaching.
Innovation ecosystems	Bring together the university, the state, the productive sector, the community, and other organizations.	Territorial networks; collaboration agenda; agreements.	Number of active partnerships; co-created actions; continuity of participation.
Teaching, research, and outreach	Turn territorial problems into learning experiences, research projects, and outreach actions.	Interdisciplinary projects; contextualized practicums; applied solutions.	Courses involved; applied projects; participating students and communities.
Governance and participation	Define those responsible, coordination rules, inclusion mechanisms, and accountability.	Management committee; protocols; communication plan.	Monitoring meetings; inclusive participation; commitments fulfilled.
Continuous evaluation	Measure progress, results, and needed adjustments.	Indicator dashboard; periodic reports; improvement plan.	Progress toward goals; satisfaction of territorial actors; relevant social, economic, or environmental outcomes.

Source: Authors' own elaboration.

Model implementation strategy

Implementation of the model was organized into three stages. The first consists of a technical review of the proposal, during which experts examine the indicators and conditions required for its application. The second involves a pilot phase built around the prioritized problems, with responsibilities, resources, goals, and timelines assigned accordingly. The third stage covers evaluation of the pilot, documentation of lessons learned, and gradual scaling to other areas of the university. This sequence helps reduce the risk of adopting a merely declarative model and supports evidence-based decision-making.

Table 2

Stages in the implementation strategy of the Territorial Innovation Management Model

Stage	Main activities	Those responsible	Evidence of completion
Validation	Expert review, stakeholder feedback, and adjustment of the operational matrix.	Academic Affairs, Research and Innovation, Outreach, and territorial representatives.	Validation minutes; adjusted version of the model; indicator matrix.
Pilot phase	Application to a prioritized problem; articulation of courses, projects, and outreach actions.	Interdisciplinary team and territorial partners.	Work plan; activity records; knowledge products.
Evaluation and scaling	Analysis of results, feedback to stakeholders, improvement, and decision on expansion.	Model management committee.	Evaluation report; improvement plan; scaling decision.

Source: Authors' own elaboration.

Conclusions

The results obtained throughout this study show that the territorial innovation management model will contribute to the articulation of teaching, research, and outreach. When these processes are integrated systemically and oriented toward community needs, the university is able to increase its social relevance and its capacity to respond to the various problems facing its territories.

The study also makes it possible to design a territorial innovation management model oriented toward aligning teaching, research, and outreach with the needs of the territory. The proposal draws on categories derived from the document review and from consultations with administrators and faculty, particularly around cross-functional coordination, knowledge management, partnerships, participation, and evaluation.

The model provides an operational pathway built around territorial diagnosis, the innovation ecosystem, the articulation of core processes, governance, and continuous monitoring. Its main contribution lies in offering mechanisms, expected products, and suggested indicators for connecting university initiatives to problems and opportunities prioritized jointly with territorial actors.

Implementing the territorial innovation management model will support the formulation of interdisciplinary projects, the creation of spaces involving strategic actors, and the incorporation of different learning methodologies grounded in territorial needs. Teaching must respond to the productive and social demands of local residents, research must generate applicable solutions, and outreach, in turn, must consolidate the processes through which knowledge is transferred.

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Declaration of author responsibility

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