

The Challenge of Territorial Systemic Analysis for Peacebuilding in Colombia*

Análisis sistémico de los territorios, un desafío para la construcción de la paz en Colombia

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Artículo de investigación

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ABSTRACT

This paper explores the need to structure a systemic analysis of the Colombian rural territory, as a critical challenge in the context of public land policy implementation and peace building in Colombia. It explores the conditions for the development of an articulating scenario for governmental institutions and democratic involvement in land management, from the perspectives of scientific and technological innovation, by means of the following guiding questions: What are the challenges for the government and civil society to face the

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problem of access and use of rural land in the process of a fair and responsible governance of the territory? What is the functionality of three public policies for the achievement of territorial peace: Multipurpose Cadastre, Social Ordering of Rural Property and Land Administration System? The analysis is based on a qualitative and descriptive approach; on the one hand, it provides an interpretation of the experience of specialized professionals, who, through in-depth interviews, report on the use of geospatial technologies in land administration. On the other hand, it assesses the evolution of the legal-normative framework and the documentary analysis constructed. The outcomes describe the analytical value for the contemporary country of having a geospatial ecosystem, a crucial groundbreaking tool in the comprehensive knowledge of the territory, which needs to be intervened with efficiency and equity, in the interest of strengthening the institutions that manage land and peace, towards a sustainable development.

Keywords: Innovation, Land governance, Peace building, Public policy, Rural development.

RESUMEN

Este artículo explora la necesidad de estructurar un análisis sistémico del territorio rural colombiano, considerando como un desafío crítico la implementación de políticas públicas de tierras y la construcción de paz en Colombia. Examina las condiciones necesarias para desarrollar un escenario que articule las instituciones gubernamentales y fomente la participación democrática en la gestión de tierras, desde las perspectivas de la innovación científica y tecnológica. Las preguntas orientadoras son: ¿Cuáles son los desafíos para el gobierno y la sociedad civil en cuanto al acceso y uso de tierras rurales en un proceso de gobernanza justa y responsable del territorio? ¿Cuál es la funcionalidad de las tres políticas públicas para lograr la paz territorial: Catastro Multipropósito, Ordenamiento Social de la Propiedad Rural y Sistema de Administración de Tierras? El análisis se basa en un enfoque cualitativo y descriptivo. Por un lado, proporciona una interpretación de la experiencia de profesionales especializados, quienes, a través de entrevistas en profundidad, informan sobre el uso de tecnologías geoespaciales en la administración de tierras. Por otro lado, evalúa

la evolución del marco jurídico-normativo y el análisis documental existente. Los resultados destacan el valor analítico para el país contemporáneo de contar con un ecosistema geoespacial, una herramienta innovadora crucial para el conocimiento integral del territorio. Esta herramienta necesita ser utilizada con eficiencia y equidad para fortalecer las instituciones que gestionan la tierra y la paz, con miras a un desarrollo sostenible.

Palabras clave: construcción de paz, desarrollo rural, gobernanza de la tierra, innovación, política pública.

1. INTRODUCTION

The aim of this paper is to explore the importance of introducing a systemic analysis of territories in contemporary Colombia, where the process of innovation and technological progress is being introduced at the level of implementing three public policies for territorial management in the country: the Multipurpose Cadastre - MC, the Social Ordering of Rural Property - SORP and the Territorial Administration System - TAS, since they can contribute to the strengthening of a responsible and inclusive governance of the territory, within the framework of peace-building.

In this context, the country needs to solve the problem of informality and inequity regarding access to land, since it has mainly affected rural territories. The Rural Agricultural Planning Unit (2019) estimates that in Colombia there is 52.7% informality in land tenure, which means that the rural population does not have clear property rights. Furthermore, it estimates that 30% of the nation's territories do not have certainty about the location of their land. In addition, 66% of the national territory is out of date at the cadastral level (954 of the country's municipalities).

This fact is evidence of the country's need for groundbreaking tools for the collection of updated information on the territory, which would serve as a basis for development and the SORP. This would allow for the restitution and regulation of land use and property rights, in order to achieve formal land tenure, close social gaps in the territories, as well as consolidate a transparent land market, a productive and sustainable countryside that will improve the quality of life of rural populations (Neva, 2014).

Consequently, new technological applications of geospatial information offer the opportunity to manage the relevant knowledge of the conditioning and determining factors in the territories with a comprehensive approach, which enables a systemic analysis of the territories, both to assess needs and conflicts and to make well informed and accurate decisions.

This paper's approach is both reflexive and phenomenological. It is based on in-depth interviews with nineteen professionals with extensive experience in the field of land administration. This instrument was favored because it allowed, by means of an empirical procedure, a closer approach to the real and current context, through the contrast between the documentary and normative analysis, the experience and the disciplinary skills of the interviewees. Likewise, because it enabled communication and interaction with the interviewer, through a detailed script of open questions, which made it possible to share the common meanings and the historical memory of the professionals, generating an atmosphere of trust, conducive to understanding the reality studied on land governance and peace building.

In this sense, this paper provides an approach to the problem of inequity in the distribution of rural land in Colombia that stems from a broader issue, in the global socio-economic order, which is mainly affecting Latin American countries, as a result of the current capitalist market, characterized by the accumulation of wealth, dispossession and land grabbing, in the hands of those who hold power or illegal groups that dispute the territories of geostrategic location for the rentier business, either from drug trafficking or from the extractivism of non-renewable natural resources. (Göbel & Ulloa, 2014; Pérez-Rincón, 2014; Rodríguez et al., 2017; Rubio et al., 2023; Wallenius, 2017).

Hence, land governance is raised as an issue of global interest, as part of the challenge of planning and implementing public policies with the capacity to reduce inequality gaps in this context, by addressing the Sustainable Development Goals related to the alleviation of hunger, rural poverty, climate action and the promotion of peace (Cazorla & Ríos; Food and Agriculture Organization of the United Nations [FAO], 2023; Vidal Misas et al., 2017; World Bank, 2013).

The first part of this paper provides context on the importance of confronting the historical invisibilization of the rural territory and its social actors, as well as the need to innovate in land administration processes. The second part establishes the functionality and evolution of three public policies in this study, which are crucial for territorial and environmental peace. The third one reflects on knowledge management and its use in conflict resolution, towards peace building in the post-agreement stage. The final reflections and conclusions are presented as an academic contribution to the national and local government in terms of public administration, deepening of democracy and governance of the territories.

2. METHODOLOGY

The methodology follows a qualitative, descriptive approach. It is developed on the basis of documentary analysis and the interpretation of in-depth interviews, from a constructivist perspective, which resorts in this research to systematic criteria and contrasting processes, to observe in detail the reality of the context, to specify the characteristics of social interaction in today's world with great challenges at the institutional and technological level. (Bernstein, 2011; Castells, 2006; Cuenya & Ruetti, 2010; Dewey, 2022; Sabino, 2014).

The selection criteria of the nineteen participants were based on their professional experience of more than ten years in the land administration sector, with knowledge on the use of geospatial information technologies in Colombia. The number of people was defined to recognize the value and richness of the specific information, in accordance with the purpose of the research, to achieve a deeper understanding of the meanings contributed by the participants from their own experience, generating new knowledge.

The in-depth interviews made it possible to explore the reality of the phenomenon with a broader vision, in the review of the normative legal framework and in the documentary analysis of the public policies under study, since they contributed to the understanding of the challenges for knowledge management in the rural territory, regarding peace building. The understanding of the social context is approached in an comprehensive and critical way, by means of

qualitative data analysis techniques, with the purpose of giving significance to the study, in terms of its legitimacy and trustworthiness (Azuero, 2019; Martínez, 2006; Ricoy, 2006). It should be noted that the ethical implications of the interviews conducted in this research do not involve any risk for the participants, since it is determined that the purpose of the collaboration is academic and social.

It is worth highlighting that among the main roles played by the participants, there are different areas of intervention in land management: land planning; land valuation; public land policy; land restitution; formalization; SORP; MC; property management; real estate administration; geomatics, research and land management in road infrastructure projects, hydrocarbons and the energy sector, among other applications.

The interviews make an important contribution to the understanding of the context in which the professionals have worked: the National Planning Department - DNP; the National Administrative Department of Statistics - DANE; the National Land Agency -ANT; the Agustín Codazzi Geographic Institute - IGAC; the Superintendence of Notaries and Registry -SNR; the Land Restitution Unit - URT, among other entities that lead the public policies, object of this study, which allows a closer approach to the analyzed reality.

The techniques and tools for the analysis of qualitative data were developed in a matrix for the systematization of documentary information, together with the design of a script of guiding questions for the interviews, which support the process of triangulation and analysis of the structuring content of the study, which seeks to understand the significance of the advances and limitations in the implementation of public land policies. In this process, the following are determined as units of analysis: rural land governance, government challenges for a governance system of the Colombian territory and peace building. The advantage of achieving a systemic analysis of the territory is interpreted dialectically.

3. THE CHALLENGE OF INNOVATION IN RURAL LAND GOVERNANCE

It is relevant to consider, at a global level, how in the 1990's, concern for the control and protection of natural resources generated greater

interest in regulating the way land is managed and administered, given its essential value for subsistence and the preservation of human dignity. Thus, the struggle for land constitutes a worldwide problem that involves the concept of governance, associated with the use of natural resources, power and wealth in a context of violation of both human rights and territory, in the face of the rise of the particular interests of the most privileged, who seek to obtain land at any price in order to monopolize it (Del Valle Calzada, 2022).

Circumstances that allow us to visualize the importance of generating public policy strategies for the protection and guarantee of these rights, in the confrontation of conflicts, towards the construction of an environmental and territorial peace, during a critical post-conflict stage, which seeks the reconstruction of society (Cuenca et al., 2018).

Despite the different policy efforts and agrarian reforms of the last six decades in Latin America, there is still an important level of inequality in land distribution, informality and land wastage, which endangers the living conditions of indigenous, peasant and Afro-descendant populations and rural women in particular. Together, these facts deepen territorial conflicts as they threaten food security and environmental sustainability, which generates the resistance of the inhabitants who come out in defense of their territories (International Land Coalition – Latin America and the Caribbean, 2019).

Therefore, an attempt to understand the territory in the exposed problematic requires a multidimensional systemic analysis: economic, sociocultural and environmental, contextualized in the hegemonic system in which it develops, characterized by the accumulation and deepening of the accumulation of unproductive lands, in favor of the interests of those who hold political and economic power and influence through corruption, in the process of acquisition of resources and in the dispossession of communal lands (Gómez et al., 2020; Grenni, 2019).

Changing this scenario therefore also requires to be understood through a critical analysis of geo-historical identities, inherent to a perspective of political ecology in Latin America and the relationship of man with the land, in the environmental extractivist model, whose challenges represent a new socio-ecological vision of the

territories, in addition to the attention to institutional relations, in the local and global context of peace building in nations (Alimonda et al., 2017).

Consequently, the historical recognition of the invisibilization of rural inhabitants, which has been shaped in a system of subordination of Latin American communities, is essential. It needs to be studied at a constructive level, from a pluriversal thinking that includes the rupture of the paradigms established worldwide, because they deepen inequality in the territories, due to ethnic, social class and gender discrimination, giving rise to the delegitimization of cultural heritage and land, to the detriment of the Latin American countries' development (Grosfoguel, 2006; Dussel, 2007; Lugones, 2018; Rincón et al. 2015).

The challenge, then, implies seeking different alternatives of analysis for territorial development, based on an epistemology specific to the regions, a critical and reflective thinking on the logics of contemporary development, towards the redefinition of social and environmental relations. Focused on nature and with a more human sense, in a context of dialogue and plurality (Gudynas, 2014; Santos, 2010). These conditions would allow the actors of the territory to work on the construction of their own reality, in order to transform it and directly influence its evolution (Leff, 2017; Noguera & Toro, 2016).

The land problem in Colombia is stressed mainly in the geostrategic zones of the rural territories, for example, Chocó, Nariño, Norte del Santander, Antioquia, Cauca, Valle del Cauca, where the armed conflict takes place and, derived from this, the dispossession, the recruitment, the confinement, the disappearances, in a confrontation with those who defend their territories (Colombian National Center of Historical Memory [CNMH], 2018; Special Jurisdiction for Peace [JEP], 2022; Institute for Development and Peace Studies [Indepaz], 2023).

Assuming this problem calls for the implementation of transforming policies in land distribution, valuation and development in order to reduce violence and rural poverty, where power relations and the commodification of nature are inscribed, which have reconfigured the culture and deepened territorial conflicts associated with the

social and environmental crisis of the country, which demands the generation of different alternative solutions (Rodríguez et al., 2017; Cuenca et al., 2018).

This part of the reflection shows how global problems aimed at reducing poverty, hunger and inequality gaps are interconnected with the issue of effective land governance. For the case of Colombia, the Voluntary Guidelines for Land Governance -VLGT, established by the Food and Agriculture Organization of the United Nations (FAO), have been defined as a strategy to comply with the Sustainable Development Goals - SDGs, related to the construction of peace, justice and solid institutions; as well as action for climate change, within the framework of transparency and democracy, with a people-centered approach and innovation, for the monitoring of land (FAO, 2023).

Advancing in this purpose requires the nation to deploy an innovative public policy strategy focused on subjects and knowledge management; on institutional functionality and citizen participation, for the systemic dimensioning of the territorial reality, within the framework of the peace process. This means ensuring a multicultural ordering of the State in a post-conflict scenario, with the inclusion of peasants and ethnic groups, as agreed in the Havana Agreement, in order to overcome obstacles and develop lessons learned in a process that is still under construction (Caballero et al., 2022; Chavez, 2018).

Therefore, the implementation of the SORP public policy is an extraordinarily complex challenge when there is not enough cadastral information available to carry out the required institutional processes. Hence, the MC as the basis of the TAS is the core of the ANT's actions in reference to the SORP; this entails high expectations and institutional costs that require the confrontation of failures associated with various factors in the intervention processes, such as lack of commitment, persistent exclusion of local actors in the territories, as well as contradictions between the different levels of government and institutions (Tafur et al., 2022).

In this regard, it is imperative to have tools that facilitate well informed decision making on rural territories; therefore, the MC and the TAS strategies in Colombia are considered groundbreaking

elements that involve the updating of territorial information of impact on titling and technological modernization, so that those who make decisions on the territory have open access to the information required for the understanding of territorial dynamics in terms of development, risk management and conservation of natural resources (Presidency of the Republic, 2021; Vergara, 2020).

This confirms that land policies should aim to provide reliable, updated and accurate information on the territories. To offer and have better data for evidence-based decision making (Cotula et al., 2018). Along these lines, the challenge of achieving land governance implies an analysis approach that considers conflicts in their global reality, attention to climate change and unsustainable food systems; guaranteeing protection of land grabbing, and in the protection of land tenure and the rights of all actors in the territory. This fact was reinforced at the COP26 summit in the city of Glasgow in 2021, in which different countries committed themselves to contribute with economic resources to support this process, in order to advance in the protection of biodiversity at a global level (Oettle et al., 2022).

Consistent with this challenge, the national government has designated the city of Cali as the venue for the COP16 in 2024, the main international meeting for biodiversity, as it is considered one of the most representative regions of Colombia in terms of its variety of natural resources and its proximity to the biodiversity-rich Pacific. Around 12,000 experts from 190 countries will attend this event, as a reconciliation event in a territory that involves indigenous communities and different government sectors, to promote the protection of biodiversity at a global level and debate on the role and future of nature on the planet.

This is an opportunity to make visible a territory with a geographical strategic location on the planet, with the natural wealth that the Colombian Pacific represents (Presidency of the Republic - Colombia, 2024). It is important for the debate that may arise on the worsening of conflicts in these biodiverse territories, since it enables those who exercise power, the intercontinental mobility of illicit crops, natural resources such as coal, gold, oil, among others, product of mining or arms smuggling, in a context of illegality and corporate capture of the Colombian state (Vargas et al., 2023).

In summary, it is significant to understand innovation as an alternative that combines creativity and collaboration from new formulas, systems and resources, to contribute to the resolution of conflicts in regional and local contexts; a set of dynamics that implies the generation of initiatives, the articulation of an effective institutional ecosystem in the processes of monitoring and compliance with regulations, in coherence with the functions of the entities that administer the territory, with an emphasis on knowledge management and the generation of public value (Egaña, 2019).

As a whole, the reflections shown confirm the statements made by the interviewees in this study, which prove the importance of deploying policies and strategies that contribute to the change of reality, by creating a scenario that enables the systemic territorial analysis, within the framework of peace building, through the involvement of social agents and the use of their worldview and knowledge about the land.

Consequently, the participants in the interviews of this research reveal that the country needs to work on strengthening its institutions, based on an innovative governance system that functionally intervenes in the territory, which would involve a change of political, social and cultural paradigms to assume the historical responsibility for responsible land governance, especially in the rural territory.

The analysis of the participants' narratives also made it possible to verify the association between the documentary information and the practice of the participants; for example, they point out that the written standard does not always correspond to the actions carried out in the territories. The interview instrument made it possible to generate collective knowledge on the meaning of effective land governance, which according to their opinions should be based on a clear definition of the rules and roles of those who manage the land and those who use it. They reveal the need to transform the fragmented vision historically used to address the territories, for a joint vision in which institutions are effectively articulated to guarantee quality information available to all in the administration process.

3.1. THE FUNCTIONALITY OF THREE PUBLIC POLICIES: MC, SORP AND TAS, TOOLS FOR PEACE

Considering the aforementioned problems regarding the land conflict in Colombia and as described in CONPES documents 3958 of 2019 and 4007 of 2020, the functionality of these three public policies lies in the orientation of a strategy for the effective management of the territory, within the framework of compliance with the Havana Agreement, with respect to the Comprehensive Rural Reform -RRI. This implies facing the historical problem of an inefficient rural cadastre, which lacks reliable, timely and updated information that allows for a complete vision of the territorial reality regarding the tenure and use of the nation's land, basic knowledge necessary to achieve rural development, the non-repetition of the armed conflict and the construction of peace (Presidency of the Republic, 2021).

In this regard, through the regulatory evolution of land administration in the last ten years, some governmental efforts have been made to lay the foundations for the implementation of public policies of the MC, the SORP and the TAS, in order to promote the massive formalization of rural property, the management of environmental resources and boost rural productivity, within the framework of the agenda for peace.

These efforts describe a series of relevant structural changes in terms of regulation, operation and resource management; enabling instruments and information strategies among which stand out milestones such as: the creation of the National Land Agency -ANT, for the execution of the OSPR policy (Decree 2363 of 2015); the adoption of measures for the implementation of the Comprehensive Rural Reform (Decree Law 902 of 2017); the regulation of the Colombian Spatial Data Infrastructure - ICDE and the National Statistical System - SEN (Decree 2404 of 2019); the Law on the Suppression of Paperwork (Decree Law 2106 of 2019).

Likewise, the modification of the structure of the Agustín Codazzi Geographic Institute (Decree 846 of 2021) and of the Superintendence of Notaries and Registry (Decree 1554 of 2022). In addition to some guidelines materialized mainly in 2023, on the regulation of cadastral management as a public service (Law 2294 of 2023); the definition of the operation and conformation of the

ICDE governance for institutional articulation (Resolution 899); the adoption of the LADM COL model for the interoperability of the TAS (Agreement 002); which ends with a very important advance towards the recognition of the ethnic and cultural diversity of the nation, with the adoption of transitory measures for the public policy of the MC, in relation to the protection of ancestral and traditional indigenous territories (Resolution 388).

Thus, in the timeline described above, through the study of the legal-regulatory evolution, especially in the last year, a collective and coordination work is evidenced, among those who manage territorial information and lead the implementation of public policies object of this analysis (IGAC, SNR, ANT, URT and DNP) in order to model the reality of territorial administration, in which interoperability is essential to share specialized information, in a systemic way, and to define Legal Territorial Objects¹, within an environment of geospatial data interaction, to structure an overall physical, economic and legal vision of the territory.

These public policy strategies are oriented towards innovation and modernization of state administration. They embrace practices of the international order ISO19152:2012 on a land administration model, called LADM, which in the Colombian context is called LADM-COL, and was adopted since 2018 by entities that manage land: IGAC and SNR, in order to achieve a common language and technological articulation, which guarantee the legal security of the right to real property (in a coherent manner with the public registry), as a fundamental tool for fiscal, local strengthening and primary input for Colombian territorial planning and ordering (Swissphoto Technical Team, 2017).

The importance of having technological innovation scenarios to make better decisions about the territory is evident in this sense, if it is taken into account that the achievement of an efficient SORP requires the use of the geo-prospective instrument, which

¹The Legal Territorial Objects have been preliminarily identified by the ICDE and the DNP, these classify ten available thematic areas (environmental, agricultural, threat and risk, administrative areas, cadastre, geological planning, infrastructure, marine-coastal and mining-energy) for the consolidation of quality geographic information. Correspond to portions of the territory with legal effects of public or private law, whose existence arises from a law or administrative act of the State or private ownership (ICDE, Colombia, 2023).

implies a geographic approach, based on the integral conception of different territorial dimensions, at economic, social, environmental, cultural and political levels, to facilitate the understanding of the relationships, dynamics and interdependencies that give meaning of equity, social and ecological function to the property (Unit for Agricultural and Rural Planning, 2014).

The challenges for Colombia at the institutional level involve configuring an optimal information base for the development of a modern and efficient spatial data infrastructure, with the capacity to face the challenges posed by post-conflict and the promotion of productive development in the countryside. Consequently, the implementation of the public policies of the MC and the SORP and the TAS is intended to contribute to the legal security of rural land tenure and the regularization of the market, for an efficient management of the territory towards the sustainable development of the rural regions of the country. It also allows the creation of an environment that facilitates the coordination of the social actors that manage the territory.

In this legal context, the establishment of the Land Administration System -TAS, refers to the infrastructure that constitutes the support for the implementation of land policies, which seeks to evolve towards a broader vision, such as that of the territory. Thus, the MC transitions from an administrative approach to a social one, which gives it the character of a public service, as the basis of the TAS, where three axes converge in a systemic manner: governance (legal and coordination framework), knowledge management (standardization, change management and continuous improvement) and technology management (tools, management mission entities), within the framework of e-government efficiency (Presidency of the Republic, 2021).

This systemic vision contributes to the land administration value chain and is currently in an early stage of development in the country. It has gradually evolved to achieve complementarity and coordination among institutions and actors in addressing the priorities of the system. It allows for articulated interaction, key to informed decision making, which has an impact on the decrease of intermediaries, the achievement of the territories' goals and the follow-up of indicators (Mojica, 2022).

The existence of the legal system in a political process is therefore justified, as a regulator of power relations, balance and stability of government as it adapts to real circumstances and transformations, due to the evolution, the complexity of systems and the continuity of their development dynamics (Easton, 1992). In this historical evolution, the innovation in techniques and regulatory adjustments for the implementation of public policies of this analysis arises, in the face of the challenge generated by the lack of knowledge, diverse expectations, disinterest or resistance to a new legal system, as a consequence of misinformation, lack of communication or lack of disclosure by the agents, who are responsible for pointing out its functionality in the goals of government and peace building (Mojica, 2022).

Implementing a systemic analysis of the territory requires developing reflective thinking about the political model, the priority of the human factor, the role of the market, land productivity and their interrelationships. As well as recognizing the complexity and interpretation of theoretical, empirical and normative factors, in order to determine the causality of territorial phenomena in public policy design processes: tracing the narrative dimension, what social actors say about their reality in the local context, making value criteria operational, examining institutional roles, as well as their methodological implications (Caires, 2019).

The CM contributes to the achievement of these purposes as a gear of the TAS, for the integral construction of the territorial vision that dynamizes a territorial administration system. This defines the relationship between people, organizations and land, which is fundamental information for the implementation of an RRI and to make progress on issues such as decentralization, control of the preservation of natural resources, risk management, land use planning, among others. Therefore, the national government is proposing to update 70% of the territory by the year 2026, in order to advance in its officialization and ensure the participation of the actors of the territory, in the consolidation of complete information that contributes to the improvement of the Colombian population's quality of life (DNP, 2023).

The government's progress in institutional transformation is also fundamental to guarantee the financing and operability of the

TAS. This means the construction of a solid regulatory framework, consistent with institutional articulation and easy to understand in the definition of tools for the assignment of duties, cadastral competencies and the inclusion of specialized operators in the provision of cadastral services. It also requires the consistent management of the major deficiencies of the current Colombian cadastre, which needs to be overcome to consolidate territorial peace and execute efficient policies for territorial development. In addition, it is important to consider the financial cost of implementing the MC, 42% of which does not have a clear financing source. It is necessary to forge alliances for the sustainability of the system (Escobar & Hernán Cárdenas, 2018).

Regarding functionality of public policies, the participants interviewed pointed out that the national government needs to achieve a multilevel articulation (global, regional, local), based on knowledge management and data governance. This should be configured in a participatory environment of the different social actors, with human talent trained in the use of technological tools to efficiently manage the territory. It also ensures simplicity in the language used in the standardization and institutional interoperability processes, making it accessible and sustainable over time, to comprehensively resolve territorial needs and conflicts.

3.2. TERRITORIAL KNOWLEDGE MANAGEMENT, LEADERSHIP AND SOCIAL LEARNING IN THE POST-AGREEMENT PHASE

The technological innovation process described above implies advancing in the transformation of the traditional approaches to cadastre and public administration because they have generated inflated costs for the country, due to the isolated way in which its institutions operated and the unilateral management of information by these institutions. Therefore, it implies the incorporation of technological tools for the management of knowledge of the territories in their heterogeneity, in order to optimize the investment of financial and time resources, so as to guarantee the rights, restrictions and responsibilities that social actors have over the land (Molendijk, 2018).

To this end, the use and appropriation of technology promotes the development of an autonomous society, critical thinking and collaborative learning, in a process of resignification and reinterpretation of data, which make it easier to process information and generate knowledge (Aparicio, 2018). Creating scenarios for the collective management of the territory allows a closeness between institutions and users, through a process of learning, research and integration of information, which makes communication and trust relationships possible, which are vital for the leadership of the communities in the resolution of conflicts during the post-agreement stage.

It is important to mention that transformational political leadership is a key element in innovation processes, through the incorporation of effective technologies and methodologies, which require institutional commitment and a transformation in public administration, towards an improvement in the management of the State's organizational processes. It is a matter of breaking through the barriers of knowledge, to make it increasingly complete and accessible, with the participation of stakeholders in the management of processes, in order to offer better services to users (Cabrera, 2014; Sepúlveda & Londoño, 2019).

In this regard, digital transformation plays a decisive role in innovation, whereby technology transcends into the cultural transformation of public administration, leading to organizational changes related to governance, people and services (Sáez & Jiménez, 2021). This is evident through the creation and definition of the ICDE, within the framework of the MC and the SORP for the governance of the TAS, as a significant fact for the future of Colombia, considering the need to continue defining an information system that allows for an efficient and fair governance of the territory.

Likewise, based on some experiences of social learning in the post-agreement stage, social control and objective management of information is decisive, where the process of media concentration is addressed, since it can influence the legitimacy and progress of public policies, as well as the empowerment of communities towards the advancement of peace processes in their territories (Moreno et al., 2020; Mouly & Garrido, 2018). The role of the media in a fragmented and conflict-ridden society thus requires new

narratives that enable an appropriate setting for reconciliation (Lombana & García, 2023).

The aforementioned supports the assertions of the professionals interviewed, who emphasize that the political polarization promoted by the media can affect the progress and continuity of public policies, when it is not taken into account that their ultimate goal is to improve the quality of life of territorial actors.

In addition, they state that information management requires guaranteeing the quality, usability and relevance of the data, so that they can make a real contribution to the development of communities. They consider that the current challenge lies in the technological upgrading of the state, for the registry and cadastre, as well as its sustainability in the long term. To the extent that there is an equitable distribution of land and property rights over it are assured, there will be more possibilities to live in peace.

They also recognize the importance of having free access and interoperable platforms in a geospatial data ecosystem because it allows the automation of processes, elimination of paperwork, minimization of human errors, management of spatial databases, multitemporal analysis of the phenomena occurring in the territories, based on the use of satellite images. These make it easier to characterize the territory with greater precision due to the features they offer, such as the use of geographic information in digital maps and geographic portals, useful in land administration processes, and also the possibility of sharing information and locating territorial phenomena through the use of coordinates, in order to intervene in projects and meet needs in the regions.

For this reason, it is considered essential to include a geographic approach in decision making, not only by the government but also by users at different territorial scales, to promote innovation projects and new ways of characterizing phenomena in the social, economic and environmental context, from a global perspective, based on the construction of a geospatial information ecosystem, for the systemic analysis of different variables, in the effective response to the needs of individuals in their territories, allowing administrations to have a clear notion of the existing social gaps, to contribute to peace (Agustín Codazzi Geographic Institute [IGAC], 2023).

The use of geospatial information is therefore considered decisive in strengthening territorial resilience, one of the global challenges connected to the SDGs. The privilege of linking social, economic and environmental issues, through technology, at different scales: local, national and regional, represents a breakthrough for governance (Scott & Rajabifard, 2020).

These circumstances are backed up by the narratives of the research participants, who agree with the descriptions of the evaluation carried out by the National Planning Department (DNP Colombia, 2023), regarding the importance of the strategic direction of the MC public policy, as this requires the streamlining of institutional processes and overcoming the failures of dual leadership between the DNP, IGAC and DANE. As well as taking on the loss of institutional memory, caused by the frequent turnover of senior management, which affects the effective management of information and the quality of services offered to the public.

In summary, it is necessary to call for joint work on the integration of geospatial information: government (local and national), scholars, industry, private sector in general and civil society, each committed to promoting the use of digital tools, innovation and technology, in order to have an information system, publicly accessible and interoperable, useful for the sizing of the context and the delimitation of areas that require prioritization for territorial peace building.

4. CONCLUSIONS AND RECOMMENDATIONS

The in-depth interviews and their interpretation and research findings represent a valuable contribution of new knowledge for territorial governance in this reflective analysis of the effective implementation of public policy on land administration.

Interpreting the challenge of systemic analysis in governance towards peace, begins by considering the reality of the land problem as a whole, which consists of both natural subsystems and institutional subsystems in charge of planning public policies in territorial management, since the processes that occur in these subsystems are in permanent and particular intercommunication as they are part of the same dynamics of development.

Hence, the institutions that manage the land intend to use a common language, be interconnected and interact efficiently, through an ecosystem of geospatial data that allows the governance of the territory, based on interoperable, accessible and quality information, to build holistically the knowledge of the context of the territories, in terms of organization and complexity based on their determinants and conditioning factors.

The challenges faced by the government and civil society in addressing the issue of rural land access and use, in the process of fair and responsible territorial governance, consist of the appropriation and implementation of a geospatial information ecosystem that is sustainable over time, where all institutions involved interact in a coordinated manner, in order to define public policies, based on revolutionary technological tools that allow access to interoperable public information, for the development of a systemic and comprehensive analysis of the territory.

The functionality of the public policies of the MC, the SORP and the TAS for the achievement of peace in rural territories lies in achieving greater inter-institutional articulation based on the analysis of the relationships between the inhabitants and the land, in a system of multilevel and multisectoral governance. This will effectively address existing needs and conflicts, while complying with the inhabitants' own cosmovision and defining regulations that include ethnic groups and peasants, assigning value to their worldview and knowledge.

Historical memory needs to be transformed and the instruments and methodologies for achieving institutional interoperability need to be reconsidered. This demands political will, training, interaction between professional roles at an interdisciplinary level and strategic leadership, in a sustainable, cutting-edge governance, based on coordination, participation and the use of groundbreaking technological resources that accurately manage the knowledge of the territory, making it autonomous and prosperous.

For an effective implementation of the public policies related to this study, it is essential that their operation takes place within an ethical and principled framework; therefore, it is necessary to tackle bureaucracy and corruption. To understand the transition from the fiscal function of the conventional cadastre to the social function

of a MC that values the processes of land legalization, land market regularization, risk management and attention to climate change, for furtherance of the development process and peace agenda in Colombia.

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