

Advancing Territorial Modernization through Good Practice Handbooks: Insights for Professional Education and more

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Key words: training strategy, educational innovation, knowledge management, good practices, evaluation methodology

SUMMARY

The Colombian case stands out as a significant example of good practices in the modernization of land administration policies. Over a decade, a strategic alliance between BSF-SwissPhoto (Switzerland) and INCIGE S.A. (Colombia), financed by Swiss government, enabled the design, implementation, and documentation of a comprehensive Land Administration System (LAS). This long-term collaborative effort culminated in the publication of two Good Practice Handbooks, which serve not only as repositories of institutional memory at both national and territorial levels, but also as methodological instruments for evaluating the effectiveness and efficiency of public policy in the field of land governance. The process successfully aligned the mandates and expectations of diverse stakeholders, including citizens, government agencies, the private sector, academia, professional associations, and international cooperation agencies. The Colombian model contributes to international discourse on land administration education and evaluation, providing actionable insights for countries aligning with ISO standards and SDG objectives.

Through a sustained focus on innovation in knowledge management, institutional learning, and human capital development, the country has advanced towards a more integrated and citizen-centered approach to land administration, aligning with global agendas for sustainability, resilience, digital transformation, and equitable growth beyond 2030. The documented practices are the outcome of continuous training processes and a national education strategy that institutionalized sustainable capacity-building initiatives. These emphasize technological innovation, interoperable platforms, institutional coordination, and participatory governance as essential drivers of modernization. The emphasis on innovation has enabled the incorporation of integrated cadastral systems, standardized geospatial data, and governance models that promote transparency, accountability, and efficiency in land administration.

These achievements highlight the significance of this experience as a transferable framework for other Latin American nations, where land administration reforms often remain fragmented and under-resourced. By analyzing the trajectory through a methodological evaluation of public policy, policymakers, researchers, and educators in the region can identify a more precise and evidence-based roadmap for advancing land administration education. This approach ensures that future reforms are not only technically sound and context-sensitive, but

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also strategically aligned with international standards and designed to sustain long-term institutional resilience and territorial governance reform.

RESUMEN

El caso colombiano se destaca como un ejemplo significativo de buenas prácticas en la modernización de las políticas de administración del territorio. A lo largo de una década, una alianza estratégica entre BSF-SwissPhoto (firma suiza) e INCIGE S.A. (empresa colombiana), financiada por el gobierno suizo, permitió el diseño, implementación y documentación de un Sistema de Administración del Territorio (SAT). Este esfuerzo colaborativo se materializó en la publicación de dos libros de Buenas Prácticas, que se consolidan no sólo como repositorios de memoria a nivel nacional y territorial, sino también como instrumentos metodológicos para evaluar la eficacia y eficiencia de la política pública en el ámbito de la gobernanza territorial. El proceso logró alinear con éxito las expectativas y demandas de diversos actores, entre ellos los ciudadanos, las entidades públicas, el sector privado, la academia, los gremios y las agencias de cooperación internacional. El modelo colombiano contribuye a la discusión internacional sobre la educación y evaluación en administración del territorio, aportando conocimientos prácticos para los países que buscan alinearse con los estándares ISO y los Objetivos de Desarrollo Sostenible (ODS).

Gracias a su enfoque en la innovación para la gestión del conocimiento, el aprendizaje institucional y el fortalecimiento del capital humano, el país ha avanzado hacia un modelo de administración territorial más integrado y centrado en el ciudadano, en armonía con las agendas globales de sostenibilidad, resiliencia, transformación digital y crecimiento equitativo más allá del año 2030. La documentación de las prácticas es el resultado de procesos continuos de formación y de una estrategia nacional de educación que institucionalizó iniciativas sostenibles de fortalecimiento de capacidades. Estas destacan la innovación tecnológica, las plataformas interoperables, la coordinación institucional y la gobernanza participativa como impulsores esenciales de la modernización. El énfasis en la innovación permitió la integración de sistemas catastrales, el aprovechamiento de datos geoespaciales estandarizados y la consolidación de modelos de gobernanza que promueven la transparencia, la rendición de cuentas y la eficiencia en la administración del territorio.

Los logros alcanzados en esta experiencia son de gran relevancia y constituyen un marco de referencia transferible a otros países de América Latina, donde las reformas en administración del territorio aún se presentan fragmentadas y limitadas. El análisis de la trayectoria colombiana, a través de una evaluación metodológica de la política pública, ofrece a

responsables gubernamentales, investigadores y educadores de la región una hoja de ruta más precisa, basada en evidencia, para impulsar reformas y fortalecer la educación en materia de administración territorial. Este enfoque asegura que las transformaciones venideras no solo sean técnicamente sólidas y sensibles al contexto, sino también estratégicamente alineadas con los estándares internacionales y con capacidad de aportar a la modernización territorial en el largo plazo.

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INTRODUCTION

Within the global land administration community, there is growing consensus that sustainable territorial modernization depends not only on technical innovation, but also on professional education, institutional learning, and the systematic transfer of good practices. As countries seek to align their Land Administration Systems (LAS) with international standards such as ISO 19152 (LADM) and the Sustainable Development Goals (SDG), persistent challenges remain in translating these frameworks into operational, citizen-centered public policies. Fragmented reforms, limited evaluation mechanisms, and insufficient human capital continue to undermine long-term impact.

Colombia represents a particularly relevant case within this international landscape. Over more than a decade, a strategic alliance financed by the Swiss government supported the design, implementation, and consolidation of a comprehensive LAS. This long-term process brought together national agencies, municipalities, academia, professional organizations, and international cooperation actors under a shared vision of territorial governance. Rather than focusing exclusively on technological solutions, the country experience illustrates how sustained investment in education, training strategies, and institutional coordination can serve as foundational elements of land administration policy, while remaining responsive to territorial diversity and domestic needs.

Building on this experience, the paper focuses on the educational strategy that underpinned Colombia's territorial modernization, analyzing how sustained capacity development, knowledge management, and institutional alignment contributed to the consolidation of a citizen-centered, innovative, and standards-based land administration model. By examining the trajectory of implementation across national and territorial levels, the analysis identifies enabling conditions and lessons learned that support the translation of international standards into effective public action.

Ultimately, the Colombian experience offers FIG members and the wider land administration community a structured and replicable reference for linking good practices, professional education, and public policy evaluation. The paper contributes evidence-based insights to ongoing international debates on land administration modernization, demonstrating how

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education-led approaches can strengthen institutional resilience and support sustainable territorial governance in Latin America and beyond.

1. CONTEXT

The modernization of Colombia's land administration system emerged as a national priority aligned with new paradigms of territorial governance. This transformation required not only technological innovation but also a profound investment in human capital. To achieve this, an education strategy was conceived as the guiding thread supporting the consolidation of an innovative project in modern land administration. Its purpose was to close the skill gaps and strengthen the national workforce required to implement the Land Administration System (LAS) and the multipurpose cadastre, ensuring that policies translated into sustainable and inclusive practices across the country.

The successful consolidation of Colombia's national education and training strategy for the LAS was the result of a synergistic partnership with six key national agencies along with the active participation of several municipalities that became living laboratories for modernization. This inter-institutional collaboration allowed the articulation of diverse competencies and mandates under a shared vision of territorial governance, data integration, and citizen-oriented service delivery (SwissTierras, 2025).

The National Planning Department (DNP) provided strategic direction and policy coherence; the Superintendence of Notaries and Registry (SNR) ensured the legal and cadastral linkage; the Agustín Codazzi Geographic Institute (IGAC) led the technical and geospatial LADM models; the National Land Agency (ANT) advanced rural property formalization; the National Statistics Department (DANE) contributed with data harmonization and interoperability; and the Ministry of Agriculture and Rural Development (MADR) aligned the process with rural development goals.

Together, the Swiss cooperation and these institutions created an enabling environment for systemic reform and educational innovation. Municipalities, as the closest level of government to citizens, directly experienced the tangible benefits of the initiative in their own territories, from improved land information management to more transparent and efficient public service delivery. The joint efforts not only facilitated the transfer of knowledge and technology but also fostered a culture of collaboration, accountability, and institutional learning.

As the strategy matured, it generated a ripple effect that strengthened governance structures, encouraged evidence-based decision-making, and consolidated the LAS as a cornerstone of Colombia's modernization agenda. The outcomes demonstrated that when national agencies, local governments, and international partners work in synergy, education becomes a transformative instrument capable of bridging policy and practice, empowering institutions, and enabling citizens to actively participate in the sustainable management of their territories.

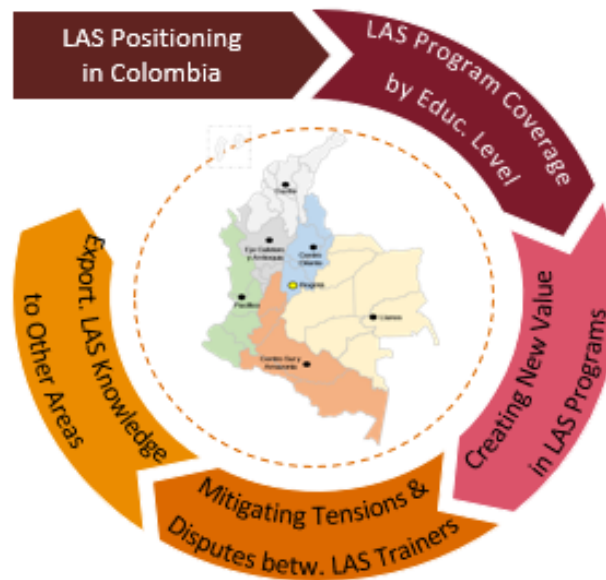
1.1 Educational Arena

Designed between 2020 and 2021 within the framework of the SwissTierras Colombia Project, the strategy identified and addressed three types of human capital gaps: quantity, quality, and relevance. It structured its interventions around five strategic courses of action: positioning the LAS, expanding regional educational offerings, creating added value in training, resolving governance challenges, and ensuring sustainability through innovation. These actions were implemented through formal, non-formal, and informal education programs with regional and differential approaches, supported by national institutions such as SENA, ESAP, and private universities (SwissTierras, 2020).

The educational proposal not only unified diverse stakeholders but also fostered collaboration among academia, public entities, and local communities. Its governance model, based on alignment, innovation, and recognition, enabled the articulation of actors, interests, and resources under a shared vision of modernization. Swiss cooperation played a decisive role in this process, providing technical assistance, methodological guidance, and international standards that strengthened Colombia's capacity for institutional learning and innovation.

The national training strategy for Colombia's LAS was designed to strengthen human capital and close skill gaps essential for implementing the multipurpose cadastre and related public policies. Its structure was based on five strategic courses of action. Together, these actions provided a comprehensive framework to modernize territorial governance through education, integrating technical capacity, institutional alignment, and innovation as key drivers of sustainable territorial development. Ultimately, this strategy positioned education as the backbone of territorial modernization. By aiming to train over 50,000 professionals and transfer knowledge beyond national borders, it transformed the LAS into an emerging sub-sector of public policy that is modern, inclusive, and centered on citizens as active participants in sustainable territorial development (Figure 1. Strategic Courses of Action for 2020-2024 LAS Training).

Figure 1. Strategic Courses of Action for 2020-2024 LAS Training



Source: SwissTierras (2023)

By 2024, approximately 50% of this ambitious training goal had already been achieved as a remarkable result for the time, demonstrating the effectiveness of the coordinated efforts among national institutions, educational entities, and international partners (SwissTierras, 2025). This progress reflects the institutional maturity achieved through nearly a decade of sustained collaboration and capacity building, beginning with the SwissTierras Colombian project in 2015.

Today, with the strengthened commitment of national agencies, several municipalities and the continued support of other international cooperation partners, the full realization of this goal and the consolidation of a citizen-centered, innovative, and globally connected Land Administration System appears not only attainable but imminent.

1.2 Key Partner

From the implementation perspective, BSF Swissphoto's role as strategic technical lead was instrumental in guiding the modernization process across all dimensions from data infrastructure to institutional design. Headquartered in Zurich, with operational branches in Berlin and Zagreb, BSF Swissphoto brought together advanced technical capacity with international consulting experience. The company not only coordinated the project but also contributed key innovations, including the design and integration of the LADM_COL framework and associated tools into operational workflows, the customization of the LAS's

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data architecture, and the alignment of national processes with both international standards and domestic needs (BSF-SwissPhoto, n.d.).

Unique among consulting firms, BSF Swissphoto operates its own airborne data acquisition platform, enabling the project to capture large-area geospatial data with full control over quality and timelines. This operational edge was matched by in-house data processing and software development capacity, ensuring consistency between concept, tool, and implementation. In addition to these technical contributions, BSF Swissphoto facilitated institutional coordination, supported the design of knowledge transfer strategies, and helped create the Good Practice Handbooks as part of a broader knowledge management effort.

By integrating field operations, digital innovation, and policy-level advisory work, BSF Swissphoto demonstrated a distinctive capacity to operate simultaneously as implementer and strategic advisor, effectively linking technical execution with institutional and regulatory decision-making. This integrated approach proved instrumental to the project's success in Colombia and offers a replicable and transferable reference model for countries and land administration agencies facing comparable challenges in the modernization of land governance systems, particularly in contexts characterized by institutional complexity and evolving regulatory frameworks.

1. NATIONAL AND TERRITORIAL GOOD PRACTICES: FOUNDATIONS FOR KNOWLEDGE MANAGEMENT

One of the core pillars of the SwissTierras Colombia educational strategy was knowledge management. For this reason, the project decided to document and systematize its experiences by producing two Good Practice Handbooks. These publications capture the lessons learned between 2015 and 2024 from a collaborative work with national and local government entities, academic institutions, sector-related organizations, and key partners such as international cooperation projects and private-sector actors. Together, these handbooks serve as a valuable resource for strengthening human capital, promoting knowledge sharing, and supporting the ongoing modernization of land administration in Colombia.

These good practice handbooks translate complex standards such as LADM_COL, ISO frameworks, and national policy guidelines into practical methodologies that address local needs while promoting a unified national vision. The national training strategy builds on these systematized experiences to identify skill gaps, define priority knowledge areas, and guide capacity-building efforts across formal, non-formal, and informal education.

These Good Practice Handbooks translate complex standards such as LADM_COL, ISO frameworks, and national policy guidelines into practical methodologies that respond to local needs while promoting a unified national vision. They also represent one of the key outcomes of the national training strategy, which was designed to close skill gaps by defining priority knowledge areas and guiding capacity-building efforts across formal, non-formal, and informal education.

2.1 National Handbook

Land Administration in Colombia has long faced structural challenges, including widespread informality in land tenure, conflicts over land use, and fragmented systems for managing territorial information. In response to these issues, the Land Administration System (LAS) emerged as a comprehensive solution designed to coordinate efforts among multiple actors and strengthen the management of land tenure, valuation, development, and land use under public policies aligned with sustainable development. A major milestone in this process was the formulation of CONPES 4007 of 2020, which established the strategic framework for implementing the LAS at the national level.

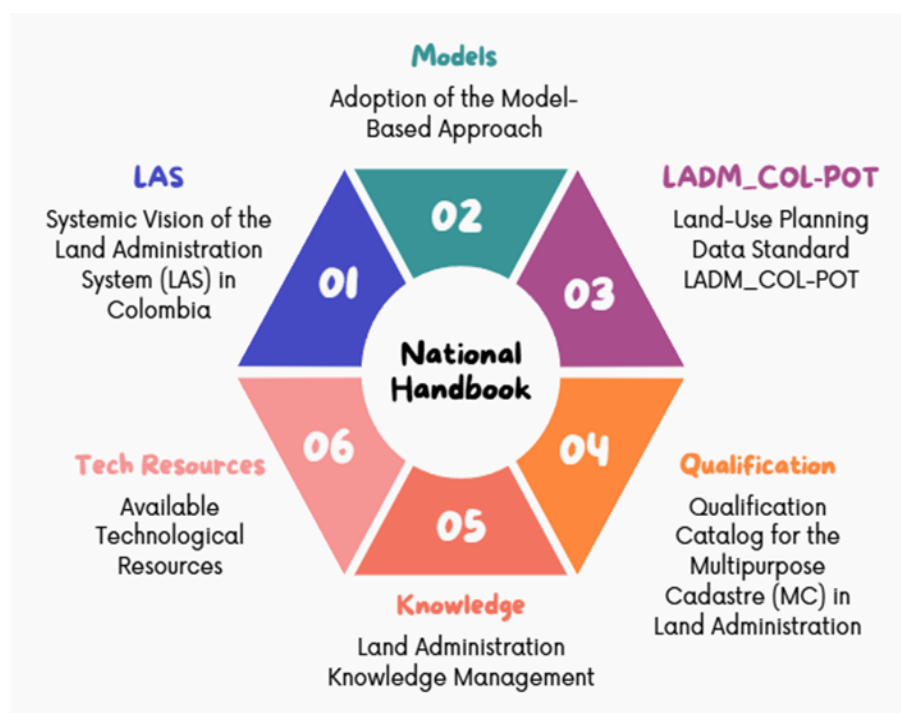
This policy laid the groundwork for integrating intersectoral approaches, promoting the adoption of international standards, and guiding institutional modernization efforts. The book highlights these advances by outlining key guidelines to improve policy coherence, unify technical criteria, and build institutional capacities needed to address Colombia's territorial challenges and move toward a more modern, sustainable, and coordinated land administration system.

The national good practice handbook was developed as a consolidation of a systemic vision of the LAS. It compiles experiences related to the adoption of the LADM_COL model-based approach, the land-use planning data standard LADM_COL-POT, the qualification catalog for the Multipurpose Cadastre sector, knowledge management practices in land administration, and the use of available technological tools. Its purpose is to provide practical strategies that enable national entities to replicate similar efforts, contributing to institutional capacity-building and the modernization of territorial management in Colombia.

Structured into six descriptive chapters, the publication presents key findings, recommendations, and conclusions intended for national and municipal entities, as well as other stakeholders interested in Colombia's experience with modern land administration policies. Each chapter highlights essential components of the process, emphasizing achievements, lessons learned, and remaining challenges. These results demonstrate the

effectiveness and adaptability of the approach used to address the country's territorial complexities, offering practical guidance for future initiatives (Figure 2. National Handbook).

Figure 2. National Handbook



Source: SwissTierras (2025)

The book outlines a methodological route for identifying good practices at the national level, presenting the objectives, methods, and support activities carried out. This includes policy formulation, technical assistance for adopting tools and technologies, and human capital strengthening strategies derived from a decade of territorial modernization efforts.

2.2 Municipal Handbook

Land Administration in Colombia faces amplified challenges at regional and municipal levels, where institutional capacity and data management gaps are more pronounced. Key issues include the lack of continuity in territorial information management during government transitions, limited data integration across institutions, and the insufficient technical capacity of municipalities to adopt national standards. In response to these challenges, SwissTierras Colombia recognized the need to adapt and test the Land Administration System (LAS) in

local contexts to ensure the effective use of updated and standardized Multipurpose Cadastre information.

This effort involved implementing a set of good practices aimed at strengthening at the territorial level, focusing on critical needs such as improving information management processes, supporting administrative procedures related to land, and transforming local data to align with the national standards promoted over the past decade. Through these actions, the project contributed to building local capacities and promoting more coherent, modern, and effective territorial governance.

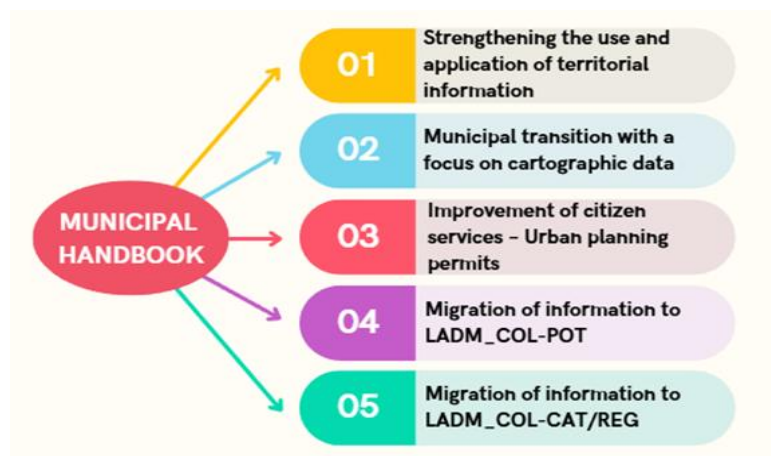
Municipal good practices establish a reference framework based on the complexity that territories face when developing processes in accordance with the regulatory definitions issued by national entities, which at times may be disconnected from the local context and the specific challenges of municipalities. Within this framework, the document presents support activities, technical assistance, and accompaniment, as well as the tangible results achieved by territorial entities, ranging from the clarification of key concepts to the adoption of tools and technological developments. It also includes the strategy for strengthening human capital and managing knowledge at the local and territorial levels, derived from the territorial modernization process carried out over the past decade.

The municipal good practice handbook structured into five descriptive chapters presents a series of findings, recommendations, and conclusions aimed primarily at municipal entities. However, it also serves as a reference for applied experiences for national entities to consider the challenges and limitations encountered during implementation. Additionally, it may be of interest to other actors seeking to understand and benefit from the experience of implementing a modern land administration policy with direct benefits for citizens within the context of a country like Colombia. Each chapter addresses key aspects of the process, highlighting the lessons learned, achievements, and challenges that emerged throughout its development. These achievements reflect not only the flexibility and effectiveness of the approach used to address the country's territorial challenges but also provide practical tools and useful guidelines to inform future initiatives.

Taken together, the book constitutes a valuable resource for strengthening municipal capacities in alignment with national-level provisions and for promoting the modernization of territorial administration (Figure 3. Municipal Handbook).

Figure 3. Municipal Handbook

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Source: SwissTierras (2025)

To summarize, these resources serve as living knowledge assets that inform training programs, guide decision-makers, and support the alignment of territorial institutions with national modernization objectives. Importantly, the process of documenting and validating practices was carried out collaboratively with national agencies, municipal and departmental governments, academic institutions, community organizations, private-sector companies, and international cooperation partners. This multisectoral engagement ensured that the practices reflect local realities while promoting a unified national vision. As a result, the good practice handbooks function not only as technical references but also as enablers of institutional learning, peer-to-peer exchange, and long-term capacity building essential for scaling and sustaining territorial modernization.

2. PROFESSIONAL EDUCATION AS A DRIVER OF TERRITORIAL MODERNIZATION

Training and capacity building play a central role in aligning good practices with the goals of territorial modernization strategies. The national and territorial Good Practice Handbooks described in the previous chapter are part of a broader knowledge-transfer model designed to ensure continuity, institutional learning, and long-term improvements in Land Administration Systems (LAS). Within this framework, professional education becomes a true driver of territorial modernization, directly supporting the objectives of sustainable development by strengthening the technical, institutional, and analytical capabilities required for effective public policy implementation.

Recent findings in Ibero-America further confirm this connection, showing that countries with stronger training processes, better-qualified professionals, and sustained capacity-building programs are more likely to adopt international standards, improve data interoperability, and consolidate coherent modernization pathways across cadastral, registry, and land-use management functions. Evidence from the definitions of the Sustainable Development Goals (SDG) themselves reinforces this relationship, as do established knowledge-transfer models that highlight the role of human capital in sustaining long-term reform. Together, these elements position education at the core of transformative territorial governance.

3.1 Training and Capacity Building in Ibero-America

A recent study named *Diagnosis of the Situation of the Land Administration System in Ibero-America (2025)*, shows how training and capacity building emerge as decisive factors for aligning good practices with the goals of modernization strategies. The study reveals that many of the region's persistent challenges such as fragmented institutions, limited municipal technical capacity, lack of standardization, and outdated cartographic frameworks cannot be addressed without sustained investment in human capital (Femenia-Ribera et al, 2025).

The qualitative social research shows that well-trained professionals are essential for implementing international standards like LADM, improving data interoperability, and strengthening coordination between cadastral and registry functions. The findings also underscore that capacity building supports the adoption of fit-for-purpose methodologies, enhances transparency, and ensures long-term sustainability of territorial information systems. Additionally, the study highlights the importance of academic collaboration and specialized education programs to support modernization efforts.

In the study, a group of 13 experts from Spain, El Salvador, Honduras, Uruguay, Chile, Switzerland, the Netherlands, and Argentina; each with direct or indirect experience in land administration reforms in Colombia were interviewed as part of the study. Their combined perspectives emphasized that training is a cornerstone for reducing system heterogeneity, improving institutional performance, and strengthening land administration systems throughout the region. Their insights reinforce the notion that sustained capacity building and professional development are essential to advancing coherent, modern, and resilient territorial governance.

3.2 Land Administration Policy and SDG

Land administration policy is deeply interconnected with education, as effective territorial governance depends on the availability of skilled professionals capable of interpreting standards, managing geospatial information, and implementing public policies that shape how land is used, valued, and managed. This relationship is clearly reflected in the Sustainable Development Goals (SDGs), which emphasize not only the need for strong institutions and sustainable cities and communities, but also the central role of quality education and capacity building as drivers of sustainable development.

Land administration is directly connected to several of the Sustainable Development Goals (SDGs), as these goals promote a more inclusive, equitable, and sustainable vision for managing resources, land, and the spaces where people live and interact. The territory is the fundamental setting where social, economic, environmental, and institutional dynamics converge, meaning that progress in territorial governance inherently supports broader sustainable development outcomes. The only SDGs that do not have a direct connection to land administration are SDG 5 (Gender Equality) and SDG 17 (Partnerships for the Goals), although both can still influence territorial processes indirectly. Overall, the centrality of territory explains why land administration is deeply embedded in the SDG agenda (Figure 4. SDG & Land Administration).

Figure 4. SDG & Land Administration



Source: Taken from The 2030 Agenda for Sustainable Development (UN, 2015)

3.3 Knowledge Management Framework

The education strategy is intrinsically linked to knowledge management and aligns with innovation frameworks that position learning, adaptive capacity, and continuous improvement as essential components of institutional transformation. Contemporary approaches to territorial governance require not only specialized technical competencies but also the systematic ability to generate, disseminate, and apply knowledge across multiple actors and administrative levels.

Innovation and knowledge management therefore constitute mutually reinforcing processes; without structured mechanisms for capturing insights, transferring good practices, and fostering collaborative problem-solving, modernization initiatives risk losing coherence and long-term effectiveness. Although the SwissTierras strategy did not include a specific strategic line explicitly designated as *knowledge management*, the principles underpinning this field were integrated throughout its actions. In operational terms, knowledge management functioned as a transversal dimension, ensuring that professional education contributed substantively and sustainably to the modernization of territorial administration.

To conclude this chapter, it is important to note that strengthening land administration systems requires continuous learning, professional training, and effective knowledge transfer to ensure that institutions at national and local levels are equipped to address complex territorial challenges such as informality, environmental pressures, and rapid urban growth. In this context, education becomes a strategic pillar of land administration policy, enabling countries to adopt modern standards, enhance data governance, and advance more inclusive and sustainable approaches to territorial development.

4 FROM GOOD PRACTICES TO EVALUATION METHODOLOGY: DESIGNING TOOLS FOR PUBLIC POLICY ASSESSMENT

The insights derived from the national and territorial Good Practice Handbooks, together with the strategic approach adopted by the SwissTierras Colombia project, provide a solid foundation for proposing an integrated methodology for evaluating public policies in the field of territorial administration. These handbooks not only document technical achievements, institutional innovations, and lessons learned over a decade of implementation, but also reveal patterns, enabling conditions, and recurrent barriers that are essential for constructing a comprehensive evaluative framework.

By systematizing experiences across multiple institutions, levels of government, and territorial contexts, the SwissTierras strategy demonstrates how knowledge management,

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capacity building, and standard adoption can be aligned to produce coherent and scalable results. However, despite the relevance of this topic, the academic literature shows no record of a unified methodology specifically designed to evaluate public policies aimed at territorial modernization with a citizen-centered perspective.

This knowledge gap underscores the importance of advancing a structured proposal that integrates technical, institutional, and socio-territorial dimensions. The development of such a methodology is currently underway as part of an ongoing doctoral research project conducted by one of the authors of this paper (Florez Huertas), contributing original scholarship to a field where conceptual and methodological tools remain limited yet urgently needed. The doctoral thesis is titled: *A Comprehensive Evaluation Framework for Public Policies Driving Territorial Modernization in Colombia: A Citizen-Centered Approach (Propuesta de una metodología integral para la evaluación de políticas públicas orientadas a la modernización del territorio en Colombia, con un enfoque centrado en el ciudadano)*.

This chapter presents the theoretical foundations related to the definition, paradigms, epistemological positions, and approaches to public policy. It also examines the main theoretical principles of Colombia's public policy on land administration and the role of citizen participation within this process. An updated theoretical overview of the modernization of land administration is provided, considering both the national perspective and the governmental implementation processes, as well as the technical and technological capacities and the human talent involved. Likewise, the chapter includes a theoretical analysis of public policy evaluation methodologies, drawing on national frameworks and selected international references.

4.1 Public Policy

Meny and Thoenig (1992) define public policy as the outcome of actions undertaken by authorities with public power and governmental legitimacy. It has substantive content, mobilizes resources, and produces results through organized processes of work and action. Public policies are interconnected with other governmental initiatives and operate within broader programs linked to sectors, problems, or consistent decision-making patterns. They also carry normative orientations that embody values, interests, and objectives. Their legitimacy stems from the authoritative nature of government actors, giving them a coercive dimension. Ultimately, public policies are expressed through acts that shape the conditions, interests, and behaviors of citizens, providing them with social relevance. This characterization emphasizes understanding institutional behavior rather than focusing solely

on efficient decisions, offering analytical value for studying the State and its actions beyond strict political interpretations.

Velázquez Gavilanes (2009) conceptualizes public policy as an integrative process of decisions, actions, omissions, and instruments led by public authorities, with possible citizen participation, aimed at addressing socially defined problems. Public policy is tied to its environment, drawing from it while seeking to modify or preserve it. Governments prioritize issues identified as urgent by society, yet effective policies must reflect social consensus rather than only technical expertise or political preferences. Therefore, policy design and implementation should respond to real needs and challenges, not the interests of a specific administration. Legislative decisions should incorporate meaningful citizen input to ensure relevance and generate outcomes that benefit the population. In this sense, theoretical paradigms and epistemological perspectives help clarify the assumptions guiding how policies are conceived, implemented, and evaluated today.

4.2 Citizen Participation Approach

Citizenship, understood as the full membership status that grants equal rights and duties within a community (Soysal et al., 2010), has evolved historically and conceptually depending on its epistemological framing. From classical Greek notions of active civic duties to Habermas's vision of deliberative democracy, citizenship is conceived as an active practice of collective decision-making grounded in rational dialogue and public reasoning. Participation carries epistemic and ethical value: it improves decision quality through diverse perspectives and strengthens collective autonomy. This requires institutional conditions that guarantee inclusion, access to information, and informed deliberation. Ultimately, public participation becomes a means to democratic legitimacy, social justice, and institutional strengthening.

4.3 Public Policy on Land Administration in Colombia

Land administration policy refers to the set of guidelines, strategies, and actions through which a government organizes and manages the physical space of a country or region. As Moncayo Jiménez (2004) notes, territorial and geographic dimensions have become central to socioeconomic processes both nationally and globally. Colombia's peace negotiations in Havana underscored the historical neglect of territorial management, recalling that the last comprehensive cadastral update dated back to 1958 (Aya Smitmans, 2017). The 2016 Peace Agreement required the national government to reverse the territorial conditions that had sustained violence, prompting collaborative efforts between state authorities and civil society

to design and implement modern territorial administration policies for rural and urban areas, including governance mechanisms across national and territorial levels.

Understanding territorial administration, governance, and governability along with the development of technological capacity and human talent is essential for analyzing modernization processes within this policy domain. These elements reveal that public policy in land administration extends beyond formal regulation; it involves complex dynamics of institutional coordination, citizen participation, and technological adaptation. This theoretical foundation provides the conceptual tools needed to critically assess how the State structures and manages territorial action. It also enables a deeper examination of the progress and challenges associated with implementing territorial administration policies in Colombia, particularly in contexts marked by historical inequalities, post-conflict commitments, and the need for sustainable territorial development.

4.4 Methodologies for Public Policy Evaluation

Public policies arise as responses to the complex economic, political, and social challenges faced by societies; however, they often suffer from deficiencies in defining and justifying objectives, which affects their effectiveness and contributes to disparities in citizens living conditions. In this context, policy evaluation must consider its core elements (principles, actors, intentions, and stages) to generate improvements aligned with social demands. According to CEPAL, evaluation requires a formal institutional framework that promotes a culture of assessment and guarantees methodological rigor. Key criteria include reliability, objectivity, relevance, coherence, transparency, and the use of adequate evidence. Moreover, evaluation must involve diverse actors (responsible authorities, evaluators, beneficiaries, and the public) ensuring that results inform decision-making and strengthen institutional learning.

Evaluation is a structured process aimed at identifying and measuring the effects of public interventions, following stages such as defining the subject, designing the evaluation, implementation, dissemination of results, and ex-post follow-up. These phases ensure valid and useful findings and align with continuous-improvement models like PDCA. However, conventional evaluation frameworks tend to be technically oriented and often neglect meaningful citizen participation, reducing the public to passive recipients rather than co-creators of policy. Methodologies vary widely and may use qualitative, quantitative, mixed, or case-study approaches. Recent literature highlights advance in causal analysis, randomized experiments, and natural experiments, though each presents limitations. Overall, evaluation must be adaptable, participatory, and methodologically robust to support informed decision-making and policy improvement.

To summarize, the state of the art, the proposal by Bueno Suárez and Ozuna Llana (2013), and the methodological applications examined in the Spanish context (Artés & Rodríguez-Sánchez, 2022) reveal that these evaluation instruments have been used mainly in academic settings, with limited incorporation into public management processes. This highlights a clear gap in the literature regarding a comprehensive methodology for evaluating land administration policies. In Colombia, this theoretical gap is even more significant, as territorial administration policies are undergoing revision and institutional consolidation. Therefore, developing an integrated, context-specific evaluation methodology is both necessary and urgent to guide decision-making in this strategic policy domain.

CONCLUSIONS

The Colombian experience not only provides empirical insights into land administration modernization but also serves as a foundational case for advancing original methodological contributions in the field of public policy evaluation. From a research perspective, this study directly informs an ongoing doctoral research project aimed at developing a comprehensive, citizen-centered evaluation framework for public policies oriented towards territorial modernization. The findings highlight the need for integrative methodologies that move beyond purely technical or institutional indicators to incorporate educational processes, knowledge management mechanisms, and citizen outcomes as core evaluative dimensions. Future research should expand this framework through comparative and longitudinal studies, testing its applicability across different national and territorial contexts.

From a policy standpoint, the analysis demonstrates that evaluation must be embedded as a strategic and continuous component of land administration reform. The methodological framework under development offers policymakers a structured tool to assess alignment with international standards such as LADM and ISO frameworks, while remaining sensitive to country-specific legal, institutional, and territorial conditions. By integrating evaluation with education and capacity-building strategies, this approach supports adaptive governance, institutional learning, and evidence-based decision-making, strengthening the long-term sustainability of land administration policies.

The publication of the Good Practice Handbooks further reinforced this progress by consolidating the project's accumulated experience into replicable and policy-aligned tools. These documents not only preserve institutional memory but also function as practical methodological instruments for assessing and evaluating modernization efforts across different institutional levels. By systematizing lessons learned and implementation pathways, they offer a transparent and structured view of what works in practice and under which

conditions. This evidence-based perspective is particularly valuable for decision-makers, educators, and international cooperation partners seeking to support land administration reform, strengthen capacity-building strategies, and guide future implementations aligned with international standards and country-specific needs.

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