

Institutional Coordination and the Limited Reach of FELA to Latin American Cadastre

Amalia VELASCO MARTÍN-VARES, Sylvia AMADO APARICIO

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SUMMARY

An effective Land Administration depends on clear and efficient collaboration among the public administration that work in the sector, private, and civil society actors. Framework for Effective Land Administration (FELA), the document in which UNGGIM-LA defines the approach to improve land governance and management, especially in developing countries, considers the coordination among institutions as a key component of this effective land administration.

In Latin American countries FELA has not yet reaching the cadastral agencies, despite their fundamental role in the administration of the territory. This is evident in the lack of awareness about this approach, under land governance frameworks that do not facilitate the FELA dissemination, assimilation and subsequent implementation. In this context, the lack of institutional coordination -including multilevel and multisector – was postulate as key factor that should be addressed.

The article analyzes, through documentation and interviews both with the heads of Latin American cadastral institutions, and with two of the main Geographic Institutes of the region, the distribution of competencies in land administration, the role of the cadastre and overall, the performance in the context of effective land administration

The study allows to assert that enhancing institutional coordination among land administration agencies – including multilevel agencies –, and between them and the regional and global contexts where FELA is addressed, is a key factor for cadastral institutions to effectively engage with FELA and achieve its outcomes in Latin America countries

Based on the FELA's essential elements for achieving effective institutional coordination, concrete solutions are proposed in this article, that will improve this coordination, the knowledge of FELA by the Cadastral institutions and its positive impacts that would allow cadastral institutions to boost their functioning and results.

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1. INTRODUCTION

Framework for Effective Land Administration (FELA), approved in 2020 by the Committee of Experts on Global Geospatial Information Management (UN-GGIM) is the first document where UN formally acknowledged the central role of land administration in economic growth, social stability, environmental sustainability, resilience and equity by ensuring clarity about what land exists, who holds rights and responsibilities, where those rights apply, and how land is valued, used, and developed.

FELA offers a holistic approach—integrating governance, policy, finances, data, innovation, standards, partnerships, capacity and advocacy. It addresses the fragmentation that too often characterizes land administration, where responsibilities are sometimes split across multiple agencies and levels of government with little connection or coordination.

The objective of this article is to analyze the main reasons why FELA has not yet reached the cadastral agencies in Latin American countries; despite the fundamental role they play in land administration. Among the many factors that can explain it, the work focuses on institutional aspects, and in particular on the lack of coordination between the different actors involved in the processes inherent to Land Administration at the different levels of administration and in their governance schemes.

Likewise, to the extent that the FELA was generated and approved in the context of the UN GGIM expert groups, whether regional or thematic, such as the EG LAM, it was considered pertinent to analyze the degree of linkage of these groups with cadastral institutions.

1.1. Methodological Notes

As a source of direct survey, a consultation was carried out based on a set of semi-structured questions, addressed to authorities and referents of cadastral institutions in the region, mainly at the national level, and including some cases of subnational scope, according to the distribution of competences in force in each country.

In cases where it was considered necessary, more than one institution per country was included, and the possibility of accessing authorities willing to participate in the study on this subject was also considered. The direct consultation with these authorities responded to the purpose of obtaining information at the highest hierarchical level, as well as to identify their degree of involvement in the object of analysis, both in terms of the results and the definition of possible future lines of action.

The aim was to cover most of the Latin American region in terms of territorial area, as well as institutions that are generally present in the regional groups of dialogue, where they could be more

familiar with FELA and have a greater predisposition to assimilate this type of good practice guides to improve the fulfillment of their tasks.

This consultation was qualitative in nature, covering a varied set of aspects that were structured in the following dimensions related to Land Administration:

- Institutional and regulatory framework
- Institutional coordination
- Knowledge about FELA
- Participation in FELA application
- Participation in Expert Groups – UN GGIM Americas and UN GGIM-LAM

It is understood that the level of responses obtained is relevant and allowed us to present results in general terms, without neglecting and indicating the heterogeneity of the situation found among the countries in order to identify findings and recommendations that are useful.

1.2. List of Cadastral Institutions that Participated in the Consultation

Argentina	Dirección General de Catastro Territorial de Provincia de Tierra del Fuego
Argentina	Dirección General de Catastro Territorial de Provincia de Formosa
Brasil	Município de Campinas
Chile	Servicio de Impuestos Internos, Ministerio de Hacienda
Chile	Ministerio de Bienes Nacionales
Colombia	Instituto Geográfico Agustín Codazzi (IGAC)
Cuba	Instituto Nacional de Ordenamiento Territorial Urbano (INOTU)
Costa Rica	Registro Inmobiliario
Ecuador	Catastro Registral de Cantón Cañar
Guatemala	Instituto de la Propiedad (IP)
México	Instituto Geográfico y Catastral del Estado de Quintana Roo (IBGCE)
Perú	Organismo para la Formalización de la Propiedad (COFOPRI)
Perú	Superintendencia Nacional de Registros de la Propiedad (SUNARP)
Perú	Instituto Catastral de Lima
Rep. Dominicana	Dirección General de Catastro Nacional

1.3. Consultation to Geographical Institutes

It was considered pertinent to include consultations with geographical institutes of reference in the region, based on their participation in the UN-GGIM expert groups, without implying a massive survey, since the study focuses on cadastral institutions. Thus, the Geographic Institutes consulted were: the Agustín Codazzi Geographic Institute of Colombia (IGAC) and the National Institute of Statistics and Geography of Mexico (INEGI).

To prepare the questions to the geographical institutes, the survey carried out in 2024 by the UNGGIM Americas Land Administration working group to different Latin American institutions, mainly Geographic Institutes, was taken into account, in which they were asked about their knowledge of land administration, according to the concept designed by FELA, the result of which

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was that they know the concept and properly apply 38.46%, 30.76% know and partially apply the concept, 7.69% do not know the concept, 19.23% know, but do not apply themselves effectively. One of the reasons that led to focus the research on cadastral institutions was the results of the aforementioned survey that describe the areas that respondents assimilate with the functions of LA where the cadastre is assimilated in 30.95%, the registries in 21.42%, the conservatory registry in 9.52%, the appraisals in 10.71%, territorial planning by 22.61%, the legal framework adequate by the legal part by 1.19%, risk management 1.19%, land use is similar by 1.19%, and all of the above together by 1.19%.

The UN-GGIM Americas survey was mainly oriented towards aspects related to geospatial data. The article and its object of analysis focus on institutional aspects, which complement this approach in accordance with the holistic vision proposed by FELA.

The survey was complemented by a review of literature and background information at the international and regional level, on existing theoretical and information aspects, which were taken into account in the design of the consultation, as well as in the results described, and in the preparation of analyses, conclusions and recommendations

2. FINDINGS

Based on the responses provided by representatives of the cadastral agencies, the following section outlines the main findings regarding the institutional aspects involved in land administration, as well as their relationship with FELA and with the formal groups through which this issue is addressed at the regional level.

2.1. Institutional Framework for Land Administration

There is detailed knowledge of the set of institutions involved in LA. As can be seen in the tables attached, there are numerous institutions with diverse competencies at different levels of public administration. In general, the Cadastral Institutions are clearly identified as institutions of LA.

The concept of LA is presented in different ways, in some cases it is associated only with rural territories, linking it only to processes of reform or redistribution of land; or it is linked to the processes of the property regularization; cadastre-registry relation; urban planning and territorial organization or definition of public lands (ejido) and yet in few cases other aspects of LA are made explicit.

Few institutions recognize real estate valuation as an integral component of land administration. While they generally consider it part of cadastral responsibilities —since most cadasters list valuation as a core function—they nevertheless do not acknowledge it as a fundamental element of the land administration

In some cases, the list of institutions and tasks is very extensive, therefore, it is difficult to identify the governance scheme of LA in terms of processes for determining, recording and disseminating information about land in relation to its value, tenure, use and possible development.

In general, a government institution specialized or specifically responsible for LA is not clearly identified in Latin America. This characteristic distinguishes these countries from those involved in the drafting of the FELA document, particularly in contrast to certain European nations.

In many countries the cadastral competence is assigned at local level meanwhile the LA competences are distributed among the different levels of administration.

It is worth noting the complexity of the distribution of functions in Peru where the competences of LA are decentralized and fragmented among several institutions with overlapping competencies, and numerous institutions responsible for elaborate cadastre.

For instance, in Argentina which together with Mexico are the 2 federal countries of the region, the cadastral is a provincial competence and the administration of land in its different aspects is not delegated to the national government. Concurrently, there are national organizations that bring together provincial agencies to generate common policies throughout the country and some of them hold exclusive functions that it is necessary to carry out at the national level, as the National Geographic Institute.

2.2. Regulatory Framework

There is an abundance of regulations, including sectoral provisions and, in some instances, even general frameworks such as the Constitution or the rights of indigenous peoples. However, no specific regulations explicitly addressing land administration are identified or distinguished.

In this regard, it is observed that while numerous laws address certain functions of land administration individually, they remain fragmented and lack integration for the purposes of establishing an effective land administration. As illustrated by a referent from Chile, there is no specific political or regulatory framework that comprehensively encompasses land administration. These regulations usually concern land use in relation to spatial planning and territorial management, as well as to rural matters such as land redistribution, the administration of state-owned lands, land allocation, and broader agrarian issues. Cadastral laws are occasionally mentioned; however, in general, it is not indicated that cadastral regulations are considered an integral part of the land administration framework.

In few instances, the role of the policy framework in land administration and the way policy decisions give rise to corresponding regulations discussed. Colombia is the only country that articulates precise policies with multi-level rules for the implementation of the cadastre, explicitly incorporating it into the Land Administration System (LAS).

2.3. Institutional Coordination on Land Administration

The responses affirmed the existence of institutional coordination in terms of land administration. However, they also reveal a highly heterogeneous interpretation of such coordination.

In some cases, formal bodies established by regulation, such as committees or councils, are mentioned; however, it is not clear whether they function effectively in practice or whether they do so with sufficient efficacy in relation to the issues they are intended to coordinate. Another level is represented by working meetings, some of which are held periodically while others lack clearly defined regularity, as well as by agreements reached on specific aspects.

Institutional coordination is often understood primarily as the sharing of data or the provision of access to information for other institutional users, and, in some cases, for the citizen in general. It is positive that the existence of coordination between cadastre and registry is indicated, which are an essential part of land administration systems, and that in most Latin American countries they are different institutions, although this mention of cadastre and registry coordination is not generalized.

The coordination between cadastre and Geographic Institutes is explicit in some occasions, at nation and subnational level, but is not generalized.

The coordination of valuation issues is explicit in some countries with cadastre with a clear fiscal orientation, such as Chile. However, although the valuation of real estate is an important function in most Ibero-American cadastre, it is not identified in many cases as LA and its coordination is not mentioned.

The coordination of the institutions involved in tenure is indicated by several countries. Ecuador for the allocation of rural land, Mexico for the delimitation of “ejidos” or Brazil for the integration of data and systems that help in the distribution of land; among others.

The country where the incorporation of LA topics is most appreciated explicitly, is Colombia, where LA issues are being assimilated, and institutions with the corresponding mandates engage in dialogue and coordination for this purpose, as well as within the framework of establishing a Land Administration System (LAS).

Mexico also has formal instances and regular meetings for broad issues, from decisions for public policies to issues to improve cadastral operations in infrastructure, training, data integration, among others. In relation to LA there are councils at state and federal levels for territorial planning and urban development issues, and the state cadasters participated in jointed the Government Secretaries, and some time with local governments.

Difficulties in inter-institutional coordination are observed due to the siloed operation of multiple agencies with responsibilities in cadastre and land administration, even when formal frameworks exist for such purposes. In the case of Peru, as one of the referents indicated, the National Cadastre Council (CNC) should be an articulated and coordinated body for the management of cadastral information and its interoperability with the registry. However, in practice it has serious limitations. Its decisions are not binding on the participating institutions; rather, they function as coordination agreements and good practices, which reduces their effectiveness. In addition, the council lacks political weight and sufficient administrative capacity to lead the administration of land in a broad sense. As a result, land administration in Peru remains fragmented, with institutions acting in isolation and the CNC fails to integrate these efforts into a true national system of land administration.

Coordination between the subnational and national levels between cadastre is generally well explained. This coordination is an important part of cadastral management, especially in countries with decentralized governance schemes, where many of the cadastral competencies are local. However, there do not seem to be many cases of subnational cadastre participating in national instances on LA issues, as is the case with IGNs or SDIs at the national level.

Multisectoral coordination was highlighted only by Colombia and Mexico. In Colombia, the IGAC, where political guidelines are recognized that translate into actions to work at the territorial level with indigenous and Afro communities in the development of the multipurpose cadastre and an

effort to incorporate other actors in a broader scheme is highlighted, including the private sector at the local level. Mexico expressed the exchange and actions with real state assessment and developers from the private sector, agreements with universities for researchs and new technologies applications for cadastral management and with non-governmental organizations to manage protected areas and support sustainable issues.

2.4. FELA Knowledge and Application

Before analyzing the results of this section, it should be noted that the interview was conducted with cadastre experts who usually participate in the activities of the Permanent Committee of the Cadastre in Ibero-America. Most reported that they are familiar with FELA primarily through these international activities, while acknowledging that other individuals or cadastral institutions may possess more extensive knowledge of it.

The interviewees have a very limited knowledge and assimilation of FELA although this situation is observed in different degrees. In some cases, reference is made to its fundamental concepts, among which are: interoperability, modernization, harmonization of procedures, technological updating, training, strengthening and institutional coordination. However, key sections of its content are not mentioned, e.g. its strategic paths are only mentioned once. Neither is there any mention of action plans at the country level, such as the strategy for implementation, nor is its role as a guide and as a framework document taken into account.

According to Chilean referent, whose SDI leads the UNGGIM-Americas group, institutional knowledge about FELA in Chile is not deep yet, and is currently focused within a specific professional domain, and there is no broad scope of intervention as a public policy.

In Mexico, another of the countries that participates most actively in UNGGIM through INEGI, the adoption of FELA remains quite isolated, with initiatives that are close to its principles but without a coordinated national strategy for its implementation. The biggest challenge remains the harmonization of the different land tenure systems (private, social and public) and the creation of a more integrated and efficient SAT (land Administration System by its letters in Spanish), as promoted by FELA.

The Mexican cadastre expert comments that FELA is not perceived as a formal implementation framework. Besides, the fragmentation of land administration among different institutions (federal, state and municipal) and the lack of a unified policy framework has made it difficult to systematically implement FELA. However, even though it is not explicitly mentioned, the principles of FELA are applied indirectly in various initiatives such as cadastral modernization, interoperability, process homologation, as well as institutional coordination. There is a clear determination to move forward in its implementation and the role of cadastre in it.

In the Dominican Republic, where FELA has made itself known in national technical trainings on spatial data, GIS and cadastre, there is no formal adoption or a clear strategy based on FELA. However, there are FELA principles (such as interoperability, focus on users, digital services, citizen participation) that are reflected in the modernization of the National Cadastre, the digitization and interoperability projects and the National Territorial Planning Plan (in process).

The country that seems most internalized about FELA is Colombia, since they handle its principles at the level of the institutions involved and even in interaction with other actors. It coincides that it

is also a country where there is an SAT and the concepts and functions of the LA are also more assimilated.

Another point to note is that no interviewee or their institutions have participated in the drafting or acceptance of the FELA document and the cadastre institution does not participate in meetings about this subject neither at the national nor international level with the exception of the Colombian IGAC.

For example, the referent from the Dominican Republic emphasizes that, at the institutional level, interactions are indirect or occasional rather than active and systematic. Furthermore, there is no formalized technical delegation to EG-LAM.

All respondents consider their participation in national and international meetings on FELA to be important and express a strong willingness to be involved. As the Peruvian expert notes, such participation would facilitate alignment with good practices and support the formulation of public policies.

2.5. Cadastre and Groups of Experts in Geoinformation and Land Administration

In general, the cadastral referents are aware of the existence of the United Nations Group of Experts on Geospatial Information Management (UN GGIM), and its Group of Experts on Land Administration. However, most are unaware of whether their country participates in these groups and which institution represents them on the UN GGIM Americas Regional Committee.

Except for Colombia, no cadastral institution currently engages with, or coordinates on these issues with, the national institution representing their country in these working groups. In Colombia's case, it is important to note that IGAC encompasses national geographical and cadastral responsibilities, including the management of the National Spatial Data Infrastructure (NSDI).

All experts agree on the importance of their country's cadastral institutions participating to some degree in the UNGGIM Expert Group on Land Administration and express support for such an initiative at the national and/or regional level.

2.6. Opinion of the National Geographic Institutes Interviewed

At the level of Latin America and the Caribbean, the implementation of the Strategic Framework for Geospatial Data Governance (FELA) is still incipient. Although FELA has been formally adopted within the framework of UN-GGIM, its dissemination and concrete application in the countries of the region remains limited.

In the case of Colombia, while important steps have been taken towards alignment with the principles of FELA—particularly through the strengthening of the Colombian Spatial Data Infrastructure (ICDE) and the institutional framework that supports it—there are still challenges to achieving a deeper and more articulated implementation.

In Mexico, in particular, the implementation of the FELA is in an incipient state: the federal public administration is aware of the existence of such a guide and recognizes that the nation has already fulfilled some of the conditions that must exist to achieve the effective administration of the territory; however, there is still a long way to go.

The low insertion of FELA in the L.A. sector may be due to various reasons such as the economic situation of the country that prevents allocating resources to its implementation, the lack of technical knowledge of the international guide or the lack of coordination between levels of government, which prevents efficient management of territorial data and prevents the implementation of FELA whose actions pass from one area to another at various levels of government.

Latin American and Caribbean (LAC) countries still face challenges related to informality in land tenure and, although in some cases progress has been made in the articulation between the institutions in charge of cadastre and registration, in many contexts this coordination remains limited or incipient.

In addition, technical and institutional gaps persist, such as the outdated cadastral systems and the lack of effective interoperability, to facilitate efficient administration of the territory. Progress has been made in the formulation of policies for cadastral management. However, the resources for the implementation of interoperable cadastral systems, as a platform for land administration, are not sufficient for the implementation of FELA.

In addition, many countries have not yet established coordination mechanisms between institutions (government, academia, community, etc.) for the implementation of FELA. Although FELA presentations have been made in technical meetings and webinars, technical training processes are required in LAC countries and a clear strategy for formulating action plans at the national level for the implementation of FELA and also a real articulation of the cadastre with national and territorial SDIs is required.

2.7. Latin America's participation in EG-LAM

The low level of FELA insertion in LAC could be caused by the low representation of the countries of the region in the EG-LAM. This could be due to the lack of articulation of institutional relations between these countries and international organizations, lack of knowledge, little interest or little institutional coordination.

Or even unawareness of the activities and opportunities to participate in this group

On the other hand, much of EG-LAM's discussions and working papers are first produced in English. This may limit the participation of Latin American and Caribbean (LAC) countries.

The institutions that are part of both EG-LAM and UN-GGIM are bodies whose representation is national. Which means that on many occasions they are not the ones who work directly in LA since, for example, many cadastre are local and this fact increases the problems for the dissemination of FELA

In addition, UN-GGIM is led by Member States through national statistical offices and geospatial/national mapping authorities, which typically participate in and coordinate regional committees and expert groups; and cadastre authorities do not participate (especially when they are subnational). This can be seen both in the architecture of UN-GGIM, whose secretariat resides in the United Nations Statistics Division, and in the technical calls where the presence of "national statistical offices and national geospatial information agencies" is explicitly indicated.

EG-LAM, on the other hand, was established by UN-GGIM anchored to the global statistical-geospatial ecosystem and those who usually attend and sustain the agenda are the coordinators of

IDE / IGIF and not the cadastre directorates. In addition, in much of LAC the cadastre is decentralized (municipal or departmental) and with separate functions from the land registry; this makes it difficult for there to be a "single" national representative to sit at the table of UN-GGIM or EG-LAM.

2.8. FELA Implementation

At the managerial level, the relevance of FELA and EG-LAM is not sufficiently positioned, so it is not seen as a tool to modernize land administration and at the technical level the model is not sufficiently known, which is why, when cadastre and land administration programs are proposed, the FELA model is not included.

National and local SDIs have a program that does not include specific actions that promote the development of cadastral management. SDIs and the implementation of the IGIF Framework are implemented through cross-cutting policies, frameworks, and standards, while cadastre is pressured by fiscal, legal, and operational demands, which take precedence in the context of national development. In this sense, implementing a framework like FELA is not considered part of the process.

In Mexico, no actions or activities have been implemented that involve local cadastral institutions in the assimilation and implementation of FELA. However, their participation is vital. This requires: a tropicalization of the international guide, the embodiment of the place of cadastre in the FELA to raise awareness about the importance of their participation to achieve the effective administration of the territory, and virtual meetings where it is explained in detail how each of the FELA roads can be implemented in the context of the local reality.

It is necessary to expand the dissemination of FELA at the local level to promote interoperability from that level and strengthen territorial governance. In practice, those who locally generate and validate the data that constitute the basis on which land administration, territorial planning and legal security of property are built are not directly involved in the global and regional forums that develop and promote FELA, generating a gap between the strategic framework and its operational implementation since the standards and methodologies are not used to generate and promote the implementation of the Strategic Framework. Disseminate complete, updated, interoperable and accessible data for territorial management.

3. CONCLUSIONS AND RECOMMENDATIONS

FELA describes the essential elements for achieving effective institutional coordination as: the clarity of Mandates of each of the institutions involve in Land Administration; the establishment of clear coordination mechanisms between them; the use of integrated information systems to facilitate efficient data sharing; the transparency in the institutions and in the coordination rules as well as the necessity of establish mechanisms for institutional accountability; the strengthen the technical and organizational capacities of involved institutions and the inclusion of civil society organizations, the private sector, and local communities in coordination efforts; among others.

Therefore, based on the FELA document, these conclusions are drawn up that analyze the results and a series of recommendations are postulated that will improve this coordination, the knowledge of FELA by the Cadastral institutions and its positive impacts that would allow cadastral institutions to boost their functioning and results.

3.1. Functions of the Effective Land Administration and the Role of Cadastre in the Institutional and Regulatory Framework

In general terms, there are competencies and institutions to carry out, partially or totally, the functions of an Effective Land Administration. However, some cadastral institutions do not seem to have internalized the important responsibility of being the ones that must respond to *the "what, how, when, who and where" about land tenure, value, use and development*; that how FELA reflects are the basic data for effective land administration.

Advancing in a clearer and more explicit understanding of the role of the cadastre and its key function in the generation of a Land Administration System would contribute to strengthening the existing conceptual and institutional frameworks. The challenge lies in strengthening their articulation, promoting instances of coordination, collaboration and integration that favor effective functioning and that includes the different levels of the administration.

With respect to the regulatory framework, it is characterized by being fragmented but complementary, with clear opportunities to evolve towards a more integrated and interoperable scheme, in itself and in articulation with a public policy framework that guides the development of an Effective Land Administration at the national level, in line with standards recommended by FELA itself.

3.2. Scope of knowledge about FELA

The FELA, as a document and as a guide for implementation in the countries, is still little known by Latin American cadastral institutions. Although there is a general idea of some principles, their use is very limited, with exceptions, and therefore, their recommendations are not yet being applied in general terms in the region.

However, it is recognized as a tool that can be useful to face the challenges of countries in terms of strengthening and improving territorial management, including areas of cadastral management, and it is identified as an international good practice to be taken into account.

Most cadastre knows about FELA from international events in the cadastral field but not from national sources, which represents a strong indication of the lack of communication from the institutions and representatives of the countries that make up and frequent the regional and global spheres, where FELA itself was prepared and approved (2020). with cadastral institutions.

From the results presented, it can be deduced that the lack of knowledge and application of the FELA is due both to the distribution of competences and the lack of coordination among the many existing institutions in the sector, and to the way in which Land Administration is understood in these countries.

3.3. Coordination and Governance Issues

The lack of effective institutional coordination is one of the main challenges faced by many Latin American countries in advancing land administration, particularly in the cadastral domain. Although, as respondents note, some degree of coordination exists, it remains insufficient and reveals a highly heterogeneous interpretation of its scope and meaning. Moreover, in many cases, such coordination is marked by limited formality and the absence of explicit and regular mechanisms, or, in others, the formal setting exists but it lacks practical effectiveness.

The governance schemes of cadastral management in Latin America are usually heterogeneous, decentralized at the subnational level, mixed (national governing bodies in some functions and subnational in others) in most of the territory of the region, being centralized in a few countries. The governance schemes on Land Administration also involve other institutions with competences mainly in tenure, regularization, land use and planning, urban and rural development, redistributive aspects of State lands, administration of protected areas, etc.

This leads to the existence of a dense institutional framework, where the design may be well formulated, but other times the competencies overlap in some areas, or there is a dispersion of functions without clear leadership, which does not facilitate the harmonized and integrated exercise towards effective land administration.

On the other hand, there are defined and formal domains with competences in some areas of LA specific, even with a multilevel design that involves local actors, however, the presence of structured instances for the specific and joint treatment of what the LA would imply is not observed. Institutional dispersion and the absence of a governing authority in land administration prevent the FELA recommendations from being fully adopted. Therefore, it is advisable to undertake concerted efforts in this regard so that FELA can indeed be implemented.

Given this institutional context, coordination between the intervening organizations becomes key in several ways. On the one hand, in the areas of cadastral management, where it is sometimes formally defined but does not work effectively, and, on the other hand, between the cadastral institution or institutions and those that have some type of direct competence in LA.

Effective coordination is one of the great challenges facing cadastre in the region. To this end, it is significant that the Latin American region does not have all the cadastral territory and it is necessary to coordinate efforts, resources, available information, access to technologies, standards, among other aspects to bridge this gap jointly and for the benefit of all governmental and non-governmental actors.

Si bien se desarrollan múltiples actividades de carácter técnico, tanto catastral como con fines de algunas áreas de AT, muchas veces se limitan al intercambio de información y a veces alcanzan niveles de interoperabilidad, pero no suelen tener la regularidad deseable y carecen de una coordinación sistémica.

It is recommended to strengthen formally coordination mechanisms, ensuring they function effectively in practice and not only nominally. Emphasis should be placed on promoting multi-level and multi-sectoral coordination which is essential to achieve higher coherence and impact.

On the other hand, the linkage between cadastral institutions and geographic institutes tends to be weak, with only limited exceptions. This connection becomes crucial, given that geographic

institutes are the entities that generally are the official representatives in regional and global forums concerning FELA, particularly in relation to geospatial information management.

Nevertheless, geographic institutes do not perform land administration functions, and without effective coordination and fluid interaction with cadastral agencies and other land administration institutions, they fail to transfer to a domestic level the content, debates, and advances discussed in such forums. This constitutes another key factor explaining the limited awareness of FELA among cadastral institutions in Latin American countries.

3.4. FELA in the Regional Agenda, the Expert Groups and the Participation of Cadastre

Although there are formal high-level spaces, such as UN-GGIM with its Regional Committee for the Americas and a dedicated Expert Group on Land Administration (EG LAM), as well as related thematic networks, the inclusion of issues aimed at promoting FELA remains incipient. Moreover, in the more specific field of land administration only two Latin American countries are currently participating, which indicates that FELA is not yet present on the regional agenda at that level.

Cadastral institutions, which play a key role in land administration, do not participate in any of these forums, even though one of the objectives of UN-GGIM Americas is to *“define guidelines and strategies to support member nations in the development of cadastral information, taking into account the individual needs of each country.”*

The global and regional forums that created and promoted FELA have not yet reached the institutions with mandates and responsibilities for carrying out the core functions of land administration in most countries, with only minimal exceptions.

From the perspective of cadastral institutions, there is a widespread interest in engaging with regional committees and Group of Experts within the framework of UN-GGIM that address land administration. They support the opportunity to participate actively in whatever format is feasible. This engagement is seen as a valuable chance to bridge the gap between the existence of best practices discussed in these forums, such as FELA, and the institutions with the mandate and capacity to assimilate and implement them.

Interviewees familiar with the FELA recognize the important impetus the document could provide in areas such as:

The legal and regulatory framework: not only in the definition of updated cadastral rules but also in territorial regulations on land use or the treatment of public land or illegal occupations.

The creation of geographic information systems based on standards that allow a more effective management of the cadastre, the use of technology to collect and update data, integration with the property registry, as well as the dissemination of these for an effective LA. It would also improve valuation processes and strengthen territorial governance for more equitable and sustainable development.

But not only in these aspects of management but in other aspects of good governance such as: the promotion of transparency of cadastral data to prevent fraud, property disputes, and facilitates access to financial services for real estate development; the ecological function of the cadastre or its social role in the defense of ethnic minorities, or gender equality, for example.

It was also found that some cadastral institutions of weight in the region were explicitly willing to develop training initiatives about FELA, as well as to lead spaces for dissemination and representation of the subject, such as through regional cadastral networks.

3.5. Final considerations

Although the document went through a process of participatory creation and acceptance by the experts of the countries latino americanos within UNGGIM, the truth is that despite its usefulness, it has not been adequately disseminated LA and is not known at the management levels since in many cases they did not participate in its elaboration and it is not achieving the objectives that were sought.

The document, being a framework document should be adapted and put into practice in each concrete situation and this work is not being done with intensity that it should. Lo que representa actualmente una importante ventana de oportunidad, especialmente para que sea asimilado por instituciones de Administracion de Tierras de Latín América.

A key aspect is represented by the strengthening of mechanisms that allow greater articulation between cadastral institutions and the regional and global areas where FELA is treated. To this end, various alternatives can be promoted, from generating spaces for national representation, or through regional networks that involve cadastre, or other more specific ones such as the formation of work teams that involve not only the formal representatives of the countries in UNGGIM, but also representatives of SDIs and cadastral agencies on specific issues.

Along these lines, proposals were presented by interviewees to even expand in some way the participation of actors in the territory such as ethnic groups (indigenous and Afro-descendants), peasants, social leaders, women, youth, representatives of the private sector and research, interested in participating in territorial planning and development projects, emphasizing strategic paths 5, 7, 8 and 9.

Implementing an effective land administration framework (FELA) in fragmented governance systems should also be considered to present significant risks if local particularities and the fragility of the political system are not taken into account. While the formalization and systematization of land administration can bring many benefits in terms of transparency, legal certainty and efficient use of resources, it can also accentuate inequalities, generate conflicts and destabilize power structures that have existed for a long time. Reforms must be carefully designed and implemented, ensuring that they are inclusive, adaptive, and sensitive to local dynamics to avoid unintended consequences.

Nevertheless, the greater dissemination of FELA at the local level would allow technical staff and those responsible for cadastral management to know first-hand the guidelines, benefits and standards proposed by the framework, and to be able to incorporate them into their daily processes of data collection, validation, interoperability and publication.

This would facilitate, for example, local cadastre to adopt the LADM data model (ISO 19152 Standard) and the OGC standards promoted under the SDI, ensuring that the parcels information they produce can be integrated as fundamental geospatial data at the national and territorial level.

The adoption of ISO 19152 would allow a more adequate digitization of cadastre in Latin America, increasing efficiency, transparency, accessibility and the capacity to manage cadastral data. This would facilitate the automation of many processes and the improvement in access to information.

The use of this standard allows the easier implementation of advanced technologies such as GPS, satellites and drones that improve the accuracy and frequency of cadastral updates, optimizing the way data is collected and processed. It also facilitates the integration of various sources of information and the incorporation of cadastral data into SDIs

On the other hand, the participation of cadastre representatives in EG-LAM and UN-GGIM Americas allows for strategic feedback. The operational experience of those who manage the cadastre in the field can provide valuable information to adapt FELA guides, indicators and methodologies to the institutional, legal and technological realities of the region. Likewise, its integration into these spaces would strengthen the link between international strategic planning (IGIF/FELA) and the cadastral modernization projects that are being developed, including multipurpose cadastre initiatives, property formalization and fiscal land management.

It would also be appropriate to carry out research in collaboration with UNGGIM Americas to learn about the problem from their point of view and at the same time serve to raise awareness of the importance of collaboration between land administration institutions to put the principles of FELA into practice.

Finally, it would be interesting to work in collaboration with the group of experts of the International Federation of Geometers (FIG), which maintains in its commission 7 a FELA working group that, if it integrated more experts from Latin American cadastral institutions, could perform a function of disseminating knowledge and help in the implementation of FELA, adapting to the realities of each country and organization.

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LIST OF ACRONYMS

FELA	Framework for Effective Land Administration
UN-GGIM	United Nations Committee of Experts on Global Geospatial Information Management from UN
EG-LAM	Expert Group on Land Administration and Management from UN
IGAC	Instituto Geográfico Agustín Codazzi (Colombia)
INEGI	Instituto Nacional de Estadística y Geografía (Mexico)

INOTU	Instituto Nacional de Ordenamiento Territorial Urbano (Cuba)
IP	Instituto de la Propiedad (Guatemala)
IBGCE	Instituto Geográfico y Catastral del Estado de Quintana Roo (Mexico)
COFOPRI	Organismo de Formalización de la Propiedad Informal (Peru)
SUNARP	Superintendencia Nacional de Registros Públicos (Perú)
CNC	Consejo Nacional de Catastro (Perú)
NSDI	National Spatial Data Infrastructure
ICDE	Infraestructura Colombiana de Datos Espaciales
ALC	Latin America and the Caribbean
ELA	Effective Land Administration
LA	Land Administration
IDE	Spatial Data Infrastructure
IGIF	Integrated Geospatial Information Framework
LADM	Land Administration Domain Model (ISO)
OGC	Open Geospatial Consortium
FIG	Fédération Internationale des Géomètres
SDI	Spatial Data Infrastructure
SAT	Sistema de Administración de Tierras
LAS	Land Administration System

ANNEX 1. QUESTIONS TO CADASTRAL INSTITUTIONS

1. Institutional framework of land administration: How the TA works in your country. What institutions do you recognize related to LA. And how do you locate yours? Is there a specific or generic policy/regulatory framework involving LA?

2. Coordination: Is there any inter-institutional coordination at the governmental level for LA purposes in general, and in particular, with respect to your institution? It briefly specifies areas – councils, committees, formal meetings -, formats, themes -decision-making, information exchange, interoperability of systems, some type of collaboration, training, specific activities-, with what regularity-.

Is there multilevel and/or multisectoral coordination and/or collaboration related to any aspect of LA? Local with national, government agencies with other actors.

3. FELA: Do you know what FELA is? Where do you know it from? You have heard it mentioned in your country, or rather at international events or training activities, etc. How familiar you are with FELA. Who is it aimed at, what is it for, do you know its content, its objectives and strategic paths? If you know it, do you think that in your country and field and intervention this guide is applied or is trying to be applied to some extent?

4. Participation in FELA: Are you or your institution participating in the implementation of FELA in your country? Do you think it is important that your country and, in particular, your

institution, becomes more involved with FELA and would you be willing to support it? from greater knowledge, awareness, participation in activities on FELA, learning about application experiences at the level of action plans by country, etc.

5. Participation in UNGGIM: Do you know what the United Nations Group of Experts on Geospatial Information Management (UN GGIM) is? And the group of experts on Land Administration, of the UNGGIM. EG LAM? Do you know if your country is a member of it and which institution represents it in the UNGGIM Americas Regional Committee? Are you currently participating in any way or in coordination on these issues with the institution that represents your country? If you know it, do you think that the cadastral institutions(ies) of your country should participate to some extent in the UNGGIM Group of Experts on Land Administration? Would you support an initiative in this regard at the national and/or regional level?