

Framework for Effective Land Administration

A reference for developing, reforming, renewing, strengthening or modernizing
land administration and management systems

Expert Group on Land Administration and Management
United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM)
December 2019

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Executive Summary

The United Nations Committee of Experts on Global Geospatial Information Management at its eighth session in August 2018 encouraged the Expert Group on Land Administration and Management (Expert Group) to continue its advocacy and raising awareness of the merits and benefits of effective and efficient land administration and management systems, and to formulate overarching policy guidance that could be referenced by Member States. In this regard, the Expert Group is to consider and include all existing and appropriate globally accepted concepts and approaches for effectively and efficiently relating people to land; documenting, recording and recognizing people to land relationships in all their forms towards securing land and property rights for all¹.

The 2030 Agenda for Sustainable Development is a global plan of action for people, planet, prosperity, peace and partnerships. If realized, lives will be profoundly improved, and the world transformed for the better. Member States when adopting the outcome document of the United Nations summit for the adoption of the post-2015 development agenda, “Transforming our world: the 2030 Agenda for Sustainable Development,” determined to take transformative steps which are urgently needed to shift the world onto a sustainable and resilient path, and continue on a collective journey, ensuring that no one will be left behind².

Considering that an estimated seventy percent of humanity do not enjoy secure land and property rights, there is a need to accelerate efforts to document, record and recognize people to land relationships in all forms^{3,4,5}. The Expert Group recognized this urgent need, cognizant of the diverse social, economic and environmental circumstances at the national and sub-national levels.

Land administration relates people to land and informs on the ‘how’, the ‘what’, the ‘who’, the ‘when’ and the ‘where’ of land tenure, land use, land value, and land development⁶. Land administration systems are the basis for recording the complex range of rights, restrictions and responsibilities related to people, policies and places. Effective land administration must be fit-for-purpose, appropriate and adequate, interoperable and sustainable, flexible and inclusive, and able to accelerate efforts to document, record and recognize people to land relationships in all its forms. Effective land administration provides humanity with better access to and security of land and property rights, is able to mitigate issues relating to land as a root cause triggering conflict, and supports leaving no one behind - the overarching principle of the 2030 Agenda.

This ‘Framework for Effective Land Administration’, acts as an overarching policy guide, provides a reference for Member States when developing, renewing, reforming, strengthening or modernizing land administration and management systems. Specifically, the Framework seeks:

¹ [http://ggim.un.org/meetings/2018-Deqing-Expert-Group/documents/Report%20of%20the%20Expert%20Group%20to%20the%20Committee%20of%20Experts%20\(eighth%20session\).pdf](http://ggim.un.org/meetings/2018-Deqing-Expert-Group/documents/Report%20of%20the%20Expert%20Group%20to%20the%20Committee%20of%20Experts%20(eighth%20session).pdf)

² The preamble of the General Assembly Resolution 70/1 Transforming our world: the 2030 Agenda for Sustainable Development

³ Enemark, S., Bell, K. C., Lemmen, C. H. J., & McLaren, R. (2014). *Fit-for-purpose land administration*. International Federation of Surveyors (FIG).

⁴ Zevenbergen, J., Augustinus, C., Antonio, D., & Bennett, R. (2013). Pro-poor land administration: Principles for recording the land rights of the underrepresented. *Land use policy*, 31, 595-604.

⁵ K.Deininger - World Bank (2017)

⁶ http://ggim.un.org/meetings/2018-Deqing-Expert-Group/documents/Concept_Note.pdf

- To implement the Integrated Geospatial Information Framework for the land sector, and support the achievement of the Sustainable Development Goals;
- To develop a comprehensive vision for understanding, advocating and promoting effective land administration;
- To provide strategic guidance towards country-specific action plans to be prepared and implemented;
- To advocate the continuous strengthening of land administration and management procedures, techniques, and tools; and
- To enhance multilateral partnerships through policy convergence in effective land administration with a view to guiding policy development in Member States.

This Framework for Effective Land Administration is presented to the United Nations Committee of Experts on Global Geospatial Information Management for endorsement. The Framework is developed for all countries both developing and developed, all jurisdictions and all other stakeholders. It is composed of two parts. The first part describes contextual background, provides relevant definitions, a high-level vision statement, and includes an outline of specific goals and objectives. The second part responds to the vision by elaborating on nine pathways for effective land administration and includes a series of priority actions as a guidance for implementation.

Effective land administration caters to all people, and must:

- Accelerate the proportion of population with tenure security,
- Develop confidence and trust, promote security, safety, peace and peace building,
- Promote efficient and vibrant land markets, where appropriate, and taking into consideration aspects of land value and land development,
- Allow economic development through revenue systems that are equitable and fair,
- Contribute to smart and resilient societies,
- Cater to all circumstances, situations and people – in times of peace and prosperity, in times of stress and hardship (disaster and conflicts, migration and human displacement, poverty, food and water scarcity), and
- Promote and respect the inherent rights of indigenous peoples to their lands, territories and resources and recognize traditions, customs and customary tenures; and
- Promote preparedness, resilience (with increasing climate vulnerabilities), sustainable consumption and strong institutions.

This Framework is intended as a living document, to be periodically reviewed, updated, and tailored to suit local circumstances, the changing global context, and evolving political, technological, economic, environmental and societal landscapes.

Vision, mission, goals and requirements

This Framework for Effective Land Administration (FELA) is a reference for developing, renewing, reforming, strengthening or modernizing land administration and management systems. FELA directly relates to the overarching Integrated Geospatial Information Framework⁷ (IGIF) as adopted by the United Nations Committee of Experts on Global Geospatial Information Management (UN-GGIM) at its eighth session in August 2018. FELA implements the IGIF for the land sector.

Vision Statement

Recognize people to land relationships in all forms for the wellbeing of people, planet, prosperity and peace.

Mission

To provide leadership, coordination and internationally recognized standards and support responsible innovation and partnerships for effective land administration to deliver solutions for sustainable social, economic and environmental development.

Goals and Requirements

The nine requirements and goals of an effective land administration and management system are also aligned with the nine strategic pathways of the IGIF.

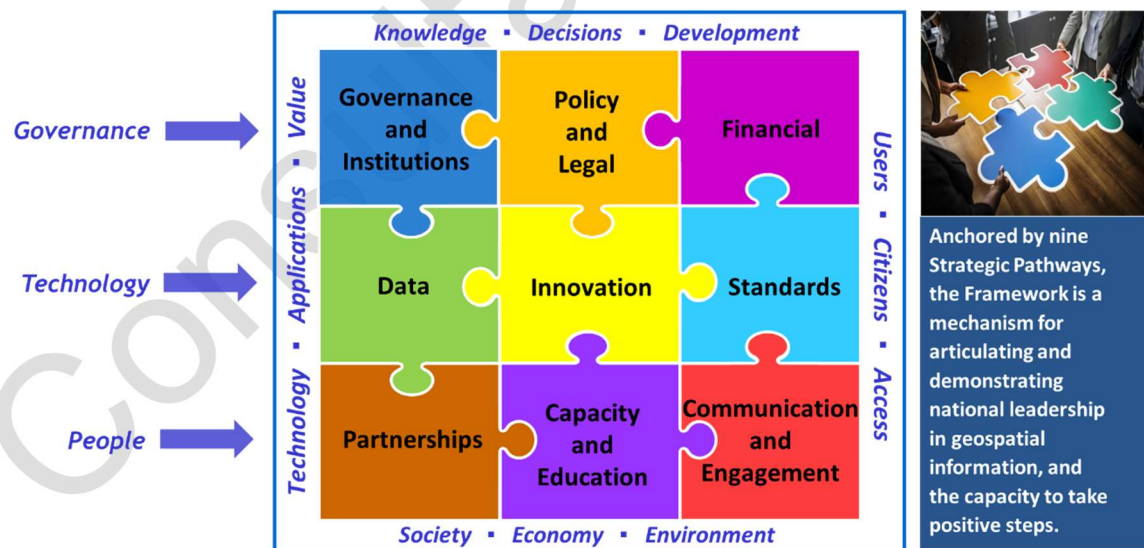


Figure 1: Nine Strategic Pathways of the Integrated Geospatial Information Framework

⁷ <http://ggim.un.org/meetings/GGIM-committee/8th-Session/documents/Part%201-IGIF-Overarching-Strategic-Framework-24July2018.pdf>










	Goals	Requirements
 Governance, Institutions and Accountability	Transparency and accountability increased	Accountable and transparent governance
 Legal and Policy	Gender and vulnerable groups sensitive	Inclusive and recognise all forms of tenure
 Finance	Affordable investments and economic returns assured	Affordable with sustainable business models
 Data	Reliable data and service quality attained	Data maintained, secure and not duplicated
 Innovation	Responsible innovation oriented	Upgradable systems and approaches
 Standards	Interoperability and integration supported	Considers internationally agreed standards
 Partnerships	Cooperation, partnerships, and participation leveraged	Strengthens partnerships and supports collaboration
 Capacity and Education	Capacity, capability and knowledge transfer attained	Facilitates capacity development and knowledge transfer
 Advocacy and Awareness	National engagement and communication enhanced	Advocates for land administration and management

Figure 2: Overview of Requirements and Goals

Background

Seventeen goals to transform our world

On 1 January 2016, the 17 Sustainable Development Goals (SDGs) of the 2030 Agenda for Sustainable Development — adopted by world leaders in September 2015 at an historic UN Summit — officially came into force. From 2016 through to 2030, these Goals that universally apply to all countries will mobilize efforts to end all forms of poverty, fight inequalities and tackle climate change, whilst ensuring that no one is left behind. The 17 Goals and 169 targets demonstrate the scale and ambition of this universal agenda.



Figure 3: Sustainable Development Goals (SDGs) ⁸

The SDGs are a call for action by all countries to promote prosperity while protecting the planet. They recognize that ending poverty must go hand-in-hand with strategies that build economic growth and address a range of social needs including education, health, social protection, and job creation, while tackling climate change and environmental protection. People to land relationships cut directly and indirectly across all the SDGs.

Goal 1 End poverty in all its forms everywhere	
Target 1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance	Indicator 1.4.2 Proportion of total adult population with secure tenure rights to land, (a) with legally recognized documentation, and (b) who perceive their rights to land as secure, by sex and type of tenure
Goal 5 Achieve gender equality and empower all women and girls	
Target 5.a Undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws	Indicator 5.a.1 (a) Proportion of total agricultural population with ownership or secure rights over agricultural land, by sex; and (b) share of women among owners or rights-bearers of agricultural land, by type of tenure Indicator 5.a.2 Proportion of countries where the legal framework (including customary law) guarantees women's equal rights to land ownership and/or control

Figure 4: Examples of Goals, Targets and Indicators related to land

⁸ <https://sustainabledevelopment.un.org/?menu=1300>

Global agenda and guidelines

The global agenda, policies and guidelines, tools and methods include reference to recognized concepts and approaches from global organizations, internationally recognized donor agencies, development partners, peak professional bodies, academia, NGOs and CSOs, and related networks - and all build upon the contemporary notion that all people have the right to an adequate standard of living⁹, regardless of whether underlying people-to-land relationships are formal, informal, statutory, customary, legal, legitimate, or otherwise in nature.

Genesis for these rights can be found in Article 25 of the UN Universal Declaration of Human Rights (1948), with subsequent declarations, statements, and agendas proclaiming more specifics relating to housing¹⁰, food¹¹, and holding of property by indigenous groups, migrants, and returning refugees¹². Further support is found in statements calling for supportive institutions and practices relating to these rights¹³, including conflict resolution¹⁴.

Most recently, the overarching goals of the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGT) are to achieve food security for all and support the progressive realization of the right to adequate food in the context of national food security. Endorsed by the Committee on World Food Security on 11 May 2012, the Guidelines on Tenure promote secure tenure rights and equitable access to land, fisheries and forests with respect to all forms of tenure: public, private, communal, indigenous, customary or informal.

The New Urban Agenda (NUA) represents a shared vision for a better and more sustainable urban-rural future. If well-planned and well-managed, urbanization can be a powerful tool for sustainable development for both developing and developed countries. The importance of land in urban development and the need to monitor land governance in urban areas is underscored in the New Urban Agenda endorsed by Member States during the Habitat III Conference on 20 October 2016.

⁹ <https://www.un.org/en/universal-declaration-human-rights/>

¹⁰ See - 1976 Vancouver Declaration; Habitat Istanbul 1996, paragraph 40b

¹¹ See - 1945 FAO Constitution, Preamble; World Food Summit 1996, 2002; MDGs, 2000 (No 1, 3 and 7 - eradicate hunger, promote gender equality, ensure environmental sustainability)

¹² See - UN Declaration on the Rights of Indigenous Peoples 2007; Convention Concerning Indigenous and Tribal Peoples art 16; International Convention on Economic, Social and Cultural Rights art 11; International Convention on the Protection of the Rights of Migrant Workers art 15; Principles of Housing and Restitution of Property for Refugees and IDP's art 5 and 7; European Convention Human Rights and Fundamental Freedoms art 1; American Convention on Human Rights art b21, African Charter on Human and Peoples Principles art 14

¹³ See - 1972 Stockholm Declaration principle 2; 1996 WFS objective 1.2; 1992 Rio Global Plan of Action - with geoinformation as a basis for policy formation

¹⁴ See - 2019 UN Guidance Note of the Secretary General on The United Nations and Land and Conflict

Equal impetus can be found in UN-FAO¹⁵ (Food and Agriculture Organization) and UN-Habitat¹⁶ (United Nations Human Settlement Program), and latterly the Global Land Tool Network¹⁷ (GLTN) and International Panel on Climate Change¹⁸ (IPCC), all with prominent advocacy and tool development related to land administration and management. Publications and recommendations from global donors and development partners such as the World Bank¹⁹ also influence the approaches, methods and tools presented here. Additionally, policies and tools developed in regard to land rights for all²⁰, fit-for-purpose land administration^{21, 22}, pro-poor land recordation²³, the continuum of land rights²⁴, women's access to land²⁵, the Social Tenure Domain Model²⁶, the United Nations Declaration on the Rights of Indigenous Peoples²⁷, the Guidance Note of the Secretary General on Land and Conflict²⁸ and the Sendai Framework for Disaster Risk Reduction²⁹ and the Framework and Guidelines on Land Policy in Africa³⁰ are referenced within the nine pathways. Further, the Land Governance Assessment Framework³¹ (LGAF) and foundational work of Land Policies for Growth and Poverty Reduction³² inform the strategic pathway relating to accountability and the underlying framework respectively. Likewise, the ISO 19152 Land Administration Domain Model³³, being an endorsed ISO standard, with links to OGC^{34,35} (Open Geospatial Consortium) and the International Hydrographic Organization³⁶ (IHO) (S-121) informs the principles at the level of data and information management. Practical tools to reduce the opportunities for corruption and enhance the ability of people and organizations to resist³⁷ also influence FELA in terms of accountability and transparency.

15 <http://www.fao.org/home/en/>

16 <https://unhabitat.org/>

17 <https://gltn.net/>

18 See 2019 IPCC Special Report on Climate Change, Desertification, Land Degradation, Sustainable Land Management, Food Security, and Greenhouse gas fluxes in Terrestrial Ecosystems

19 <https://www.worldbank.org/>

20 <https://unhabitat.org/books/secure-land-rights-for-all/>

21 <https://www.fig.net/pub/figpub/pub60/Figpub60.pdf>

22 <https://gltn.net/download/fit-for-purpose-land-administration-guiding-principles-for-country-implementation/?wpdmdl=7979&ind=0>

23 <https://gltn.net/download/designing-a-land-records-system-for-the-poor/>

24 <https://unhabitat.org/books/framework-for-evaluating-continuum-of-land-rights-scenarios/>

25 <https://gltn.net/download/women-and-land-in-the-muslim-world/?wpdmdl=11954&refresh=5c7364b4175d21551066292>

26 <https://stdm.gltn.net>

27 <https://www.un.org/development/desa/indigenouspeoples/declaration-on-the-rights-of-indigenous-peoples.html>

28 https://www.un.org/en/events/environmentconflictday/pdf/GN_Land_Consultation.pdf

29 <https://www.unisdr.org/we/coordinate/sendai-framework>

30 https://www.uneca.org/sites/default/files/PublicationFiles/fg_on_land_policy_eng.pdf

31 <http://www.worldbank.org/en/programs/land-governance-assessment-framework>

32 <http://documents.worldbank.org/curated/en/485171468309336484/Land-policies-for-growth-and-poverty-reduction>

33 <https://www.iso.org/standard/51206.html>

34 <http://www.opengeospatial.org/>

35 <https://docs.opengeospatial.org/wp/18-008r1/18-008r1.html>

36 <https://www.iho.int/srv1/index.php?lang=en>

37 <https://www.transparency.org/whatwedo/tools>

Global Geospatial Information Management

UN-GGIM at its fourth session in August 2014 approved the addition of a new work item, “the application of geospatial information related to land administration and management” into the provisional agenda for its fifth session. In its supporting statement, The Netherlands urged UN-GGIM “to act and UN-GGIM can play a powerful role in this. Doing this, UN-GGIM will enforce the post-2015 agenda Good land administration, considering both formal and informal rights of the use and ownership of land, is a basic requirement for social and economic development”. In its decision at the fifth session, UN-GGIM acknowledged the importance and need for geospatial information as an essential base for an effective and efficient land information system to support the administration of land policy frameworks, customary rights, security of tenure, property rights, sustainable development and overall environmental, economic and social well-being.

The Addis Ababa Declaration on Geospatial Information Management Towards Good Land Governance for the 2030 Agenda affirms the importance of good land administration and management as the pillar of good governance and efficient governments to address the challenges and opportunities of the 2030 Agenda. The Declaration was the culmination of the Fourth High-Level Forum on Global Geospatial Information Management held from 20 to 22 April 2016 in Addis Ababa, Ethiopia. The Declaration makes specific reference to the VGGTs and supports the development of fit-for-purpose land administration, particularly in developing countries. It confirms that up-to-date information that is consistently available and accessible over space and time underpins good land administration and management, leading to good land governance and sustainable development³⁸.

At the sixth session, the Expert Group was encouraged to address the issue of fit-for-purpose land administration and geospatial information required to support effectively and efficiently the need to secure land and property rights for all. UN-GGIM in its seventh session in August 2017, urged the Expert Group to continue to address the overarching policy guidance required for establishing effective, efficient, sustainable and interoperable land administration and management systems.

Integrated Geospatial Information Framework

The Committee of Experts at its eighth session in August 2018 adopted the Integrated Geospatial Information Framework (IGIF) that provide a basis, a reference and a mechanism to establish or improve national geospatial information management arrangements. It can also coordinate activities to achieve alignment between existing national capacities, capabilities and infrastructures, including the land sector, and to leave no one behind. IGIF aims to translate high-level concepts to practical implementation guidance for use by Member States and does this by leveraging seven (7) underpinning principles, eight (8) goals and nine (9) strategic pathways.

³⁸ http://ggim.un.org/meetings/2016-4th_HLF/documents/Addis_Declaration_Final_22Apr2016_rev.pdf

The IGIF comprises three parts as separate, but connected, documents: Part 1 is an Overarching Strategic Framework; Part 2 is an Implementation Guide; and Part 3 is a Country-level Action Plan. The three parts comprise a comprehensive Integrated Geospatial Information Framework that serve a country’s needs in addressing economic, social and environmental factors; which depend on place-based information in a continually changing world. The IGIF focuses on place-based information that is integrated with any other meaningful data to solve societal and environmental problems, acts as a catalyst for economic growth and opportunity, and to understand and take benefit from a nation’s development priorities and the Sustainable Development Goals.

Part 1: Overarching Strategic Framework

Part 1: Overarching Strategic Framework sets the context of **‘why’** geospatial information management needs to be strengthened and why it is a critical element of national social, economic and environmental development. It focusses on the role of geospatial information in the digital age and how that information is integral to government functions at all levels.

Part 2: Implementation Guide

Part 2: Implementation Guide describes **‘what’** actions can be taken to strengthen geospatial information management. The Implementation Guide is a reference resource that provides information for governments to design, plan, establish, implement and maintain nationally integrated geospatial information frameworks in their country in such a way that transformational change is enabled, visible and sustainable.

Part 3: Country-level Action Plan

Part 3: Country-level Action Plan (CAP) is specific to each country and details **‘how’** the guiding principles, options, and actions specified in the Implementation Guide will be carried out, when and by whom. Importantly, the CAP is a plan, not a program that is implemented.

“It is abundantly clear that a much deeper, faster and more ambitious response is needed to unleash the social and economic transformation needed to achieve our 2030 goals. From our advances, we know what works. This report therefore highlights areas that can drive progress across all 17 SDGs: financing; resilience; sustainable and inclusive economies; more effective institutions; local action; better use of data; and harnessing science, technology and innovation with a greater focus on digital transformation. In everything we do, we must diligently ensure that policy choices leave no one behind, and that national efforts are supported by effective international cooperation, grounded in a commitment to diplomacy and crisis prevention”

António Guterres
Secretary-General, United Nations



Figure 5: The Sustainable Development Goals Report 2019

Effective Land Administration

Land administration informs the ‘how’, the ‘what’, the ‘who’, the ‘when’ and the ‘where’ of land tenure, land use, land value, and land development³⁹. Land administration is described as the process of determining, recording and disseminating information about the relationship between people and land⁴⁰. Land administration is considered responsible when it continuously aligns processes and resources with dynamic societal demands⁴¹. The term ‘land’ should be interpreted in the broad sense, also including water bodies (rivers, lakes, seas, oceans) and spaces above and below the surface, that is, air space and subsurface spaces⁴².

The need for effective land administration

Considering that a large proportion of humanity do not enjoy recorded land and property rights, there is a need to accelerate efforts to document, record and recognize people to land relationships in all their forms^{43,44,45}. This land administration gap or the ‘cadastral divide’⁴⁶ occurs within increasingly stressed and integrated global and national contexts regarding social, economic and environmental sustainability. People to land relationships cut directly and indirectly across all the SDGs. The interlinkages and integrated nature of the 2030 Agenda for Sustainable Development and its 5Ps (People, Planet, Prosperity, Peace and Partnership)⁴⁷ find direct resonance with effective land administration and management, realized through integrated geospatial information, for land tenure, land value, land use, and land development.

People - End poverty and hunger in all forms and ensure dignity and equality

Information on land tenure, land use, land value, and land development are known to enable economic opportunities, reduce land related disputes⁴⁸, and support food security through subsistence and family farming, agricultural productivity and urban food access⁴⁹. For the vulnerable and marginalized, often including indigenous peoples and women in particular, access to land is demonstrated as crucial for ensuring social and economic development, food security, empowerment, protection from violence and health hazards. Access to land is an enabler through participation. Secured access to land stabilizes societies in crisis and conflict⁵⁰- with lack of access enabling the opposite. Moreover, efforts to support gender equality in regard to access to land, fair working conditions, and the reduction of inequalities – also suffer for adequate attention. Land related challenges linked to provision of underpinning physical infrastructure and sustainable consumption in cities, rural areas, and marine zones demand attention. **An**

³⁹ http://ggim.un.org/meetings/2018-Deqing-Expert-Group/documents/Concept_Note.pdf

⁴⁰ ISO, 2012

⁴¹ Zevenbergen, J., de Vries, W., & Bennett, R., (2016) *Advances in Responsible Land Administration*. CRC Press.

⁴² <https://fig.net/resources/publications/figpub/pub61/Figpub61.pdf>

⁴³ Enemark, S., Bell, K. C., Lemmen, C. H. J., & McLaren, R. (2014). *Fit-for-purpose land administration*. International Federation of Surveyors (FIG).

⁴⁴ Zevenbergen, J., Augustinus, C., Antonio, D., & Bennett, R. (2013). Pro-poor land administration: Principles for recording the land rights of the underrepresented. *Land use policy*, 31, 595-604.

⁴⁵ K. Deininger - World Bank (2017)

⁴⁶ Bennett, R. M., Van Gils, H. A. M. J., Zevenbergen, J. A., Lemmen, C. H. J., & Wallace, J. U. D. E. (2013, April). Continuing to bridge the cadastral divide. In *proceedings of the Annual World Bank Conference on Land and Poverty* (pp. 8-11).

⁴⁷ <https://sustainabledevelopment.un.org/post2015/transformingourworld>

⁴⁸ Henssen, J. (2010). *Land registration and cadastre systems: principles and related issues*. Technische Universität München

⁴⁹ Rockson, G., Bennett, R., & Groenendijk, L. (2013). Land administration for food security: A research synthesis. *Land use policy*, 32, 337-342.

⁵⁰ <https://gltm.net/download/women-and-land-in-the-muslim-world/?wpdmml=11954&refresh=5c7364b4175d21551066292>

effective land administration and management system supports poverty eradication and food security and ensures dignity and equality through documenting, recording and recognizing people to land relationships in all forms.

Planet - Protect our planet's natural resources and climate for future generations

The increasing number of natural disasters affecting the vulnerable and marginalized, who are typically not addressed through any land administration and land management system, has immediate impact on resilience⁵¹. Population increases, and technological development promote intense competition for resources. The increasing pressures on communities, and on natural and built environments, challenge the achievement of the SDGs. **An effective land administration and management system ensures preparedness and resilience, participatory and inclusive land use planning, sustainable resource management, building back better, and the protection of our planet's natural resources and climate for future generations.**

Prosperity - Ensure prosperous and wellbeing of communities

The opportunity for fair land taxation, value capture, enforcement of land controls, and sustainable land management interventions become apparent via land administration and management systems, in both developing and developed contexts. However, there lies challenges with outdated legacy systems or outdated mass appraisal systems. Moreover, there exist a plurality of land administration and management systems particularly in developing contexts, where parallel systems with different objectives may have evolved with time and may be embedded in cultural and customary norms that may not always be catered for in statutory law and which create significant interoperability challenges. **An effective land administration and management systems enable access to land ownership and efficient land markets fostering prosperity, wellbeing of communities, and fulfilled lives through sustainable land management and land use.**

Peace - Foster peaceful, just and inclusive societies

Over the coming decades, competition and conflict over land is likely to intensify with the growing pressures of climate change, population growth, increased food insecurity, migration and urbanization. Due to growing evidence of the link between land, armed conflict, and human rights abuses, the United Nations (UN) system has developed a Secretary-General's Guidance Note on Land and Conflict to help the UN system to be more responsive to the emerging needs of Member States and populations. Governments should consider tenure insecurity issues relating to human displacement and migration, competition over land, and land use conflict, and that these need adaptive interventions from the state⁵². **An effective land administration and management system in conflict contexts prevents land-related conflicts, stabilizes situations and fosters peaceful, just and inclusive societies⁵³.**

⁵¹ Unger, E-M., Zevenbergen, J., Bennett, R., Lemmen, C. (2017). Application of LADM for disaster prone areas and communities. Land use policy, 80, 118-126

⁵² Mitchell, D. (2011). Assessing and Responding to Land Tenure Issues in Disaster Risk Management. FAO-Land Tenure Manuals.

⁵³ <http://ggim.un.org/meetings/2018-Deqing-International-Seminar/documents/3.Clarissa-Augustinus.pdf>

Partnership - Implement the agenda through a solid global partnership

Effective land administration and management systems promote effective public, public-private and civil society cooperation and collaboration, building on the experience and resourcing strategies of partnerships⁵⁴. Partnerships build the knowledge, experience, and human, technological and financial capacities to enhance effective land administration arrangements. They bring together different strengths and perspectives that stimulate creativity and innovation, often through unique capabilities, and drive achievements towards common goals. **An effective land administration and management system enables partnerships at all levels – international, regional, national and local – bringing different but complementary skills, experiences, knowledge and resources.**

Global commitment

The 2030 Agenda emphasizes that global partnerships are key to realizing our Agenda⁵⁵ and affirm a strong commitment to its full implementation. The United Nations recognizes that it will take a revitalized and enhanced global partnership bringing together governments, civil society, the private sector, system and other actors and the mobilization of all available resources⁵⁶. Effective land administration and management systems strive towards peace and strong institutions and can be leveraged to mitigate land as a root cause of conflict, and also support the “leave no one behind” overarching principle of the SDGs and generally, address and promote the recognition and protection of all human rights.

Sustainable development demands effective land administration and management. Effective land administration and management supports sustainable development.

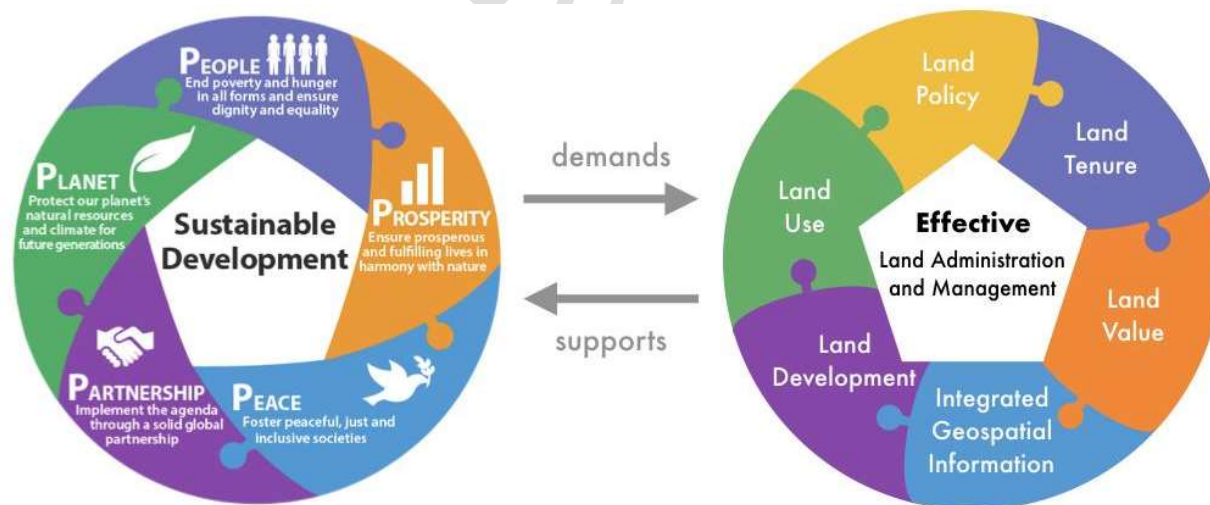


Figure 6: Sustainable Development and Effective Land Administration and Management

⁵⁴ Target 17.17 under Goal 17 - strengthen the means of implementation and revitalize the global partnership for sustainable development.

⁵⁵ Paragraph 40, Transforming our World: the 2030 Agenda for Sustainable Development (A/RES/70/1)

⁵⁶ Paragraph 60, Transforming our World: the 2030 Agenda for Sustainable Development (A/RES/70/1)

Outcomes

The overarching goal of the Framework for Effective Land Administration (FELA) is to support global policy convergence in land administration – with a view to guiding policy development and policy operationalization in Member States according to the IGIF.

Effective land administration caters to all people, and must:

- Accelerate the proportion of population with tenure security,
- Develop confidence and trust, promote security, safety, peace and peace building,
- Promote efficient and vibrant land market taking into consideration aspects of land values and land development,
- Allow economic development through revenue systems that are equitable and fair,
- Contribute to smart and resilient societies,
- Cater to all circumstances, situations and people – in times of peace and prosperity, in times of stress and hardship (disaster and conflicts, migration and human displacement, poverty, food and water scarcity),
- Promote and respect the inherent rights of indigenous peoples to their lands, territories and resources and recognize traditions, customs and customary tenures; and
- Promote preparedness, resilience (with increasing climate vulnerabilities), sustainable consumption and strong institutions.

Stakeholders

This Framework for Effective Land Administration (FELA) seeks greater cooperation, coherence and commitment between all cross-sector stakeholders, not limited to governments and government agencies, United Nations system or international organizations. FELA seeks engagement with non-governmental organizations, civil society, international development partners, philanthropic foundations or bodies, the private sector, academia and communities, among others. FELA further calls for strong commitment of all stakeholders and key partners involved in land administration and management to realize the SDGs and subsequently the goals of this framework.

Using and Applying

FELA can be transferred and disseminated for alignment checks at national level. Likewise, the innovative use of land information and geospatial technologies will help Member States to better understand, formulate policies on, and manage land in a holistic fashion – and where appropriate and validated, these can be transferred to the living global framework. Each pathway comes with a specific objective, related back to the SDGs and the IGIF, and leads to the articulation of approaches, methods and tools, specific to land administration and management, that can be used at national level for the implementation of the FELA.

Nine Pathways of the Framework for Effective Land Administration

The nine strategic pathways of the Integrated Geospatial Information Framework⁵⁷ (IGIF) guide FELA. In this regard, the main areas of influence of the United Nations Integrated Geospatial Information Framework equally apply: people, governance, and technology. The strategic pathways are intended to guide the implementation of FELA, support the IGIF implementation more broadly, and ultimately deliver towards the achievement of the SDGs and sustainable development.

All nine pathways are linked and necessarily overlap, however, for the purpose of FELA and in accordance to the IGIF they are dealt with independently. Linkages between the nine pathways are highlighted where appropriate.

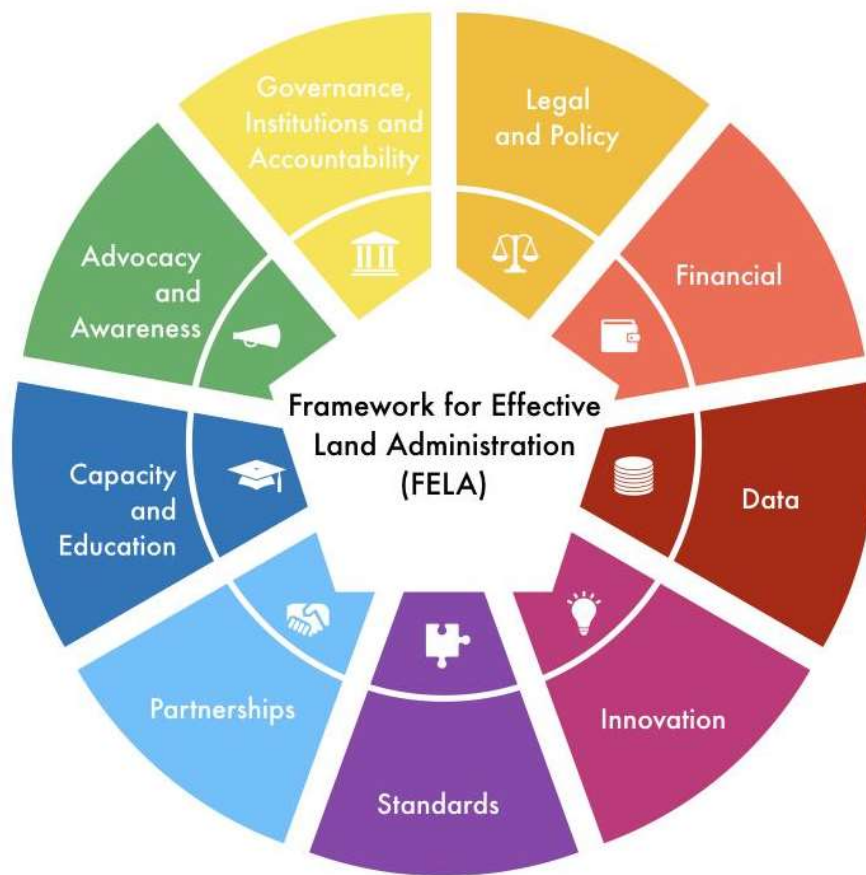


Figure 7: Nine Pathways of the Framework for Effective Land Administration

⁵⁷ <http://ggim.un.org/meetings/GGIM-committee/8th-Session/documents/Part%201-IGIF-Overarching-Strategic-Framework-24July2018.pdf>

Governance, Institutions and Accountability

Land administration is a societal activity both shaping and shaped by governance, institutions, and accountability. Broadly speaking, the entirety of the SDGs focuses on the enhancement and reform of governance, institutions and associated accountabilities. IGIF identifies the themes as a standalone strategic pathway, and calls for the articulation of clear governance models, leadership, institutional structures, and a clear value proposition. These are intended as a means to strengthen multi-disciplinary and multi-sectoral participation, and a commitment to achieve an Integrated Geospatial Information Framework.

In terms of governance models, FELA confirms land administration as an essential aspect of broader land governance regimes, and in this regard is seen to include all actors, processes, and resources involved in determining land tenure, land use, land value, and land development. FELA calls for the establishment of responsible land governance structures, effective and efficient land institutions, and leadership in the land sector, ideally centered upon transparency, accountability, inclusiveness, accessibility, participation, gender and youth sensitivity, and consideration of the vulnerable and marginalized. FELA accepts plurality in terms of available land governance approaches, including market-based, networked, and more conventional hierarchical/institutional approaches - provided there is adherence to good governance principles. On this, increasingly networked approaches are seen to enhance multi-lateral, multi-sectoral, and multi-disciplinary collaboration – with inclusivity and transparency further supported.

In terms of institutions and leadership, FELA identifies the importance of attaining political endorsement and strengthening institutional mandates through continual advocacy and awareness across multiple sectors - intra and inter-agency - across governments, at all levels, with professionals, industry, investors, civil society organizations, academia, and the community. Actors from all sectors can play a role in leadership and ideally there is cross-sectoral championing. Upon this collaborative basis an enabling environment for development of policies, standards and regulations is delivered, leading towards a cooperative data creation and sharing environment.

In terms of value proposition, land administration actors should take a lead in developing and enforcing accountability in terms of procedures, metrics and indicators. Doing so justifies and strengthens mandate, roles and responsibilities, amongst the community and society more broadly.

Legal and Policy

Land administration often finds its basis in land law and policy, however, in the SDGs, law and policy do not find a specific theme - rather they are cross-cutting, if not implicit, in terms of implementing initiatives and measuring SDG indicators. IGIF explicitly highlights the requirements for the establishment of robust legal and policy frameworks relating to geospatial information. These are considered essential for enabling the availability, accessibility, exchange, application and management of geospatial information.

Land administration systems conventionally find mandate within national or state land laws, and more recently land policy frameworks. Systems have often developed with supportive policies, legislation, safeguards, accountability mechanisms, and protections around data and privacy. This strong legal backing often differentiates land data from other types of geospatial information, where laws and directives have called for prescribed collection, ordering, and storage methods. That said, it is important to recognize the dualist and pluralist nature of land administration systems, particularly in developing

contexts, where parallel systems may have evolved with time and may be embedded in cultural and customary ways of life which may not always be catered for by statutory law. A platform for coexistences and complementary laws and policies is necessary.

The creation of sound legal policy frameworks relating to land tenure, use, planning, and development is essential. These should enable the creation of effective land administration and management systems; ones that are available, accessible, inclusive, participative, gender sensitive, transparent, and support the exchange, application and management of land administration information - to all members of society.

In terms of land policies, laws and policies surrounding the establishment, renewal and strengthening of land administration and management systems, should be driven by responses to social, economic and environmental needs. Holistic land policies based upon sustainability principles will result in more efficient legislative design and administration. Land policies should reflect the whole-of-government nature of land administration, building upon evidence that 60-70%⁵⁸ of government legislation and related activities are spatially or land related. A large portion of government agencies either collect, provide or use land information, and land policies should promote government collaboration of land information sharing. Local level empowerment is important in land policy design and local governments need to be given an active role in land policy creation and implementation. Integration of land policies across and between levels of government is critical. For example, environmental issues often cross administrative boundaries and land policies developed and implemented through coordination of different levels of government are more likely to be effective. Land policies should also include appropriate incentive schemes: when designing land policies, an appropriate set of social, economic, environmental and moral incentives need to be determined. Examples include market-based interests (MBIs), compensation arrangements, land care agreements, reward schemes or penalties. In all cases, the norms and ideals underpinning the land policies should be made easily available and recognizable in different modes of communication.

On land related legislation, inclusive, participative, and transparent policy creation – utilizing international guidelines and frameworks – should drive legislative design at national levels. The objective is to establish laws and regulations that support institutional cohesion. Guiding principles may include those relating to good governance principles as defined in the VGGTs, NUA, Pinheiro, Sendai and FFP LA principles. Examples of policies can also be retrieved from the African Union Framework and Guidelines on Land Policy in Africa, as well as the Declaration on Land Issues and Challenges in Africa, by the African Union Heads of State. The importance of local level empowerment in land law development is also recognized in Gender Evaluation Criteria⁵⁹, IFC standards⁶⁰, and the Continuum of Land Rights⁶¹. These concepts and tools offer strategies for supporting and incentivizing inclusion. The ability of governments to organize and integrate land information can be greatly improved if attributes relating to rights, restrictions, and responsibilities - including spatial extent, duration, people involved, and purpose - are defined in a uniform fashion and stored in authentic registers. Legislation should promote innovative use of technology and alternate tools to record and complete these recordations. Accountability should also be embedded into legislation with performance-based legislation often providing a suitable approach. Legislation must consider data privacy and licensing issues.

⁵⁸ See: Bennett, R., Wallace, J., & Williamson, I. (2008). Organizing land information for sustainable land administration. *Land Use Policy*, 25(1), 126-138.

⁵⁹ <https://gltn.net/2016/11/09/gender-evaluation-criteria-for-large-scale-land-tools/>

⁶⁰ https://www.ifc.org/wps/wcm/connect/Topics_Ext_Content/IFC_External_Corporate_Site/Sustainability-At-IFC/Policies-Standards/Performance-Standards

⁶¹ <https://gltn.net/download/property-theory-metaphors-and-the-continuum-of-land-rights/>

In terms of implementing policy and law into practice, decisions about land administration system design and land administration functions and processes are to be driven by the rule of law. However, importantly, it is recognized that statutory law represents only one way to achieve effective change in land administration, community awareness and information provision can be equally effective and more efficient in promoting uptake, use, and upgrades of land administration systems.

Finance

The financial aspects of land administration and land management relate to the establishment and maintenance costs of the system and underlying data and records within, and also where and how the financial benefits of the system are distributed back to society. Finances are a cross-cutting theme in the SDGs and find explicit mention in both SDG 8 and 12. Financial aspects are explicitly identified under a standalone strategic pathway in IGIF with a focus on business model identification, development of financial partnerships, promotion of investment and funding sources to deliver the integrated geospatial information management, and the need to be able to measure and realize the benefits of the systems. The strategic pathway ultimately helps to raise awareness about the importance of understanding of the implementation costs and the required ongoing financial commitment necessary for maintenance.

It is important to promote the achievement of a sustainable economy, and economic justice through land administration systems that can be sustained and maintained on an ongoing basis. Land administration and management systems are one of the limited examples in the geospatial domain, that in addition to supporting administration and governance activities, have historically acted as a revenue generation tool for governments, be it through duties, tax, or charging for information. Therefore, the identification or development of land administration business models is essential. These must not only be sustainable and affordable for land administration stakeholders, but also generate value for society as a whole for the realization of sustainable revenue streams. This may involve using concepts such as pay-per-use or cost recovery mechanisms - however, it is important that any financing mechanism is instituted in a fair and responsible manner. It is also an imperative to broaden financial participation in land administration through the development of financial partnerships, for example with the not-for-profit sector or donor agencies or development partners, in cases where parts of a community may not have the means to readily access the land administration system. In all cases, but particularly those where land administration systems are neither established nor complete, clear articulation of funding sources and investment options is encouraged. Identifying and using methods for measuring the costs and financial value of land administration systems is also important.

A variety of tools from the domains of economics and finance are available to support financial understandings and management of land administration systems. These variously focus on budgeting methods, the role of donors, and finance models. Costing and Financing of Land Administration Services⁶² (CoFLAS), a guideline and set of methods allowing the exploration, identification and prioritization of costs for developing and running the land services, provides one example. Importantly, the model considers human capacity and strategic options. Additionally, Land Based Finance⁶³ (LBF) is an instrument by which local government expand their revenue base and generate funds that will help them realize their service delivery, infrastructural delivery and maintenance goals. Public-private partnership (PPP) methods and

⁶² <https://gltn.net/tag/coflas/>

⁶³ <https://gltn.net/land-based-financing/>

options are also a popular financing model. The International Finance Corporation (IFC) Standards⁶⁴ deliver basic guiding principles in regard to land based economic development and fair compensation. Tools such as ‘Valuing Unregistered Land’⁶⁵ and ‘Valuation of Unregistered Land: A policy guide’⁶⁶ inform and equip government with information of informal land markets.

Data

Land data is the core of any land administration and management system. Data cuts across all SDGs in terms of evaluation and monitoring of indicators - but also supporting the day-to-day activities of people and the interaction with built and natural environments. The linking role data plays between people and planet only increases with the growing use of ICT and web technologies. IGIF identifies ‘data’ as a standalone strategic pathway and calls for the establishment of fundamental data themes (forming part of a geospatial data framework), and custodianship guidelines for best practice collection, curation, management, and delivery of integrated geospatial information - that are appropriate to cross-sector and multidisciplinary collaboration. The overarching objective is to enable data custodians to meet their data management, sharing and reuse obligations through the execution of well-defined data supply chains for organizing, planning, acquiring, integrating, managing, maintaining, curating, publishing and archiving geospatial information.



Figure 8: United Nations Fundamental Geospatial Data Themes

Recognition of land tenure, land use, land value, and land development data - including elements relating to gender, conflict, and disaster - are fundamental geospatial data themes within any jurisdiction - and this data should be integratable with other fundamental themes. The land data may be sourced from a wide range of sources, scales and sensors - but, in all cases, should generally enable standardized identification of the spatial extent, time period, and people to which the right, restriction or responsibility pertains to. Defining characteristic of land data is the spatial and temporal extent, the need for appropriate spatial accuracy, the requirement to be temporally up-to-date, to be backed up and potentially insured by an authority. Without these elements, the data is quickly undermined in terms of societal use and relevance. Availability, accessibility, and interoperability, of the land data are also necessities for effective land transactions and management. LADM ISO 19152 (Land Administration Domain Model) and IHO S-121 (Maritime Limits and Boundaries) provide starting points for achieving the above goals.

⁶⁴ https://www.ifc.org/wps/wcm/connect/Topics_Ext_Content/IFC_External_Corporate_Site/Sustainability-At-IFC/Policies-Standards/Performance-Standards

⁶⁵ <https://www.rics.org/de/news-insight/research/research-reports/valuing-unregistered-land/>

⁶⁶ https://unhabitat.org/wp-content/uploads/2018/05/Guide_Valuation_unregistered_Land.pdf

To support the creation and maintenance of land data, data custodianship, acquisition, management, supply chain, curation, and delivery strategies and mechanisms are needed. These should consider cross sector and multidisciplinary issues - along with privacy and security concerns - and ultimately enable better ordering, integration and searching of land interest information. Spatial Data Infrastructure (SDI) standards and theories can support the development of these frameworks, as can IGIF more generally.

Whilst the importance of data cannot be understated, like other service sectors, it is increasingly recognized that land information systems and the services they support should be organized around the activities and service needs of people. A strong trend towards land transactions (e.g. transfer, subdivide, mortgage) being made available online and affordable to all people is observed, and encouraged by NUA, VGGTs, INSPIRE directive and FFP LA guidelines.

Innovation

Innovation in land administration is both opportunity and necessity. The emergence of ICT and web technologies challenge centuries old, procedures and techniques. SDG 9 recognizes the importance of innovation, particularly coupled with infrastructure - and continuing on - IGIF recognizes both these elements as a standalone strategic pathway. IGIF recognizes that technology and processes are continuously evolving; creating enhanced opportunities for innovation that governments, and other stakeholders, can use to quickly bridge the digital divide - and in the case of land administration - the cadastral divide⁶⁷.

Land administration innovation can be driven by societal pull on the one hand, and technological push on the other. Together these forces encourage process improvement, technical advancement, and the promotion of creativity and innovation.

In terms of societal pull, the concept of 'land rights for all' has led to the development of the 'continuum of land rights' and 'fit-for-purpose land administration'. This results in new techniques that re-concentrate land administration efforts on being flexible, participatory, achievable, upgradable, cost-effective, easy-to-use, and conflict sensitive, amongst other characteristics⁶⁸. A key principle is that different land interests can be mapped in different ways – using tools and techniques that best fit with the value and administrative requirements of the land interest. Whilst private and tradable rights generally require higher spatial accuracies, it is not always necessary or possible for some forms of land tenure to be spatially recorded. Likewise, different land interests can be recorded and registered in different ways. Another point is that whilst land parcels provide the predominant method of organizing land rights, restrictions and responsibilities, non-parcel land interests are increasing in number. These often relate to the natural or built environments (e.g. carbon rights, solar rights, biota rights, water rights, and so on). Society is increasingly creating land interests that are non-parcel in nature. These interests may be spatially defined as volumes, networks, points - and may have fuzzy spatial and temporal boundaries. The emergence of 'responsible land administration' that ensures new land administrative approaches actually enhance livelihoods and take time to recognize potential pros and cons within land administration initiatives is important in this regard.

⁶⁷ Bennett, R. M., Van Gils, H. A. M. J., Zevenbergen, J. A., Lemmen, C. H. J., & Wallace, J. U. D. E. (2013, April). Continuing to bridge the cadastral divide. In *proceedings of the Annual World Bank Conference on Land and Poverty* (pp. 8-11).

⁶⁸ Enemark, S., Bell, K. C., Lemmen, C. H. J., & McLaren, R. (2014). *Fit-for-purpose land administration*. International Federation of Surveyors (FIG).

In terms of technology push, low-cost GNSS, airborne platforms, and modern terrestrial systems and high-resolution aerial imagery dramatically impacted upon land administration techniques over preceding decades. More recently, the emergence of cloud technologies and widespread mobile uptake further influences the capture, storage, and dissemination of land rights and transaction information. Emerging technologies including 3D data models and visualization tools, artificial intelligence (including machine learning and deep learning), automated feature extraction, change detection mechanism, big data analytics, the internet of things, crowdsourced data, and blockchain will continue to provide opportunity and disruption. In all cases, each development requires assessment for the country context at hand.

Standards

Standards for land administration policies, laws, organizations, financing, transactions, and particularly data and technology are increasingly evident at national, regional, and global levels. The SDGs standardize the global development agenda and the ways and means indicators relating to those are selected and measured. IGIF seeks to ensure the adoption of best practice standards and compliance mechanisms that enable legal, data, semantic and technical interoperability, which are considered fundamental to delivering integrated geospatial information and knowledge creation. Standards also assist cost reduction and support removal of duplication and maintenance efforts.

FELA can be seen as a reference at international level, whilst highlighting the existence and value of standards at regional and national level. Significant contributions have emerged in land administration with regards to standards, particularly through initiatives of World Bank, UN-ECE, ISO, OGC and FIG, all at the global level. At regional level, initiatives such as INSPIRE demonstrate the potential for agreement amongst differing nation states. At national level, significant efforts at standardization and sharing are observed in NSDI initiatives and national land and property information strategies, taking advantage in developments with ICT and web technologies. Across all initiatives, the objective is to enable different information systems to communicate and exchange data through interoperability (legal, semantic, and technical). In this regard, the use of standards is strongly encouraged.

Cadastré 2014⁶⁹ provided an example of a strategic-level standard garnering significant uptake across national contexts. The document comprised of six (6) visionary statements and was translated into over 20 languages and greatly influenced the development of land administration systems. In parallel, tools variously supporting benchmarking of land administration agencies, including strategies, management, and operations functions were readily developed - with the 'Cadastral Template' tool and national datasets providing a simple blueprint for interoperability. The standard for parcel identifiers⁷⁰ provided a technical guide for the foundational issue of spatial identification of land rights. In the past, different agencies used different spatial identifiers: integration and efficiency demanded uniform units and identifiers to be adopted. More recent and broader in nature are the 'Doing Business'⁷¹ reports and 'Land Governance Assessment Framework'⁷² (LGAF) tool and country report - both with explicit components relating to land administration processes and data. The Land Administration Domain Model (ISO 19152) provides an ISO endorsed data model whereas the Social Tenure Domain Model (STDM), not ISO

⁶⁹ <https://fig.net/resources/publications/figpub/pub61/Figpub61.pdf>

⁷⁰ <http://www.unece.org/fileadmin/DAM/hlm/documents/Publications/guidelines.real.property.e.pdf>

⁷¹ <http://www.doingbusiness.org>

⁷² <http://www.worldbank.org/en/programs/land-governance-assessment-framework>

endorsed, provides a concept, a data model and a software tool to record all people to land relationships. The IHO S-121 standard focuses on maritime limits and boundaries. Further developments are emerging with regards to standards for the valuation of unregistered lands, 'Valuing Unregistered Land'⁷³ and 'Valuation of Unregistered Land: A policy guide'⁷⁴.

Partnerships

Partnerships are an inherent element of all land administration and management systems. In the contexts of the SDGs they gain importance: the SDGs cannot be achieved without effective cross-sector and interdisciplinary cooperation, industry and private sector partnerships, and international cooperation. IGIF recognizes the increased importance of partnerships in the context of geospatial information management systems, identifying them as a standalone strategic pathway, calling for a specific focus on a culture of establishing trusted partnerships, strategic alliances, and shared values relating to geospatial information management.

Regardless of the context, partnerships form the basis for effective land administration. This might variously include the creation and harnessing of strong relations within and between public sector, private sector (via PPPs), academia, civil society, nonprofit nongovernmental organizations, professional bodies, coordinating organizations, and international agencies and societies. Land administration stakeholders are found in each of these sectors: the types and nature of partnership building focused upon and depends on the country context.

Beyond core land administration functionality relating to land tenure, value, and land use, and land development, partnerships in land administration often extend into SDIs, and specifically NSDIs, when it comes to information dissemination and sharing. Here, the range of concepts, methods, and tools can be leveraged from within the land administration domain, to support trust, dissemination, use, and share with regards to land information.

The increasing role of non-government actors including in land administration sees them playing an active role in the creation, collection, storage, and dissemination of land administration laws, data, and transactions and perceived property rights⁷⁵. This is supported by the principle of subsidiarity and the emergence of ICT, and particularly web technologies. The network of partnerships requires clear identification articulation of roles and responsibilities and oversight. A key point here is that the data should remain with the agency or entity mandated to collect, manage and disseminate it.

Specific partnership models and tools to be considered at national, regional, or local levels might include PPPs (including build-own-operate, service level agreements), universal distribution and information sharing agreements, and even participatory mapping activities with community organizations.

⁷³ <https://www.rics.org/de/news-insight/research/research-reports/valuing-unregistered-land/>

⁷⁴ https://unhabitat.org/wp-content/uploads/2018/05/Guide_Valuation_unregistered_Land.pdf

⁷⁵ <https://www.prindex.net/>

Capacity and Education

Capacity development⁷⁶ is regularly recognized as a major focus area when it comes to achieving sustainable land administration systems. The issue cuts across numerous SDGs and is directly dealt with under Goal 4. IGIF also identified capacity and education as a stand-alone strategic pathway, requiring strategic attention in the context of sustainable geospatial information management systems.

The development of enduring knowledge and skills transfer in land administration is essential. This must be at the required level, for all land administration stakeholders, be they local, national, or international actors - and likewise variously based in government, private sector, academia, civil society, community or with the not-for-profit sector. This will necessarily involve the creation and use of targeted initiatives including capacity development, awareness raising and support of formal education programs, recognition and fostering of entrepreneurship, and also professional workplace training. Overall, the objective is to increase the awareness and level of understanding of land administration through both conventional and emerging means - including conventional skills development programs, context-based skills training, professional training, peer-to-peer learning, and inter-governmental training programs. Capacity development also include skills establishment and strengthening, sharing of cross-country experiences, and also incorporating nation-nation and interdisciplinary knowledge sharing.

Fundamentally, a base level of understanding of geospatial concepts and tools, and how they relate to land administration, should exist across a community and country-context. Whilst land administration professionals should always possess high level geospatial capacity, local communities with geospatial capacity are better able to use, advocate, and where necessary dispute, the land administration system. Formal education programs might not be necessary in these cases: advantage can be taken of information provision and social learning programs. Training materials on the VGGTs are readily available and accessible.

In terms of more formal land administration education, an increasing array of options is emerging. At primary and secondary educational levels, the use of geospatial tools in classrooms continues to increase with the development of ICT and web technologies. At tertiary levels, geospatial concepts and tools find greater use and uptake across multiple disciplines and domain areas. The role of conventional undergraduate and postgraduate geospatial programs to develop land administration professionals remains highly relevant and consistent for both developing and developed contexts. In developing contexts, a marked increase in the conversion of vocational programs to fully fledged degree programs are observed over the previous decades. Initiatives such as the School of Land Administration, a cooperation of Kadaster International and ITC University Twente, support capacity development at postgraduate levels in low income and middle-income countries - and focus on developing an interdisciplinary land administration skillset. North-South collaborative Research & Development (R&D) programs such as the European Commission 'its4land' project or the Network of Excellence on Land Governance in Africa (NELGA) project illustrate the push for PhD and R&D level capacity development. In this respect, high-level land administration capacity and expertise development is generally on the rise, although, cannot be said to keep pace with demand, particularly in the context of the 2030 Agenda. For this reason, a range of alternative methods are also recognized and advocated for.

⁷⁶ Capacity development is "The processes whereby people, organisations and society as a whole unleash, strengthen, create, adapt and maintain capacity over time" (OECD DAC, 2006).

Fast tracked or micro-credentialed methods include the use of Massive Open Online Courses (MOOC), as provided by USAID on land tenure and property rights, or by Technical University Munich on land management, support capacity building on a large scale. In other contexts, it includes the training of grass-roots surveyors⁷⁷, to support large-scale country-wide land administration projects, as utilized in Rwanda, Colombia, Indonesia and Ethiopia. In these cases, the role of professional land administrators is leading the curriculum development, delivery, and management of processes, approaches, data and methods.

Advocacy and Awareness

Advocacy and awareness are an essential element of any contemporary land administration project and resultant system. Land administration cannot succeed without stakeholder acceptance and support across society: advocacy and awareness activities can help to create and maintain this backing. All prominent global land policy initiatives mention the importance of stakeholder identification, development of engagement strategies, and actively implementing and evaluating communication initiatives. This includes the SDGs and VGGTs.

For IGIF, advocacy and awareness are recognized as a stand-alone strategic pathway. The strategic pathway recognizes that successful implementation of integrated geospatial information management systems relies on recognition and active participation from stakeholders and the general community. IGIF calls for engagement activities to be embedded and ongoing through the lifecycle of creation and implementation - in order to enhance the overall design and uptake of any geospatial information management system.

Increased recognition is needed from the land administration community that meaningful engagement with all land stakeholders is integral for the implementation of an effective land administration and management system. This includes actively undertaking stakeholder identification, planning and execution of engagement, undertaking integrated communication strategies, and monitoring and evaluation of those activities. Depending on the scale of system or project, this might include undertaking these tasks at local, national, regional, and international level.

Stakeholder identification includes identifying all relevant local communities, CSOs, NGOs, private, academic, government agencies - pertaining to the land administration program. Planning and execution activities should cluster stakeholders and identify the appropriate communication channels for sharing and engagement. This leads to the development and implementation of engagement strategies, and monitoring of those. In all these tasks, the objective is to deliver effective and efficient communication and engagement processes through the use of appropriate communication mediums to ensure informed public debates and decision making on land issues. Input from stakeholders is monitored and evaluated to ensure advocacy, empowerment, participation and the identification of locally and globally appropriate solutions.

⁷⁷ Also known as 'barefoot' or 'para-surveyor'. These practitioners know how to use specific tools to undertake a specific part of the land administration workflow. They are trained in a fraction of the time needed to become a conventional, fully trained surveyor. <https://www.gim-international.com/content/article/from-barefoot-to-air-foot-surveyors>

At the international level, FAO, UN-HABITAT and FIG provide concepts and tools to support advocacy and awareness on land administration matters. International NGOs and NPOs provide technical approaches to support engagement through mapping and registration activities. National level NGOs and CSOs provide other options and alternatives. At the local level, any initiative seeks to align with local norms, language and capacity when it comes to appropriate and responsible advocacy and awareness raising.

Conclusions

The Sustainable Development Goals universally apply to all countries and mobilize efforts to end all forms of poverty, fight inequalities and tackle climate change, whilst ensuring that no one is left behind. Considering that a significant proportion of humanity do not enjoy secure land and property rights, there is a need to accelerate efforts to document, record and recognize people to land relationships in all forms. Land administration relates people to land and informs on the 'how', the 'what', the 'who', the 'when' and the 'where' of land tenure, land use, land value, and land development and should be appropriate, accessible and affordable and recognize social, economic and environmental circumstances at the national and sub-national levels.

This Framework for Effective Land Administration with its nine pathways is an overarching policy guide and provides a reference for Member States when establishing, strengthening or coordinating its land administration and management system nationally or sub-nationally. It has been designed for both the developing and developed context. The nine pathways provide a mechanism towards effective leadership, advocacy, mobilization and actions to accelerate efforts to document, record and recognize people to land relationships in all forms and provide humanity with secure land and property rights.