

What is Land Administration? Exploring an inclusive definition.

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Key words: land administration, land management, land governance, definitions, inclusivity

SUMMARY

Land administration is the concept that is commonly used for systems, processes and structures that humans deploy to manage the Earth's resources locally, regionally, nationally and globally. Several definitions of land administration have evolved over the past decades. We interrogate the usefulness and appropriateness of these definitions in the light of developments in the Global South where the dominance of concepts imported from the Global North do not always find resonance. We draw on established literature, a series of workshops on land administration conducted in 2019, and inputs from members of the International Federation of Surveyors (FIG) Land Administration Education Working Group to examine the applicability of current definitions of land administration. The models put forward for land administration in the Global South are challenged by customary land management systems that struggle to conform to the normative framework of imported systems. We argue that the way we conceptualise land administration through definitions and modelling materially affects its fitness for purpose in many socio-political contexts, even where 'fit-for-purpose' land administration is proposed. This is because the conditions on the ground and why they cannot adapt are generally poorly understood. We propose a thorough review of how land administration is defined, understood and used globally, and suggest that change is necessary to maintain its relevance nationally and internationally.

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1 INTRODUCTION

Global attention is being placed on the need for effective stewardship and management of Earth-based natural and constructed resources. This is necessary for sustainable human development and the survival of our planet. Increased urgency arises in the light of global trends of population growth, climate change, sea level rise (Burns, Rajabifard & Shojaei, 2023), foreign direct investment in the Global South (Seo & Rodriguez, 2012), the need for tenure security, access to land and land-based resources (Williamson et al., 2010; Zevenbergen et al., 2013; de Vries, Bennett & Zevenbergen, 2015). Much of the literature on land administration argues that effective, responsible and sustainable land administration is the answer to many of the world's socio-economic and developmental challenges (de Vries, Bennett & Zevenbergen, 2015; UN-GGIM, 2019). The thrust behind interventions aimed at improving land administration has tended towards formal recognition of rights in land and the provision of a means of trading these rights (Burns et al., 2006; Burns, Rajabifard & Shojaei, 2023). For example, it is argued that improved land use management that is mindful of land tenure security for the rural poor will incentivise them to make wise and meaningful investments, particularly of time and resources. This may in turn contribute to food security (Rockson, Bennett & Groenendijk, 2013) and reduce household poverty (Nkonya et al., 2008). Improved land administration is also linked to the food and tenure security of indigenous communities. It may support addressing threats of climate change, deforestation and land degradation (Quan & Dyer, 2008). For urban and peri-urban areas, land administration is linked to addressing urban sprawl, tenure insecurity in informal settlements and access to basic services in conditions of poverty (Bennett & Alemie, 2016).

The evidence of many land administration interventions suggests that many of these claims have fallen short of expectations, particularly with respect to improved benefits for land rights holders (see e.g., Akingbade et al., 2012; Borzacchiello & Craglia, 2012; Griffith-Charles & Sutherland, 2013). Some interventions have deepened inequalities and heightened disputes (Verdery, 2003a; Amanor, 2019; Boone, 2019; Holland & Diop, 2022). Where positive countrywide and systemic interventions have been reported, e.g., in Uganda and Rwanda (Nkonya et al., 2008; Hughes et al., 2022), they tend to favour the elites in society who have or can access the capital to sustain private property regimes. In some cases, where people have been granted title, they cannot sustain the private property regime and revert to customary practices, raising questions about titling interventions (Kingwill, 2013, 2014, 2021). Interventions that do not take cognisance of the local contexts, norms, practises and world views have a high likelihood of unintended consequences that may be negative (Akrofi & Whittal, 2013; Zevenbergen et al., 2013; Barry & Danso, 2014; Furuholt, Wahid & Sæbø, 2015). Intended changes may undermine existing support systems and heighten insecurity due to the constraints of adaptation from customary to conventional systems of land administration, especially when land is exposed to the market (Amanor, 2019; Boone, 2019).

Definitions, understandings, and practices of land administration have evolved over time in response to societal shifts and major technological advancements. Despite increasing recognition of a range of environmental and social concerns around land rights, livelihoods and sustainable development (Enemark, McLaren & Lemmen 2021), the current definitions still tend to reflect the lenses worn by professionals trained according to the priorities and world views of the ‘Western’ world. There is a growing collective awareness among land surveyors and other professionals who work in the Global South (Dados & Connell, 2012) that there are some lacunae in these definitions. A disjunction is most markedly felt when it comes to conditions where agrarian economies and so-called ‘informal’, indigenous or customary human settlements are pervasive. Based on the groundswell of innovation occurring all over the world (IFAD, 2023), it is an opportune time to review the current definitions of land administration used by international and regional institutions, governments and concerned citizens. The paper therefore:

- 1) reflects on the role of land administration in the face of multiple global challenges (including socio-economic inequality, population growth, threats to biodiversity and climate change, when land is physically a finite resource (Tesfaye et al., 2023)),
- 2) proposes a review of the current definitions of land administration, and
- 3) suggests institutional elements and guiding principles for wider applicability.

Updating the definition of land administration — by those who have the power to define — is likely to increase the uptake of land administration and positively influence change. We argue for a more inclusive definition and understanding of land administration to generate inclusionary discussions and debate. The ultimate purpose of this exercise is to increase (a) the relevance of land administration and (b) the motivation for land administration reforms in regions where land governance is under strain and lacks capacity to stand up to many global challenges.

2 METHODOLOGY

The interrogation of terms and phrases is guided by employing the ANSI/NISO (2010) Guidelines for the Construction, Format, and Management of Monolingual Controlled Vocabularies. This was used by Çağdaş & Stubkjær in the construction of the Cadastre and Land Administration Thesaurus (CaLAtThe) (Çağdaş & Stubkjær, 2015) – see <https://cadastralvocabulary.org/>. The Guidelines specify steps in the formulation of a vocabulary as 1) term selection, 2) identification of semantic relationships, and 3) specification of these relationships. This paper revisits Step 1, which is performed using either the committee method, or the empirical method, or a combination of these as adopted here. The committee method relies on domain experts sharing their knowledge about terms and their relationships. The empirical method relies on published documents. The empirical method is reflected in section 4 of this paper while the committee method is reflected in Section 5.

The committee method informed the first two rounds of primary data collection. Three workshops were held in November 2019 in Pietermaritzburg, East London, and Cape Town (South Africa) respectively. The workshops were advertised through existing networks of contacts, who were encouraged to share the invitations widely, as well as through social media platforms. There were 10 participants at the first workshop, 11 at the second, and 19 at the third (see Table 1). All participants were also invited to complete a post-workshop online survey.

The workshops began with discussions about the definitions of land administration, land management, and land governance, followed by identifying the challenges associated with these, drawing on participants' experiences. The workshops were preceded by a presentation at the Western Cape branch of the South African Geomatics Institute (SAGI) in October 2019, attended by at least 37 South African geospatial practitioners. Although the format differed from the workshops, there was some lively discussion and interest shown.

Table 1 Representation of attendees at workshops that took place in South Africa, November 2019 (PMB = Pietermaritzburg, EL = East London, CT = Cape Town).

Organisation	PMB	EL	CT
Surveyor-General's Office	2	5	4
Chief Directorate: National Geospatial Information			2
Department of Cooperative Governance and Traditional Affairs	1		
Other government			3
Non-Government Organisation (NGO)	2	3	1
Independent researcher	2	2	2
Professional (SAGI)	1		
Academics	2	1	7
Total	10	11	19

The second round of data collection, also using the committee method, was through the FIG Working Group on Land Administration Education. This Working Group is constituted for the period 2023 – 2026. Part of its mandate is to review land administration curricula around the world to identify commonalities. Members were asked in July and August 2023 to contribute their ideas of what 'land administration' means. Various platforms were used for engagement including email, WhatsApp and online meetings of the Working Group. Six members responded, but two quoted published definitions (see below), hence four responses are recorded here. Two respondents are academics, one is a retired land surveyor with many years of experience, and one is an independent researcher with a background in social science.

Section 6 of this paper collates the data collected from both the committee and empirical methods, identifying various themes. It presents a critical review of the definitions of land administration using a Global South lens that is sensitive to inequalities and the needs of the poor to land and land-based resources (especially in developing countries). It is also cognisant of power relations and the lasting effects of colonialism/imperialism on land administration.

3 WHAT IS LAND?

The natural features and resources of the physical Earth above and below the surface, as well as the built environment and resources, are together considered by society at large as 'land'. Williamson et al. (2010) extend this definition to include the marine environment. In reflecting the need for good land governance in South Africa, Fisher and Whittal (2020: 812) provide a definition of land that extends the conception to offshore, underground and airspace resources to the extent of the area governed by a nation: "Land is taken to include the solid earth, coastal water, solid earth below coastal water, fresh water and the air space above these ... [including] ... any part of the sea and the seashore."

Although more extensive, such a definition is limited to that which is within the boundaries of a sovereign state. A definition that includes areas and volumes outside of such a geospatial constraint is required. At an international level, administration of land and land-based resources needs to extend to include the high seas and seabed, space above the Earth's surface (even including the atmosphere) beyond national governance boundaries. It should also include areas and volumes that are not within national sovereignty, such as Antarctica and outer space (satellites and the Moon at least). These aspects are all parts of an interconnected set of elements, and all work together as a system ("System Earth" - see Steffen et al., 2020). As such, 'land' should be broadly defined to include "not just the surface of the Earth but also the air above and the spaces below (including the oceans, lakes, rivers, and other bodies of water)" (Motswenyane, Cooper & Coetzee, 2023: 1). A broad definition of land rejects the conceptual boundaries between onshore and offshore, and above and below ground environments. It includes areas that are increasingly subject to exploitation due to improved technology and resource scarcity, as well as areas now valued in their natural state. The governance of Earth's resources should be systemic, and should be applicable across a range of geographic, social and political systems.

Additionally, land is understood as not just physical; our understanding includes a cognitive component (Williamson et al., 2010) that reflects the intangible value of the relationship between humans and land (emotional and spiritual aspects, and land as a sense of place / belonging (Lentz, 2007)). Thus, 'land' should be understood to refer to far more than 'dry earth'. The concept incorporates all of physical space and the values humans attach to this. Our understanding of land administration should reflect such an understanding of land.

4 WHAT IS LAND ADMINISTRATION? AN EXPLORATION OF THE EVOLUTION OF LAND ADMINISTRATION DEFINITIONS

In this section, we present several definitions of land administration that have been posed over the last decades with a view to showing how the understanding of land administration has evolved (a similar review can be found in Adam (2023)). Past doctrines of land administration tended towards a narrow construction comprising functions that support land rights titling, land valuation and taxation, and regulate land use (Dale & McLaughlin, 1999). There was a heavy focus on a state-sanctioned cadastre and market-based understanding of land. More recently, the focus has shifted to be inclusive of many other functions and a broader understanding of the value of land (Lemmen et al., 2021). There has been a drive for more inclusive approaches to land administration among international bodies. International 'soft law' has developed in the form of aspirations, goals and principles using a strongly human rights orientation to land administration, as well as concerns about climate change. These are proliferating under the guidance of United Nations-related bodies, especially under the rubric of the Sustainable Development Goals (SDGs). Many other international organisations are active in advocating for innovations in land administration. Examples are the World Bank, the International Federation of Surveyors (FIG) and a range of NGOs engaged with equitable land rights, rural development, and environmental concerns. New perspectives on land governance suggest that the dominant vision of land administration is not easily translatable to the conditions in the Global South. The Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGT) compiled by the Food and Agriculture Organisation of the United Nations (FAO, 2012) is perhaps most illustrative of

the new thinking. The VGGT, by embracing unregistered, customary and indigenous rights, has been influential in shifting the international discourse towards a more globally applicable approach to land administration.

4.1 UNECE definition

We begin with the United Nations Economic Commission for Europe (UNECE) definition of land administration. It is not the first formal definition (Adam (2023) attributes this to Nichols and McLaughlin (1990)), but it is well-established and oft cited. UNECE defines land administration as (1996: 14):

... the processes of recording and disseminating information about the ownership, value and use of land and its associated resources. Such processes include the determination (sometimes known as the “adjudication”) of rights and other attributes of the land, the survey and description of these, their detailed documentation and the provision of relevant information in support of land markets.

The UNECE definition was modified from previous conceptions about land administration during the mid-90’s when there were many tenure interventions in eastern and central Europe. At that time, many countries were in transition from communism to a market economy and liberal democracy; a process not without its detractors (see e.g. Verdery, 2003b). While the definition is sufficiently expansive to find broad global acceptance, it is accompanied by assumptions that reveal a bias towards market-based economies with primarily commercial agriculture and liberal constitutions that acknowledge human rights (UNECE, 1996).

4.2 FAO definition

The FAO subsequently became involved in conceptualising ‘good governance’ of land tenure. They define land administration as (FAO, 2002: 12):

... the way in which the rules of land tenure are applied and made operational. Land administration, whether formal or informal, comprises an extensive range of systems and processes to administer land rights ... land use regulation ... and land valuation and taxation.

The FAO defines land tenure as “the relationship, whether legally or customarily defined, among people, as individuals or groups, with respect to land” (Ibid.: 7, emphasis added). Linking land administration and land tenure in this way added new value by emphasising the relational aspect of the people-land connection. This quality of land tenure has since become an element of the evolving understanding of land administration, as discussed below. The FAO conceptualises land tenure in terms of a ‘rules-based system’ and as an institution – “the rules invented by societies to regulate behaviour” (Ibid.: 7). With its emphasis on application of the rules of land tenure, this definition emphasises the actionable and executive nature of land administration. Other authors see rules in terms of how land rights are allocated within societies, or the “terms and conditions on which land is held, used and transacted” (Adams, Sibanda & Turner, 1999: 2). A big difference between UNECE and FAO in their conceptions of land administration is in UNECE’s focus on registering/recording and disseminating information about land, whereas the FAO focuses on land tenure, its rules and how they are applied and recognised.

Land tenure is differentiated from land rights in that the former refers to how those rights are held (e.g., leasehold, title, deed, certificate, and in terms of customary law), while the latter refers to what can be done with land (Hull, Kingwill & Fokane, 2020). Land rights can be considered in terms of Honoré's (1961) well-known set of rights and incidents of ownership: the right to possess, to use, to manage, to the income (the right to take the fruits), to the capital (the right to alienate, to destroy), to security, the incident of transmissibility (anticipate the enjoyment of that land through expected inheritance), the incident of absence of term (right is perpetual), the prohibition of harmful use, the liability to execution (raise a mortgage), and the incident of residuary (alienate limited real rights).

4.3 Land Administration for Sustainable Development

Williamson et al. (2010: 27) refine the UNECE definition to “the processes of recording and disseminating information about ownership, value, and use of land when implementing land management policies.” This brings land management and policy into focus, which harks back to Nichols and McLaughlin (1990). Land management is defined by the UNECE (1996: 13) as:

the process by which the resources of land are put to good effect. It covers all activities concerned with the management of land as a resource both from an environmental and from an economic perspective.

Enemark (2005: 1) expands on the UNECE definition to include “all activities associated with the management of land and natural resources that are required to achieve sustainable development” (emphasis added). Noting that the three pillars of sustainable development are social, economic and environmental, Enemark's refinement adds the social perspective that was missing from the UNECE definition of land management. Thus, Williamson et al. see land administration as recording and sharing land-related information for the purpose of sustainably managing land and its associated natural resources. They take an overtly market-based approach but acknowledge that individualised titling may not be required to realise this, though secure access to land is said to be required. The focus is on the management of a system of land rights that includes a broad range of functions (allocation of land rights, delimitation of land parcels, recording land-related information, adjudicating land-related disputes, procedures around land transactions, etc.). Williamson et al. (2010: 28) describe these functions as “a widely agreed framework for approaching land administration”, but note that an even broader scope is required for sustainable development. To this end, they suggest that the scope of land administration should be broadened to include: procedures for public engagement; land management restrictions; technologies for land management and information; support for land markets and utilities management; monitoring and evaluation processes; processes for sustainability accounting; and accommodation of the different ways that the intended beneficiaries of land administration think about land (acknowledging the cognitive dimension of land). They note that even the most highly developed nations struggle to find the human resources to realise a land administration system that adequately addresses these needs for sustainable development.

4.4 Land Administration Domain Model

The Land Administration Domain Model (LADM) takes up the FAO's theme of people-land relationships in their definition of land administration (ISO, 2012). The two main functions of land administration are described as, firstly, to keep the contents of the relationships between people and land updated, and secondly, to provide information about these relationships. The

UNECE definition is hence amended in the LADM to the “process of determining, recording and disseminating information about the relationship between people and land” (ISO, 2012).

This relationship is linked to land tenure, a “main characteristic of [which] is that it reflects a social relationship regarding rights to land” (Ibid., emphasis added). Unsurprisingly, the LADM definition of land administration (as an ISO standard) is accepted in the CaLAtThe and is drafted according to the ANSI/NISO (2010) Guidelines. It notes that the functions of land administration may be performed under the organisations responsible for the cadastre and/or land registry, either as separate or unified entities.

4.5 Framework for Effective Land Administration

The theme of relationship appears again in the Framework for Effective Land Administration (FELA) (UN-GGIM, 2019: 2):

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. Land administration systems are the basis for recording the complex range of rights, restrictions and responsibilities related to people, policies and places.

FELA is intended as an overarching policy guide for the development, renewal, reform, strengthening, or modernisation of land administration and management systems. Effectiveness is said to proceed from the provision of access to and security of land rights, mitigation of land-related issues that trigger conflict, and by ‘leaving no one behind’ (Ibid., with reference to the SDGs). Hence, effective land administration systems should increase the proportion of a population with tenure security; develop confidence, trust, safety, security and peace; promote land markets and economic development; contribute to smart and resilient societies; cater to all circumstances, situations and people; and promote preparedness and resilience.

4.6 Widening the scope

Hull, Kingwill and Fokane (2020) embrace the LADM definition (ISO, 2012) and add that, at the most basic level, land administration can be conceived of as the operational component of land governance in pursuance of national land policy goals, plans and strategies. This consideration brings both land governance and land policy into focus. (It is worth noting that Dale and McLaughlin (1988) linked the formulation of policy with land management some 35 years ago.)

- Land governance is concerned with the ability to make and administer rules, mechanisms, policies, processes, and institutions by which land and natural resources are accessed, used, controlled, transferred, and managed (Amanor, 2012; Enemark, 2012; Hull, Kingwill & Fokane, 2020). It covers all the activities associated with land and natural resource management, preferably to achieve sustainable development.
- As part of a country’s national development plan, land policy is a high-level instrument (possibly second only to the state constitution) for stating the strategies and objectives for the social, economic, and environmental use of land (Dale & McLaughlin, 1988; Törhönen, 2004; Enemark, 2005) and hence embodies the country’s vision for how land is understood, governed and managed (Hull, Kingwill & Fokane, 2020).

Fisher and Whittal highlight the role of land policy in their definition of land administration as an “operations management function to administer and implement land policy strategies” (2020: 812). They note (Ibid.) that this “incorporates the administration, or partial administration, of elements such as land tenure systems, natural resources, environmental planning, utilities and transportation infrastructure.” Although “government remains the agency responsible for designing, monitoring, and reforming the overall [land administration] system” (Williamson et al., 2010: 28), it is not only the government that is responsible for land administration activities (Hull, Kingwill & Fokane, 2020). Land administration can be the responsibility of individuals, communities, civic organisations, traditional authorities, local or national government, and international regional and global bodies (such as the African Union, European Union, and the United Nations).

Simply by occupying a piece of land, people stake their claim to it and hence are carrying out a function of land administration (especially when, in the absence of title deeds or other proof of land rights, their absence from the plot may result in their loss of land rights). ... By planting crops or erecting a fence on land, [people] are signalling [their] rights to use and occupy land. (Hull, Kingwill & Fokane, 2020: 3)

The above quotation applies in societies in which occupation is recognised as conferring rights/interests in land. There may be a wide range of government and other authorities ratifying land rights, providing land tenure security, and engaging in land administration functions, such as land allocation, land development, land valuation, and land use. Those authorities might be legal and legitimate, or illegal/extra-legal/illegitimate, and may thus include local government, local community, traditional authority, and even ‘slumlord’. Hence, “land administration is happening all the time in multiple different ways and it is everyone’s responsibility” (Hull, Kingwill & Fokane, 2020: 4).

5 WHAT IS LAND ADMINISTRATION? RESPONDENTS’ VIEWS.

5.1 Workshop responses

It was generally agreed by the workshop participants that land administration forms the operational level of land governance / administration systems. A shift was noted to be taking place from the purely technocratic to a more socially sensitive understanding of land administration, in line with the physical and cognitive understandings of land presented above. It was also agreed that administration is driven by policy and legislation, and that these are not value-free. Administrators, it was noted, should likewise be informing policy because they are the ones who see the needs and benefits first-hand and understand whether policy is working or not.

Workshop participants discussed the differences between land administration, management, and governance. These were identified as over-arching concerns, though which is a function of the other was debated. It was agreed that land management includes maintenance of systems and structures, monitoring, and resource management. Land governance was seen as the ways in which things are done, especially decision-making concerning laws and policies and their implementation. Land governance binds together the components of land administration that have become distributed over a range of different institutions and government departments.

There was an agreed need for clear and simple policies, procedures, and institutions, all of which speak to the need for good land governance as an over-arching requirement. It was cautioned that misinterpretation of terminologies can reinforce unhelpful silos, but broad agreement on concepts was important. There were suggestions that we should move away from some core conventional terms such as ‘cadastre’ because they have developed negative connotations in some quarters. For a more consensual understanding and a broader scope, it was felt that a shift in thinking and a new lexicon ought to be developed.

It was suggested that understandings of land administration should not only be conceived in terms of land tenure, land information, or the cadastre as these limit our understanding of its breadth and depth. The wide scope of land administration is evident in how it has permeated the SDGs and transcended the conventional structures associated with land administration to now straddle local, district, and national levels of government. No single profession can lay claim to land administration because it cuts across disciplinary silos, ideally drawing disciplines together. Delivering effective land administration involves multiple components of government, and in many cases includes the involvement of civil society organisations, traditional authorities, and even supranational organisations. The conception of land administration should also transcend the formal/informal continuum of land tenure and should apply equally to both the ‘visible’ / formal and ‘invisible’ / off-register systems of land-based rights and interests.

One participant suggested that the act of registering an individual's birth is an act of land administration because it ties that individual to the (country) land parcel, with all the rights, restrictions and responsibilities that citizenship conveys. That tie at the level of state governance is severed upon their death with the registration of a death certificate because the individual is removed from the national register of persons (although their status as citizen may confer additional rights to the country for descendants). In African cultures this does not mean the loss of the tie to the earth; kinship groups’ identities are bound up with their ancestors. In some African cultures, the tie of an individual to the land is graphically portrayed in the burial of the placenta or umbilical cord at the family home after a child’s birth, representing the individual’s spiritual and social connection to the land. Similarly, graves are used as proof of familial ties to the land. Graves are, in a sense, a form of landholding that transcends death. Through effective governance, individuals’ rights to all the benefits of citizenship in a country, including the right of domicile, are recognised. Ineffective land administration denies people the ability to realize their recognised birth land right. The same is true of registers of addresses that link people to municipalities, traditional areas, or land parcels.

Participants also discussed how land is understood, again expressing the view that it should include social, political, and emotional aspects. It was acknowledged that effective land administration should consider all rights and interests associated with land, such as water, mining, forestry, and agricultural interests. Instead of different government departments all developing their own policies in silos, effective land administration should bring these interests together under an overarching system of systems. Using existing technology, it is possible to have all the information related to a land parcel integrated and easily accessible using one interface: a ‘one-stop-shop’ approach.

The complexity of concepts, tenures, and systems involved in land administration presents a big challenge to understanding and articulating the meaning of land administration. The challenges are compounded in rural areas under traditional governance where there tends not to be a one-to-one relationship between land parcels and rights/interest-holders. A one-on-one relationship is generally a core principle of formal land administration systems and when these are not present, there is a disconnect between formal and customary systems of land governance. In customary areas the relationship may be many-to-many and time-varying. The importance of acknowledging and investigating the historical and socio-spatial context in any area of intervention was highlighted as necessary for fair and just land administration and as a means of unpacking the complexity of existing land relationships. For this, a ‘land rights enquirer’ who explores all existing relationships might be necessary.

5.2 Working group responses

Members of the FIG Working Group on land administration were asked for their opinions on what land administration entails. Their abbreviated responses are presented in Table 2.

Table 2 What does land administration mean to you? Responses from the Working Group.

Respondent 1	Land administration is the processes run by government and other parties (including informal parties and parties not recognised by the state, regional, local government) related to land tenure, land value, land use, and land development.
Respondent 2	Land administration is a process of determining who has what interests to which land and managing information about it for land management purposes in a given societal context.
Respondent 3	Land administration is the rules of the game with respect to ownership / rights, use, and trading of land. The rules of the game cover things like the following: policy, laws and regulations; institutional organisations, bureaucratic arrangements, and procedures to be followed; powers, standards, services to be provided; appeal systems etc. The rules of the game tend to develop historically over time and how these develop in law, and bureaucratically, tends to influence who is responsible for what, administers what, and whether there tends to be high largely independent silos or a more cooperative and integrated approach.
Respondent 4	Land administration is a moving concept/practice and cannot really be pinned down. The common denominator is how we understand human-land relationships in relation to space (land, sea, atmosphere) and how we regulate that in a way that is just and respectful to all humans and the environment; that appreciates the interconnectivity of all natural elements including human interaction with them; that treats all humans as equal before the law; and disassociates from any ideology (e.g. privatisation or communalism).

The first two responses indicate that the responsibility for land administration does not only rest with government, but it can be carried out at multiple levels. Respondent 2 highlights the relational aspect of land administration (“who has what interest to which land”) while

Respondent 1 refers to the breadth of land administration functions as described in the Land Management Paradigm (Enemark, 2005). Respondent 2 also highlights the land information management aspect of land administration, per Dale and McLaughlin (1988) and Nichols and McLaughlin (1990).

Respondents 3 and 4 offer different views to the above. Respondent 3's response harks back to the FAO definition (the "rules of the game" can be likened to the "rules of land tenure"). He lists a number of ways in which these rules are applied and acknowledges that the rules evolve over time, much like the definition of land administration has evolved over the past decades. In addition, he drew attention to the training and education requirements for land administrators (not included in the quotation above), acknowledging that these are influenced by the legal environment and requirements of professional bodies.

Respondent 4 also draws attention to the evolving nature of land administration and its role in facilitating the relationship between people and land, with an emphasis on justice, human rights, and responsible stewardship of natural resources. She acknowledges the broader understanding of land given above and suggests (not included in the quote above) that there is a need for more empirical research to (a) increase our understanding of why people do what they do with regard to managing their land; (b) discourage pre-ordained assumptions; (c) avoid putting form before function; and (d) understand the role of the state in land administration.

6 WHAT IS LAND ADMINISTRATION? EXPLORING AN INCLUSIVE DEFINITION

Literature about land administration reflects that early conceptions of land administration functions are core to delivery of the multipurpose cadastre which includes land rights, land tenure, land use and planning, land valuation and taxation, and the overall management of these. Later conceptions give primacy to collection and dissemination of land information within a formal system. Land tenure security was linked to human rights, housing/shelter, food production and the land economy in a market-based system.

Development of the concept of land administration focussed on its functional role – rules and their application – strongly aligned with land governance. These focused on the relationship between people and land, extending the broad inclusion of human rights to acknowledging individual and collective relationships with the land. Land tenure – the way in which land / resources are held – is distinguished from land rights – what the holder may do with the land and land-based resources. As before, management is seen as an overarching operation to manage two pillars of the environment and economic resources associated with the land. A third pillar is added as the social aspects that should be considered in land management, introducing the need for public engagement around different conceptions of land.

It would seem that a common thread in most conceptions of land administration is that it is an essential function in the execution of land policy and in land governance. While previously it was seen as the sole prerogative of governments, there is a notable shift to include the roles played by individuals, communities, civic organisations, traditional authorities, local or national government, and international regional and supranational bodies in land administration.

From the foregoing, we suggest that an updated definition is informed by the following:

- 1) It is critical to properly address the institutional elements of land administration, since land administration is first and foremost a matter of governance.
- 2) Land administration is a complex system comprising many elements and moving parts that hence cannot be reduced to first principles.
- 3) Definitions should avoid strongly normative principles as these are usually context-specific (e.g., liberal democracy that in turn becomes the criterion of ‘good’ governance).
- 4) Aspirations, goals and principles are an important aspect of building land administration regionally or nationally, but these are best left to the policy level.
- 5) Governance, policy, law and land administration systems are not value-free as they reflect the prevailing norms in any society; land administration will, however, naturally be obliged to follow Constitutional principles, for example, administrative justice, equality before the law and respect for recognised rights (including occupational rights, right to culture, gender, equality, and sexual orientation). Even in the absence thereof, a well constituted land administration system will automatically strengthen rights and equality.
- 6) The rigour of land administration will be bolstered by a holistic environmental systems approach that embraces the interconnectivity of all human interaction with the natural elements within a universal understanding of sustainability.

Secondly, we suggest that an updated definition of land administration should be informed by a conscious adherence to the most effective institutional configuration of land administration in a given context, given it is an aspect of governance and public administration where institutional linkages are paramount. The following institutional elements ought to be taken into consideration:

- 1) Land administration fulfils the regulatory function of human relationships and actions in relation to socio-spatial elements of human settlement and the natural world.
- 2) Land administration is best understood as an aspect of public administration, where the state is a key enabler but not the sole actor.
- 3) Land administration is an operations management function that arises out of land policy and law; the operational aspects are the heart of land administration, while policy and law are the head.
- 4) Land administration is multi-disciplinary, inter-governmental and multiplex; to be effective, it requires harmonisation and synchronisation of the various elements in policy (direction), law (sets of rules and regulations) and administrative systems (structure, processes and organisations, such as departments, units, supranational bodies etc).
- 5) Effective land administration requires socio-economic and political stability, legislative and executive competency, capacity, coherence, and correspondingly appropriate technical support; all of which mean that the state’s role is crucial.
- 6) Effective land administration is used by the people it serves; the most efficient design may not be effective. This understanding requires transcending the conventional binary of formal vs. informal, recorded vs. unrecorded, registered vs.

- unregistered and should include all rights and interests associated with the land, not only ownership and limited real rights.
- 7) Land administration includes the identification of spatial elements that are not parcel-based or polygon dependent; it should be able to measure complex socio-spatial relationships such as overlapping rights and interests, intergenerational rights and seasonal rights.
 - 8) Effective land administration encourages active roles in civil society, such as various local organisations, civilians, civics, NGOs, body corporates, companies, professionals, etc.
 - 9) Roles not conventionally associated with land administration, such as registration of births and deaths and administration of deceased estates, link individuals to the land of a state and should be seen as acts of land administration, which transcends the common, narrow conceptions of land tenure, land use, land value and land development.
 - 10) Land administration at national level includes all resources within the sovereign area or volume of land of the nation including offshore, underground, and above ground areas and volumes; land administration at international level ideally considers the Earth as a system including all areas of the oceans, seafloor, continents, airspace, orbital space etc. to manage the impact of humankind on the Earth as a natural system.

7 CONCLUSION

In this paper we explore and share ideas about the meaning and definition of land administration. We do this to spark debate about a (yet to be determined) revised definition of land administration that is fit for current and future purposes. A revised definition should reflect progressive understandings which challenge some of the conventional assumptions and ideas of prior generations of land administration thinkers in line with new global developments. It should balance the contexts of land governance in the Global South with those in the Global North. In the era of globalisation, it needs to be intentionally international. Finally, in the light of a surge of interest in land administration beyond the Western hemisphere, land administration is required to respond to prevalent legal systems in countries with significant legal pluralism and multiculturalism, including customary norms of land governance.

The research process followed the directives of the ANSI/NISO (2010) Guidelines which recommends a combination of an empirical method using secondary sources (Section 4 of this paper) and a committee method in which domain experts share their knowledge about terms and their relationships (Section 5 of this paper). Our reflection of the development of understanding of 'land administration' in Section 4 of this paper also aligns with the specification for historical notes (ANSI/NISO 2010).

The evidence gathered suggests that current conceptual understandings of land administration have advanced in many respects beyond existing definitions. Some have embraced inclusivity but these tend to be overly high level and vague and thus open to interpretation that may do little to clarify the meaning and role of land administration in reality. The time is ripe for further development of collective thinking towards a revised definition of land administration suitable for our time.

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