

Comparative Land Data for Land Administration Innovation

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SUMMARY

Access to land data is crucial for good land governance in support of transparent land administration systems, support informed decision making and empower individuals and society. Measuring the access to land data fills a critical gap in the land sector, as our society grows ever-more dependent on data for decision-making and problem-solving.

Developing a comprehensive indicator on the accessibility of land data that is globally comparable (SOLIndex) is an important step in supporting good land governance. The maturing links between open data and land administration is further enhanced by the SOLIndex and complements global efforts to make land data more open and comparable. It tells us about the degree of openness of land information at the global and country level. It also allows us to better understand national and global capabilities in opening up data, particularly in government. Finally, and perhaps more importantly, the SOLIndex serves as a diagnostic to inform us about the most actionable interventions needed to improve access to land data at country and global levels?

The conceptual framework for the SOLI index integrates our understanding of land data, open data and land administration into a systematic and intentional process that connects these constituent components into a coherent whole for describing the state of land data globally. The SOLIndex is developed using a human rights approach to the development of indicators.

Preliminary results indicate that while more land data exists than is initially anticipated, the data remains fragmented, unstructured, poorly documented and often not open, although public in various ways. This is still very much work in progress and no data presented here should be treated as final or conclusive.

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Extended Abstract

1. INTRODUCTION

In 2019 the Land Portal developed the State of Land Information (SOLI) [1] research methodology which was complemented in 2020 with the Open Up Guide for Land Governance (OUG) [2]. Together they aim at assessing the availability and accessibility of land data and promote the opening up of land data globally. This new indicator builds on the SOLI and OUG processes. Measuring the openness of land data fills a critical gap in the land sector, as our society grows ever-more dependent on data for decision-making and problem-solving. At the same time the Land Portal had partnered with the Global Data Barometer (GDB) to develop the Land Module [3] as part of a collaborative project that aims to measure the state of data in relation to land tenure and on land use, as well as on uses of land data to support work on gender and inclusion. Informed by the experience of developing and tracking the state of land data through the GDB land module, the SOLI and the OUG, the Land Portal considers it necessary to expand and broaden the scope for the development of a comprehensive **Open Land Data Indicator - SOLIndex**.

The SOLIndex complements global indicators on openness and supports efforts to make land data more open. It adds value to the existing OUG and SOLI initiatives of the Land Portal and makes the research findings more actionable and implementable. The SOLIndex can tell us about the degree of openness of land information at the global and country level. It also allows us to better understand national and global capabilities in opening up data (particularly in government, the key custodians of land data). Finally, the SOLIndex can serve as a diagnostic and inform us about the most actionable interventions needed to open up land data at country level.

2. CONCEPTUAL FRAMEWORK

The development of the SOLI index draws on a number of theoretical frameworks for the development of indicators. The SOLI index draws on three core theoretical framings for the development of indicators, for understanding land administration and defining land data. The conceptual framework is the glue that integrates our understanding of land *data*, *open data* and *land administration* into a systematic and intentional process for connecting these constituent components into a coherent research study [4] that describes the state of land data globally. It provides the ontology and builds upon existing knowledge while creating and contributing new knowledge across the land and data communities. As we develop new knowledge and deepen our understanding of the ecosystem, we continue to refine, improve and integrate new aspects to the conceptual framework. This iterative nature and increasing sophistication of the conceptual framework [5] is evident from the development and deepening of our understanding, since the first SOLI research in 2019 and the publication of the Land Module in 2022, to the SOLIndex which is currently under development and how it

might look in 2024/2025 as part of global land data initiatives. The indicators are developed using a human rights approach to the development of indicators [6]. The core elements of the SOLIndex are derived from the related theoretical frameworks for **land administration, land data and open data**.

3.1 Land Administration

Understanding the state of land data is informed by key questions such as data for whom, data by whom and data for what purpose? The Land Administration for Sustainable Development [7] & Framework for Effective Land Administration (FELA) [8] provides us with the necessary understanding of the land administration functions, custodians and uses of land data. It provides an understanding of the core land administration functions and a new land management paradigm that responds to global drivers (climate change) and identifies an enhanced role for land administration in support of sustainable development. The FELA provides a guideline for how countries may “*develop, renew, reform, strengthen, modernise, or monitor land administration systems*” and provides actionable pathways for supporting the achievement of the sustainable development goals, recognising that “*data relating to land tenure, land use, land value, and land development are fundamental geospatial data themes within any jurisdiction*”.

3.2 Land Data Framework

The *Integrated Geospatial Information Framework* [9] is a framework for creating an enabling environment for governments to be able to implement practical geospatial information initiatives. It advocates for and supports the use, sharing and access to spatial data and information in support of improved service delivery, decision making and innovation in support of national development. *The Global Fundamental Geospatial Themes* [10] provides the fundamental geospatial data themes including links to data on land tenure, value, use, and development. Fourteen fundamental themes have been identified. The focus is on fundamental data that cannot be derived from other data sets and that represent spatial phenomena on the surface of the earth. These data themes satisfy “*urgent need for global fundamental geospatial data that could be harmonised in order to enable the measurement, monitoring and management of sustainable development in a consistent way over time and to facilitate evidence-based decision making and policy-making*”.

3.3 Open Data Frameworks

The open data frameworks (Open Data Principles & FAIR Principles) provide the understanding for how that data and information can be made accessible and available in a transparent and equitable manner. Several open data frameworks and articulations exist to define and capture the important aspects and principles of openness, equity and transparency which are valued by the open data movement. In 2007, eight principles of open government data were defined by a gathering of more than 30 organisations in California [11]. In 2010 these principles were reviewed and subsequently defined in ten open data principles [12]. Similarly in 2015 the Open Data Charter adopted 6 open data principles to describe digital data that can be freely shared and reused [13]. Reviewing and adopting these principles

allowed us to identify ten open data criteria with which to assess the availability of open land data globally.

3.1 Information as a Human Right

Access to information is considered a fundamental right as well as being an enabling right that allows the achievement of other fundamental rights. The use of indicators is critical to track and enable the achievement of human rights. At the same time, it is recognised that initiatives to improve access to data and information are not exempt from the current and historic dynamics of power, equity, justice and sovereignty. As developers of methodological tools and indicator frameworks we must reconcile these tensions and make sure that human rights and fundamental freedoms are protected. Integrating human rights approaches [6] in the development of tools that have political, social and economic ramifications is not only right, but also crucial for ensuring good outcomes.

3. DATA COLLECTION

Country researchers to perform desk research and consult with key informants to assess the availability of the various data categories in the study. The exercise will result in the SOLIndex as well as a country level data matrix.

The SOLIndex may be used to tell us:

- What is the degree of completeness of land information in a Country?
- What is the degree of openness of land information in a Country?

It is intended to be used as a diagnostic tool for any land governance work that requires access to data and information. The Land Portal intends to expand the use of the SOLIndex to conduct a thorough open data-compliance assessment that is globally comparable. Based on identified gaps it may assist in strengthening the capacities of the identified information providers to make their information more discoverable.

4.1 Key information categories and definitions.

The availability of land information will be assessed based on 4 key categories which are based on Modern Land Administration Theory and respond to a variety of global initiatives and frameworks to improve land governance. Modern land administration theory [7] prioritizes the management of land and associated resources to respond to national and global imperatives such as poverty reduction, sustainable agriculture, sustainable settlements, economic development, conflict management, and climate change. The data needed for the good governance of land must now include data on the core land administration functions of land tenure, use, development and value. In addition, the land-related data, information, and indicators necessary for monitoring performance need to be readily available, timely, standardized, and widely distributed to increase their impact. This information below will guide researchers when conducting the scoping exercise on a country-level.

4. FINDINGS

To calculate SOLIndex score for a country, assess and score the completeness and openness of the information about a country's legal framework for land governance, its land tenure data, land use data, land development data and its land value data. The SOLIndex examines each land data category in detail, identifying which elements are available in a digital format, how these comply with international open data criteria and assesses their completeness and openness. From these results a country's SOLIndex score is calculated. The scoring ranges from 0 (not open) to 100 (fully open).

The SOLIndex score for the countries in the pilot projects is:

Completeness score (CS) of 26

Openness score (OS) of 28.

The overall SOLIndex score is 7.2 (CS x OS)/100.

4.1 Data Governance

All the countries the pilot are signatories to the African Charter on Human and Peoples Rights which recognizes access to information as a fundamental right, while it is also an enabling right for the achievement of other fundamental rights. Equally positive is that all but one of the countries in the pilot study have enacted access to information laws, while an access to information law is pending in the exception. This reflects a broader trend of openness where we find that 27 countries in Africa have enacted access to information laws and laws are pending in another 8 countries in Africa, compared to a decade ago when only 13 countries had any access to information laws.

5.1 Completeness and Openness of Land Data

Legal and policy information on land scores the best for completeness and openness and is considered to be partially open with a score of **45 out of 100**. Most countries have websites or data portals where information on land laws and policies can be accessed online, even when the options for downloads are limited (lack of API's, no open licences, not machine readable). In general, it can be said that **land tenure, use, development and value data** and information is generally not open with average scores of **6, 5, 4, and 1** respectively. It was found that there is more digital data than is reflected by the score, but the data is not open and available.

5. THE WAY FORWARD

Detailed recommendations for the country level research has been published in the various national SOLI reports on the Land Portal website. The Land Portal will continue the analysis and processing of the data collected and synthesise the finding to identify trends at the regional or continental level.

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