



The Necessity for Open Data on land and property rights

GODAN Action Project



www.landportal.org



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Contents

Background	5
Challenges and potential of land-related data	5
Land-related open data initiatives	
The Land Portal Foundation	7
The Cadasta Foundation	9
USAID Mobile Applications to Secure Tenure (MAST) initiative	11
Open Development Mekong (ODM)	12
Global Property Rights Index – PRIndex	13
Conclusions and recommendations	14




Data and information on land are fundamental for enabling smallholder farmers to gain secure access and control over their land, which provides the basis for investing in their operations.

This briefing paper outlines the importance and benefits of increasing the availability and accessibility of land information in support of improved food security and nutrition.

Over a billion people worldwide, predominately smallholder farmers, lack secure land rights, which are crucial for obtaining loans and providing the long-term visibility necessary for planning successful agricultural operations. Development agencies, governments and agricultural stakeholders alike are increasingly recognizing the need for land data in support of secure property rights as a mechanism for ensuring sustainable economic development.

Making land data available as open data provides numerous public and societal benefits. Open data surrounding land transactions increases accountability and transparency, while reducing corruption. Open data technologies enable mapping and access to information on land rights, which in turn can lead to more protection for community and smallholder farmers.

This briefing paper is published as a thematic scoping for GODAN Action, which enables data users, producers and intermediaries to effectively engage with open data and maximize its potential for impact in the agriculture and nutrition sectors. GODAN Action targets those using and publishing data to improve agriculture and nutrition policy and practice, and aims to help these stakeholders to not only understand the value of open data for agriculture and nutrition but also to provide the tools and skills needed to help them engage with it practically.



Background

Development initiatives that aim to improve food security and alleviate poverty for vulnerable groups, including women, minorities and indigenous peoples, have shown that secure access to land is a fundamental component necessary for taking advantage of economic opportunities and establishing sustainable livelihoods.¹ Crucially, improved land tenure allows families to build an asset base that enables them to invest in their futures.

Yet, across most contexts, information and data on land are largely inaccessible, including land administration data, parcel data and ownership information, as well as information on land investments, contract data and even policy information. Often, the land information that is made available uses proprietary systems for doing so, which normally means that the information is not accessible. Moreover, civil society, bilateral agencies, governments and international organizations all publish land data and information; however, common principles, processes and standards for making such data open are lacking.

Open data on land governance, land rights and related issues has the potential to enable farmers to invest in their operations, to use land resources sustainably, to integrate sustainable land use planning, to obtain access to justice and to become legally empowered, particularly with regard to women farmers. It also provides access to rural employment through land-related services and to build the collective bargaining potential among farmers and the organizations that represent them. Without information and data on land rights, cadastral systems, land laws and related matters, an environment of corruption may flourish.

Moving towards open and transparent land data and information represents a significant opportunity to build systems that engage citizenry and give stakeholders access to the same information, thus leveling the playing field, and providing the foundation for secure land and property rights, and ultimately improved food security and nutrition.

Challenges and potential of land-related data for agriculture and nutrition

While governments, international institutions and international organizations invest heavily in geospatial systems, community land mapping and land tenure information systems, among other initiatives, surprisingly little thought is given to the interoperability of these platforms and systems, and harmonizing their employment and use, which would enable greater visibility and reduce duplication.

1 <http://www.fao.org/docrep/005/y4307e/y4307e04.htm>

There are many different data types that give information about land, including geospatial records on land cover and use, cadastral records of land ownership, statistical indicators, bibliographic records and more. These data types come from a great diversity of sources. Among these variable data types, numerous standards for their use exist. There is a need to map these standards to provide a comparative perspective of practices and use. Adding value to existing ongoing efforts towards land data monitoring against international monitoring frameworks such as the SDGs, the Voluntary Guidelines on the Governance of Tenure (VGGTs) and others will inform and guide global attention to the importance of data management, the use of standards and building capacity to adopt Open Data principles.

In addition to variable standards for publishing open data on land, another major concern, especially for indigenous and local communities, is that open data may represent a threat to privacy and security. Data about land governance is also often disputed, and in fear of their information being taken out of context, information providers may purposely choose not to publish it. Data may also be deemed sensitive by indigenous or forest-dwelling communities, and mapping of their use may exacerbate local tensions between and within communities regarding land disputes, and some communities may worry about spatial data being shared publicly. Thus, any new transparency or open data intervention should be assessed to review the implications for all stakeholders, and particularly for those who are in the most vulnerable or precarious situations. The sensitivity of certain datasets is dependent on context as well as cultural views of privacy, which sometimes makes it difficult to determine which datasets should be deemed open.

Moreover, availability and quality of land-related data remains an issue. Within contexts with complicated land ownership schemes or where there are few reliable official data sources, creating a unified system for land information is difficult. For example, approximately 70% of land in Africa is still governed under customary tenure regime, with limited or no data, including cadastral maps. This conundrum may be resolved by creating open data systems for land management. By establishing proper mechanisms for processing feedback from data users, opening data will help land administration agencies to improve data quality, while protecting the rights of individuals, including the most vulnerable.

Numerous initiatives are working towards building the components of an information ecosystem devoted to land-related issues, from improving cadastral systems to giving communities themselves the knowledge and tools to map and track their land use and ownership. The Land Portal is working in partnership with all of these initiatives to build capacity to make this possible and to promote the wider adoption of open data approaches and practices. The following case studies describe the potential of these land-related open data initiatives to contribute to enhancing food security and nutrition.



The Land Portal Foundation and Open Data

The Land Portal aims to improve land governance to benefit those with the most insecure land rights and the greatest vulnerability to landlessness through information and knowledge sharing. The Land Portal values partnership and works across stakeholder groups to promote participation in land governance. The Land Portal is based on open sources, open data and open content, and promotes open approaches with partners, seeking to catalyze and support greater sharing, collaboration and innovation in the land governance community.

Access to information is crucial to achieving good land governance and to securing land rights for landless and vulnerable people.

The Land Portal Foundation believes that access to information is crucial to achieving good land governance and to securing land rights for landless and vulnerable people. The Land Portal website gathers information from a broad range of information providers and is organized and visualized in ways that are intuitive and usable for researchers, private sector actors and policy makers at global and local levels. This information strengthens research, advocacy, and policy-making efforts by enabling a better understanding of land governance issues affecting various countries and regions.

Information available on the Land Portal is enriched according to internationally recognized open data standards and principles. By linking local and global online databases together, the Land Portal is supporting the development of an 'information ecosystem' that eliminates information 'silos' that store information that is disconnected and inaccessible.

The Land Portal supports land-focused organizations around the world to adopt open data standards and principles. These standards include LandVoc, a standardized vocabulary on land that is currently part of AGROVOC, the multilingual agricultural thesaurus of the Food and Agriculture Organization (FAO) of the United Nations. The Land Portal continuously enriches concepts included in the vocabulary based upon feedback and review from constituents, especially those in the Global South, who provide insight regarding culturally-specific synonyms and other land-related terms.

The Land Portal currently hosts 29 datasets from local and global information providers, including 584 different indicators. This includes a wide variety of land-related information that is visualized on countries and thematic portfolios, such as ranking of national laws and their performance according to the international standards on expropriation, compensation, and resettlement as established in Section 16 of the UN Voluntary Guidelines on the Responsible Governance of Tenure of Land Fisheries and Forests in the Context of National Food Security (VGGTs), indicators from the Gender & Land Rights Database of the Food and Agriculture Organization of the United Nations (FAO), land-related information from the Lao Census of Agriculture, scores from the Global Hunger Index (GHI) of the International Food Policy Research Institute (IFPRI) and many more. All of the data and metadata for these datasets are available as open data and can be downloaded in a range of formats, including CSV, JSON and HTML.

Several land-related indicators have been included in the Sustainable Development Goals (SDGs), and there is an increasing drive to collect data that helps illustrate the land governance situation in countries all over the world. However, a uniform vision towards standardizing the use of land information systems is lacking. In response, the Land Portal Foundation has **established a platform** that brings together available information and data related to monitor the broad range of land-related data and information needed to effectively monitor the Sustainable Development Goal (SDG) and to overcome a lack of understanding and awareness of the land indicators in the SDGs. Among others, the platform covers indicators 2.3.1 and 2.3.2 on smallholder farmers, what they earn and how much they produce, 2.4.1 on agriculture area. As datasets emerge for tracking progress towards achieving the SDGs specific to these indicators, the Land Portal will integrate them as open data.

The Land Portal will continue to work together in partnership with organizations around the world to increase the capacity of institutions and organizations to make land-related information available as open data and to make this information accessible on the Land Portal.



The Cadasta Foundation

In Lagos, Nigeria, the largest city in Africa, 16 million people live in slums, often without proper roads, water and sanitation. In the Indian state of Telangana, millions of farmers are vulnerable to displacement; they cannot access agricultural extension services or obtain formal loans. In Bangladesh, more than 4 million people are completely landless; they have no land to live on or to farm to support their families. These communities, along with another billion people in the world, are invisible to their governments. Government land records do not track the landless or slum dwellers, and are often completely outdated or inadequate. Consequently, governments cannot adequately serve the needs of vulnerable communities.

The Cadasta platform enables digital mapping of each parcel of land, and allows to securely store and analyze information about the land and the people and share this information as needed.

The **Cadasta Foundation** works to overcome this by supporting communities and governments with the technologies they need to share land information using mobile phones, paper-based tools and a web-enabled dashboard that helps partners to gather information about people and the land they use. Cadasta works with their partners to design a digital mapping and documentation framework, collect information about at-risk communities and their claims to land and in turn share this information with the community and other partners. The Cadasta platform enables digital mapping of each parcel of land,

and allows to securely store and analyze information about the land and the people and share this information as needed. The documents and data remain the property of the community, giving communities the choice of what information to share and not to share. Cadasta's platform has been used to help at-risk communities to document their land rights, improve access to services and infrastructure, track and sustain agricultural production, as well as find and document landless families.

The Land Portal and the Cadasta Foundation have worked closely together to promote and support the development of open data and land. In September 2016, the Land Portal and the Cadasta Foundation organized an online dialogue on **Open Data and Land Governance: Increased accountability and transparency as a means to overcoming poverty?**, and in March 2016, on the sidelines of the World Bank Conference on Land and Poverty, co-organized the workshop **Open Data and Land Governance: Moving Towards an Information Ecosystem**, which resulted in the **Land Information Ecosystem Declaration**.



LAND MATRIX

The Land Matrix

From 2007-2008, the world faced a global food price crisis unlike any previously seen, causing political and economic instability throughout the developing world. One of the effects of this crisis was the increased demand for, and consequently value of land for agricultural and other purposes. What followed was a major upswing in large-scale land acquisitions in the Global South largely from major international businesses vying for an increasing share of global agribusiness, forestry and mining markets.

A global and independent land monitoring initiative.

In many developing economies, which are often also former colonies, governments retain broad control and official ownership of much of the land. Large scale land acquisitions often were the result of a transference of government-owned land to the private domain under sometimes dubious and at the very least circumstances that lacked transparency or public engagement. International investors, as public, semi-public and private sellers, operate in legal grey areas, taking advantage of a lack of formal recognition of property rights and customary land rights.

Since 2009, the **Land Matrix**, a global and independent land monitoring initiative that promotes transparency and accountability in decisions over land and investment, has collected key information regarding large-scale land acquisitions. Its goal is to facilitate an open development community of citizens, researchers, policy-makers and technology specialists to promote transparency and accountability in decisions over land and investment. It currently includes the details of 1,479 land deals representing nearly 50,000,000 hectares.

Decisions over large-scale land investments affect the lives of millions of people, risk worsening poverty, damaging the environment and violating human rights. Through the Land Matrix, the idea is that greater transparency can promote greater accountability and better decision making. The Land Matrix makes it possible to visualize the extent of the phenomenon and its impact at the global scale. Users can sort land deals by the intention of investment or crops, and also create customizable filters. Deals include geospatial information and list of sources, among other details.

The Land Matrix was conceived of as an open and public database. Users may download infographics, the entire dataset, or filtered parts of it, and data is made available for users under a Creative Commons license.

The Land Matrix was originally part of the Land Portal platform, hosted on the same domain and servers. It has since become an independent initiative based in the University of Pretoria in South Africa. Indicators from the Land Matrix continue to be imported and visualized on the Land Portal.



USAID
FROM THE AMERICAN PEOPLE

USAID Mobile Applications to Secure Tenure (MAST) initiative

In 2016 the USAID launched its **Mobile Applications to Secure Tenure (MAST) initiative**, which is a suite of innovative technology tools and inclusive methods that uses mobile devices and a participatory approach to efficiently, transparently, and affordably map and document land and resource rights.

Help communities define, map, record, and document their land and resources using easy-to-use mobile phone applications.

The purpose of MAST is to help communities define, map, record, and document their land and resources using easy-to-use mobile phone applications that empower citizens in the process of understanding their rights and documenting their land and resources. The application is combined with a straightforward data management platform that captures this information, including the names and photos of people using and occupying land, details about what the land is used for, and a basis for their claim to the land.

So far MAST has helped prevent and mitigate land conflict in the countries where it has been piloted. In Burkina Faso, MAST improved the ease with which individuals and communities could trace land rights information, thus increasing clarity around land rights and reducing the potential for conflict. In Tanzania, the MAST process led to the exposure of latent disputes, primarily within families, many of which were then resolved by local authorities. Participants in the MAST process in Tanzania noted that they expected that conflicts would be mitigated in the future because their land rights had been clarified and secured. Moreover, in Tanzania the process has allowed local people to receive government-issued Certificates of Customary Rights of Occupancy (CCROs) for their land. USAID recently launched the Land Technology Solutions (LTS) to expand MAST on a global basis.

All of the code for the MAST application is published as open data and is available freely on Github.

The Land Portal collaborates with the USAID to promote open data capacity building on land-related issues. In February 2017, the USAID and the Land Portal co-organized a **Workshop on Enhancing Open Access to Knowledge, Information & Data in the Mekong**, which brought together a dozen targeted government officials from Laos, Myanmar and Vietnam. This cooperation has continued, with a high-profile discussion **Customary Land Recognition: Zambian Approach to Documentation and Administration**, which created awareness of MAST and open data tools for community mapping.



Open Development Mekong (ODM)

Land governance is at the center of development challenges in the Mekong delta, including in Cambodia, Laos, Myanmar and Vietnam. Governments are revising land policies and practices in order to face these challenges. Given the intertwined regional histories of agrarian change and a common political economy shaped by historical circumstances and dynamics of state power, the problems and solutions relating to land issues are largely shared among countries in the Mekong. This is complemented by cross-border investment and commodity flows, similar experiences in land-based investments and changing land use patterns that are common to all countries.

An evolving platform to support the transparent sharing and analysis of data.

One initiative well-positioned to create greater transparency and access to land information is **Open Development Mekong (ODM)**, which is a constantly evolving platform to support the transparent sharing and analysis of data to improve and inform constructive dialogue and decision making for sustainable and equitable development in the region.

The flagship site of this initiative is Open Development Cambodia (ODC), which was launched in 2011. The site provides 100 pages of briefings covering 17 development sectors, an expansive law compendium, a comprehensive listing of Economic Land Concessions, including compelling data visualizations that illuminate the development and environmental challenges in Cambodia. The map explorer enables users to combine and explore over 70 geospatial data layers to gain multifaceted insight into Cambodia's development trends.

The Open Development Mekong and country websites are open source and open knowledge platforms, striving to meet emerging international open data standards. The Land Portal has supported ODM in better structuring its metadata and in the development of its linked open data systems. The taxonomy of the website has been harmonized with the Land Portal's LandVoc and translated into local languages. Some of the data has been published as Linked Open Data (LOD), making it possible for information on the platform to be interlinked through semantic queries.

PRIndex.

Global Property Rights Index – PRIndex

In many countries, secure property rights allow people to invest in their futures, providing the basis for bank loans and other forms of investment. However, in countries where land tenure is not secure, the support that property rights can provide for sustainable development are lacking. However, there is a grey area between actual property rights and the perception of tenure security, which can keep families from investing in their futures. Thus it is critical to learn how citizens perceive their rights to land and property so that governments, NGOs, donors and others can build targeted programs tailored to the realities faced by local communities.

PRIndex aims to create a baseline global dataset to support the achievement of secure property rights around the world.

In response, the **Global Property Rights Index (PRIndex)** attempts to collect perceptions of security of tenure at the global level, in an effort to provide a clear understanding of the magnitude and nature of citizens' experience of security and insecurity. PRIndex aims to create a baseline global dataset to support the achievement of secure property rights around the world.

PRIndex initially measured tenure security in a 14-state survey in India with 14,000 respondents in 2015, followed by both qualitative and quantitative research in 9 countries in 2016 (Brazil, Colombia, Egypt, India, Indonesia, Greece, Nigeria, Peru and Tanzania) to explore how people think about tenure security. Alternative methods of measuring tenure security were tested in India, Tanzania, and Colombia in 2017, which will be expanded to an additional 36 countries in 2018.

The Land Portal is working closely with Land Alliance, Inc. and the Overseas Development Institute (ODI), the organizations leading PRIndex, to take an open data approach. PRIndex data published so far for 8 countries is featured on the Land Portal as open data. In particular, the indicators integrated into the Land Portal cover the rate of property documentation and perceived tenure security.

Initial results suggest this method will provide compelling information to ground a global conversation and movement around securing the property rights of billions who currently lack them, and has the potential to contribute to the Sustainable Development Goals (SDGs), in particular indicator 1.4.2 on the proportion of total adult population with secure tenure rights to land, with legally recognized documentation and who perceive their rights to land as secure, by sex and by type of tenure.

Conclusions and Recommendations

Taking into consideration growing demand for agricultural land that threatens to undermine local, national and global development efforts to achieve global food security and overcome nutrition by displacing and expropriating land from at-risk populations such as indigenous peoples and smallholder farmers throughout the developing world, governments, international organizations and others need to swiftly shift to open data systems to provide cadastral data, statistics, policies and other information necessary for engendering accountable and transparent land governance systems.

Access to information, public participation, and accountability mechanisms are the bedrock of open, transparent, and inclusive societies. These foundational elements are crucial for enabling the public to adequately protect their land, property, and human rights, and for ensuring sustainable development outcomes are achieved. The inaccessibility of information has inhibited the improvement of land governance initiatives in many parts of the world. Without increased access to important land-related data and information made available through open technologies, activists, policymakers, journalists, and other stakeholders may be unable to effectively monitor the ways in which land is governed, and influence reforms that ensure land is governed and managed responsibly.

As part of GODAN Action, the the Land Portal Foundation is leading the Land Use Case in 2018 in an effort to take advantage of this crucial moment for raising awareness and building capacity among key policy makers and intermediaries on the importance of information sharing and the use and adoption of Open Data principles. This effort will include mapping the standards and the range of data types that relate to land, which will include a chapter focused on India, which will delve into the state of information there and the key challenges and opportunities. Following this work, GODAN Action partner organizations and the Land Portal Foundation will author a gap exploration report as well as recommendations for how to address them.

Building upon the outcomes of the global aspects of the map of standards, GODAN action partners and the Land Portal will organize a Massive Open Online Course (MOOC) targeting policy makers, infomediaries and researchers in the land sector. This will be complemented by several face-to-face trainings in 2018 targeting policy makers in India (February 2018) and in Kenya (autumn 2018) and infomediaries in Washington, D.C., (March 2018). These training will be organized alongside important land conferences including the large annual Land & Poverty conference organized by the World Bank.

With these capacity building efforts, the Land Portal Foundation—in close collaboration with consortium partners—aims to achieve an increase awareness and understanding on open data use and publishing as well as to increase the capacities of policy makers and infomediaries to use and publish according to Open Data standards. This will ultimately lead to better evidence-based decision making as well as increased transparency of decision-making in the longer-term.





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