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Abstract

The Sustainable Development Goals' recognition of the importance of collecting data and recent advances in GPS and mapping technology that make collecting data much easier have sparked an increase in land rights mapping and documentation efforts around the world. The land governance and administration sector, however, has not yet considered the potential for this data — if made public – to increase efficiency and transparency within government, the private sector, communities, and households. Currently, government data sources on land rights are largely inaccessible. This is true for a wide range of land governance information, from parcel data and ownership information, to land investments, concession details and even legal and policy information. The latest version of the Open Data Barometer produced by the World Wide Web Foundation shows only two countries, New Zealand and the United Kingdom, obtained a full 100% score on the topic of open data related to land ownership. According to a report from the Permanent Committee on Cadastre in the European Union on open cadastral information, there is significant variation regarding how cadastral agencies interpret "open data" even among EU member states. Building upon research conducted by Cadasta Foundation throughout 2016 and an online discussion jointly-hosted by the Cadasta Foundation and the Land Portal Foundation that brought together the perspectives of more than 25 leading experts within the sector, this paper will assess current practices in opening land data, identify the potential and observed benefits of open data, successful examples and best practices, as well as shed further light on the potential negative impact of and challenges related to opening land information.

Introduction

Open data is increasingly recognized as a critical factor in good governance. We see this both in the emphasis on data collection in the Sustainable Development Goals and in the launch and rapid growth of the Open Government Partnership (OGP), a multilateral initiative inaugurated in 2011 with the goal of securing concrete commitments from governments to promote transparency.

However, this recognition has, thus far, not prompted the opening of land related en masse. More than 2700 open data commitments to the OGP have already been made. Unfortunately, only two commitments at the time of review, from Uruguay and Tanzania, pertain to releasing government data on land tenure from the official cadaster or land registry.

It is important to note here that governments, with their registries and cadasters (parcel maps), are no longer the sole source of land data. International organizations such as the World Bank publish open data on rural and agricultural growth, for example, as well as reports on land related activities in various country programs. And recent innovations in technology mean communities can document their own rights and use of land and resources. Cadasta Foundation has developed an open source suite of tools communities can use for the collection and management of ownership, occupancy, and spatial data. Non-Governmental Organizations also produce and hold land data on behalf of communities. Landmark Map developed by World Resources Institute and partners is an example of this. The Land Portal Foundation collects and disseminates data from various donor organizations and NGOs involved in land governance issues and makes this data available for bulk download. Even the private sector has access to or control over land data derived from satellite imagery and other sources.

Each of these different stakeholders has access to or controls datasets that are classified as “land data.” In this paper, we will explore the potential benefits and risks of opening up these varied datasets.

The Benefits of Open Land Data

Open land data can reduce barriers to development, reduce corruption, promote conservation, spark the private sector’s development of land related services, and increase efficiency. We will explore these themes below.

Reduce Barriers to Development

In emerging economies, land acquisition remains a serious obstacle for potential investors; it is often difficult to ascertain who might have a right to the land. Within the current landscape

there are concerns verifying whether there are duplicate titles to lands or undocumented claims to the land by customary groups, limitations on land use, or overlapping concessions agreements for different resources on the same land. In fact, even identifying whether the land is owned by the state or a private entity can be challenging. Facing these obstacles, many private organizations choose not to invest at all – or do so at considerable risk. As noted by the groundbreaking research documented in "The Cost of Insecure Tenure" from The Munden Project and funded by Rights and Resources Initiative, tenure issues affected many large scale agricultural investments, resulting in "massively increased operating costs – as much as twenty-nine (29) times over a normal baseline scenario….to outright abandonment of the up-and-running operation. (The Munden Project, 2012)

The lack of land information has an impact not only on the large-scale actors, but also at the household level, including landholders who are unable to prove tenure security or severely constrained in their use of the property as a financial instrument. These landholders are less likely to undertake land transactions and leverage their land as an asset.

Promote Conservation

Open land data can help communities identify overlapping claims and threats to their own security and forest resources. In Cambodia, for example, public lands are subject to overlapping claims by government agencies, private actors, and local communities. Frequently, these claims put communities at risk of displacement.

As Malcolm Childress of Land Alliance stated during the Land Debate hosted by the Land Portal, "a lack of coherence in the data in these situations has led to conflict and mismanagement that has real costs for smallholder farmers, indigenous peoples and public forests."

More reliable tenure documentation can help communities and organizations address and resolve disputes and protect vital resources. The Rights and Resources Initiative, for example, has been tracking forest tenure rights and the amount of forestland legally owned by or designated for Indigenous Peoples and local communities since 2002. Open Data Myanmar shares unbiased and verified data on land conflicts in Myanmar associated with investment projects to shine a light on the detail of land conflicts and aid in resolving disputes. These projects create their own data sources or rely upon publicly available datasets.

Reduce Corruption

Transparency and accountability initiatives have also cited a need for more openness in land data to monitor corporate and government corruption. As Annette Jaitner of Transparency International (TI) explained: "open data is an important requisite for transparency,

accountability, participation, and integrity." Land data has already been used by several anti-corruption activists and journalists to reveal money laundering schemes and the roles governments play in large-scale land deals. In early 2016, the New York Times published a series of pieces that trace shell companies buying high-value real estate across the U.S. to the people behind them. In 2015, Private Eye used Her Majesty's Land Registry (HMLR) of the United Kingdom (UK) data to produce interactive maps that show foreign-owned properties and explain why real estate prices in the UK are skyrocketing. In the Spring of 2016, the International Consortium of International Journalists released the Panama Papers, a massive leak of documents exposing offshore companies controlled by the Prime Minister of Iceland, the King of Saudi Arabia, the children of the President of Azerbaijan and the Prime Minister of Pakistan, to name just a few high profile actors.

Spark the Development of Land Related Services

Open land information has proven to be a powerful catalyst for private sector property based services. A recent report commissioned by the Omidyar Network noted that $1.4bn USD was invested in 2014 alone into property technology startups, most of which use open government data sets as a core component of their business model.

Beyond property-based services, access to open geospatial data has helped grow several industries across the private sector. Land Information New Zealand (LINZ) launched the Land Data Service in 2011, providing free access to property rights data and making it available to download. Since the launch of the free service, private sector use of this data has been robust and diverse leading to savings in time and money for both businesses and consumers.[Learn More] Wind farm producers have estimated that LINZ Data Services save them three to four days a month on average throughout the planning process for the development of farms.[Learn More] Landscapers use the data to save time researching their sites.[Learn More] The agriculture and horticulture industry uses LINZ Data Services to keep better track of their waterways and minimize risks to their crops.[Learn More]

Improve Efficiency and Disaster Response

Finally, governments have also expressed a need for open data on land to reduce duplication between agencies and maximize efficiency of publicly-funded data collection. For example, in Kyrgyzstan, the government wanted to register everyone to vote, but needed addresses for each citizen. The elections agency looked toward the land agencies to provide this information. Land agencies can be the default source of this data within government if they are allowed to open and share their data. Elizabeth Stair, CEO of the National Land Agency in Jamaica explained that the sharing of data between agencies has helped spread the benefit of openness across government. In her experience, environmental and planning agencies

may need data to inform development policies while the Health Ministry may need to identify landowners during a health or safety emergency.

The benefits of opening land data to other government agencies and ministries was illustrated during the Federal Emergency Management Agency's (FEMA) response to Hurricane Katrina in the United States. After the hurricane FEMA needed to verify that victims resided in impacted areas in order to disburse emergency funds. In many parishes, the parcel data didn't exist or governments were reluctant to release it, which led to delays in aid disbursements to victims. Open data can enable sharing between government agencies that can increase efficiencies as well as save crucial time and money during emergencies.

Challenges to Opening data

Given the observed benefits of open data in other governance sectors, it's also important to understand the risks associated with open data in land governance practices and systems. Risks include increased conflict, increased local tensions, violation of privacy, putting undocumented communities and households at risk. Further, the technical and financial barriers to open land data are formidable which sometimes leads critics to question whether investing the time and resources into opening data is worth it, given the potential risks.

Part of the challenge relates to the sensitive information held within the land registry that should be protected. Land records often contain personally identifiable information such as names, addresses, banking details and national identification numbers, whose widespread release can pose a tangible threat to individuals and communities. In other contexts, tenure security – both formal and informal is lacking, and the publication of land rights data might have a negative effect on citizens, putting them at greater risk of eviction or disempowerment.

Increased Conflict

The harmonization of boundaries has long been considered politically sensitive and contentious, and can cause problems in creating, managing and sharing geospatial data. To avoid these incidents, OpenStreetMap, an open source mapping initiative, recognizes multiple boundaries and employs an "on the ground rule" to solve disputes in which, if a conflict arises, they recognize what is observable on the ground.

Increasing Local Tensions

Occasionally individuals represented within the data may deem certain types of land data that goes beyond personally identifiable information sensitive within a specific context. This is often the case with data related to indigenous or forest-dwelling communities. Community mapping may exacerbate local tensions between and within communities regarding land

disputes, and some communities may worry about spatial data being shared publicly. Kaitlin Cordes of the Columbia Center on Sustainable Investment (CCSI) explained: “any new transparency or open data intervention should be assessed ex ante to review the possible 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, making it difficult to determine which datasets should be deemed open in the absence of consultation with all stakeholders.

Violation of Privacy

Government data on land can include the addresses and names of individuals, which can put lives at risk if it falls into the wrong hands. The Drivers’ Privacy Protection Act (DPPA) was passed in the U.S. after a series of abuses related to public access to drivers’ personal addresses, including the murder of actress Rebecca Schaeffer after an obsessed fan obtained her address through her California motor vehicle record. Individual citizens could also be targeted based on real estate market data, such as property values, land transactions and individuals’ financial history, by direct marketers and then used for profiling. Kadaster, the Netherlands Land Agency, currently includes a provision within its licensing agreement prohibiting abuse of land registry data, citing direct marketing as an example. It is due in part to these privacy concerns that governments keep land data closed. After an assessment of the privacy risks associated with releasing most of the datasets within Her Majestry’s Land Registry in the United Kingdom, the agency ultimately decided to release only the Price Paid dataset.[Learn More] Transaction histories for land parcels was approved for release, but all of the other data within the registry is considered private.

Governments have responded to these privacy concerns in a variety of ways. EU Directive 95/46/EC protects personal data in the European Union. Member states’ interpretations of the definition of “personal data” vary. In Germany, for example, the Data Protection Agency considers topographic data with a resolution higher than 40cm personal data. They argue that it is possible to identify natural persons at this scale. However, the U.K. doesn’t interpret the image of one’s house as personal data and therefore it is not protected by the Data Protection Agency.

Some NGOs have also begun working on solutions to grapple with these issues and ultimately share data that can strengthen security of tenure, while endeavoring to protect vulnerable communities. Landmark, a global platform of indigenous and community lands, only shares information that is already publicly available, or voluntarily provided by communities, organizations, researchers, and other individuals. They also protect data provided by communities under a data-sharing agreement. Namati has been experimenting with a “free, prior and informed” approach to these issues. By confronting these issues at the

beginning and then revisiting, they hope to empower communities as data owners and ensure that they have clear permission before sharing or hosting any data that may negatively expose communities.

Technical challenges

Beyond privacy and security concerns, technical issues can make opening government land data difficult. Within contexts with complicated land ownership schemes or where there are few reliable official data sources, creating a unified portal for land information is tricky. For example, according to the World Bank approximately 90% of land in Africa is still governed under customary tenure regimes, with limited or no data, including cadastral maps. Sometimes land data is dispersed across different jurisdictions and agencies. In Brazil, land management responsibilities are divided among the federal union, states and municipalities. Only property rights data for rural lands are available in the centralized national land registry and cadastre, while the states and municipalities administer urban properties.

Costs

Finally, land agencies often depend on revenue from land data to operate. According to Dick Eertink of Kadaster, the Netherlands Land Agency, “Data comes with a cost. Standards, documentation and a running infrastructure should be maintained. The cost aspect should not be exaggerated – costs of providing open data can be quite modest compared to the costs of providing restricted data, and concerns about an increasing number of users seeking help desk assistance have, in our experience, not become true in practice.” Thus a funding mechanism needs to be in place to support the opening of data and to ensure that the land agency has appropriate operating resources in lieu of the revenue generated from data services.

The Future is Open

Despite these challenges, the trend of increasing numbers of land datasets are being created and opened is likely to continue. This is happening both at the request of funders within the land sector and by citizen demand. Elizabeth Stair, CEO of the National Land Agency in Jamaica anticipates that “more data will become open over time as data on land information is important to sustainable development.”[Learn More]

In 2016, Sao Paulo government opened their property tax dataset and it has since been used to research the inequalities in property ownership throughout the city.[Learn More] Uruguay opened their national cadastral information in 2014, Canada opened up geospatial data on

public lands.[Learn More] And, as mentioned above, Land Information New Zealand has made topographic and land ownership data available for free since 2011.

Thus the questions the sector still needs to consider is how to open data on land, be it government cadastral data, geospatial data collected through community mapping, or statistical FAO agricultural datasets in a sensible and sensitive way given concerns regarding privacy, security and power imbalances.

The first guiding principle must be that open data should level the playing field and reduce information asymmetry so that everyone — individuals, communities, NGOs, governments and the private sector — can benefit from land information.

The decision of what land data should be opened cannot simply be based on what is best practice in advanced economies, but needs to take into account the current situation and needs of at-risk and marginalized groups and individuals in developing and emerging economies, particular those in countries with weak rule of law.

Malcolm Childress of Land Alliance explained, “If there’s a corruption problem or a problem elite capture in the judiciary, open land data can also backfire, especially for social groups that may not have the economic means, communication tools or political connections to defend their claims. In these cases, both the transparency of data and the quality of governance institutions have to be a points of scrutiny.[Learn More]”

Extreme caution should be taken in opening data when and where rule of law and tenure security is weak.

Stakeholders must seek to balance transparency and safeguards. Jolyne Sanjak at Landesa, outlined one such compromise: data could be stripped of personal information with the same techniques used for survey data.

New Zealand has found a different compromise: certain geospatial datasets are open to anyone, but to access personally identifiable datasets, users have to register in order for the government to verify their identity and ensure that the data isn’t being used for nefarious purposes.

Further, action could be taken to encourage use of this data for social good by bridging the gap to accessibility. While open data has potential uses for a wide range of stakeholders, each audience has specific needs and open data tools should be tailored to the user group. “Accessible data” to a researcher may mean that the data is available as a shapefile. While a shapefile is useless to a smallholder farmer, being able to access data for free may be hugely important. Organizations releasing data could take steps to make their data the most

accessible to the stakeholders they want to reach and whom can actively work on behalf of social good aims, such as monitoring corruption and increasing land tenure security.

There are already many promising use cases as well as a growing interest in openness in land governance. At the same time, there are sensitivities in land data and risks associated with making it open, particularly for vulnerable communities and in varying contexts. Releasing an owner's name in a highly developed and relatively equitable country can help prevent corruption. But revealing the same data in a country with less formal land documentation or high rates of inequality can result in the dispossession or displacement of vulnerable communities. Resources, frameworks and alternate approaches are being developed that ensure responsible use of data while not inhibiting the desired outcomes of openness: accountability of all stakeholders within land governance as well as the land tenure security for vulnerable populations that can accompany the documentation of these rights. These challenges are not a reason to dismiss open data and transparency in land governance and there is reason to believe that open data will play a role in tenure security going forward.