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## OPEN DATA AS A MEANS TO PROMOTE TRANSPARENCY IN LAND GOVERNANCE – WHAT IT TAKES

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## Abstract

Based on practical examples and on-going discussions, this paper critically reflects on prerequisites and conditions to be observed for open land data to contribute to increased transparency and better land governance. Moreover, the paper touches on the question of what open land data and transparency can mean for addressing land corruption which negatively affects the livelihoods and prosperity of many men and women globally. The paper analyses experiences from various existing GIZ land governance projects and the outcomes of a series of wider international debates on open land data as an instrument to increase transparency, accountability and participation and to prevent land corruption. The aim is to gain an overview of what aspects related to open data still require more attention by development partners to better inform dialogue between stakeholders, as well as to advise future project planning and implementation on aspects related to (open) data in land governance.

### Key Words:

transparency, open data, anti-corruption, responsible land governance



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## 1. Introduction

Open data is one important requisite for transparency, accountability, participation, and eventually for good governance and anti-corruption. The quality of data, the sourcing, and the processing are crucial. Availability of data does not automatically lead to making optimal use of data. Accessibility as well as the capacity and empowerment to use open data are key to making data a relevant factor in good land governance. In this paper, the German Development Cooperation (GIZ) reflects on the use of open data in development cooperation related to land governance. The paper attempts to answer the question on what it takes and what is needed to leverage open land data for better land governance as supported by development partners. Ultimately, the question underlying this paper is “How can international cooperation enhance an impactful use of open data?”.

The paper presents a general discussion of data and open data and how it links to transparency and anti-corruption. Partly, this is based on various debates, including an online discussion organized on [Land Portal](#) as well as a panel discussion and master class organized at the [Conference on Land Policy in Africa 2019](#) on “Winning the fight against Corruption in the Land Sector: Sustainable Pathway for Africa’s Transformation”. Additionally, a few examples of various existing GIZ land governance projects are outlined. Several interviews were held with GIZ land governance initiatives in three regions to record and analyze experiences and insights with regards to various aspects related to open data. This paper closes with a set of findings and recommendations. Hence this paper should be seen as an entry point for further discussions on this topic and provide an overview on where more orientation is needed on open data, land governance and transparency.

## 2. Why transparency?

Since 2007 there has been an increased interest in land-based investments. The involved land deals have often disadvantaged already marginalized groups and favored power holders. Climate change has added to the pressure on land use and management. More and more, rural and urban land becomes a limited and valuable resource and competitive asset. In an atmosphere of weak governance, opaque and corrupt deals between rent seekers and potent land seekers can easily overreach those who might not have the means or the criminal energy to compete in this setting. As a result, many men and women globally have lost their land or housing and are confronted with tenure and land use insecurity. Better land governance can be the answer to overcoming power imbalances and to improving accountability and land rights.

Greater transparency and better information sharing are a fundamental requirement for good governance. Transparency International describes “[transparency](#)” as “the characteristic of governments, companies, organizations and individuals of being open in the clear [disclosure](#) of information, rules, plans, processes and actions (Transparency International, 2020). As a principle, public officials, civil servants, the



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managers and directors of companies and organizations, and board trustees have a duty to act visibly, predictably and understandably to promote participation and [accountability](#) and allow third parties to easily perceive what actions are being performed” (Transparency International, 2020). In the publication “[The Possible Shape of a Land Transparency Initiative](#)” from September 2013, the Overseas Development Institute ODI analyses five transparency initiatives from different sectors and describes commonalities in how these initiatives aim for change. Coherently, the initiatives publicly provide a supply of relevant, useful and reliable information. On the other hand, some initiatives create demand for that information by civil society and enable dialogue through multi-stakeholder groups. One of the report’s key messages emphasizes that transparency is not an objective in itself but a means to an end (Locke & Henley, 2013).

## 2.1 Why transparency in anti-corruption?

When we talk about good governance, transparency, accountability, and participation go hand in hand in the fight against corruption. Relevant and accessible information empowers men and women to participate in decision-making and in holding their leaders accountable. Moreover, it improves fair and equal access to government services. Raising awareness on land rights helps men and women to demand those rights and to seek legal redress in case their rights are disregarded. Transparency, in the sense of information and knowledge, is one building block to counteract land corruption.

Transparency can create the trust men and women wish to have in their governments and leaders, and it can enhance stability and the rule of law. Disclosure and registration of company or land ownership for example forces owners to abide with existing laws and regulations and prohibits corrupt acts like money laundering, speculation and tax evasion. In the long run, a shared knowledge and clarity on land ownership, land rights, and land use is the basis for inclusion, justice and prosperity for all and ultimately, for achieving the Sustainable Development Goals.

## 3. What is open data?

Access to information is a prerequisite for good governance, as it fosters transparency, allows citizens to actively participate in decision-making processes and ensures that decision-makers remain accountable (Ruijter et al. 2017; Ruijter et al. 2018). In this context, open data has generated great interest in the public discourse in recent years. Especially, through digitalization and social media, data, its availability and its importance have increased immensely – with accompanying positive and negative aspects.

Open data can be defined as electronically stored information and recordings such as documents and databases that can be freely used, reused, modified and distributed by anyone for any purpose (Dymora et al. 2018)<sup>1</sup>. Data that are or could be available in a structured form, such as statistics, geodata, household data as well as address and contact lists, are particularly relevant and should fulfil certain basic criteria

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<sup>1</sup> Also see [www.opendefinition.org](http://www.opendefinition.org) for the internationally recognized definition of open data.



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(GovData, 2014). Open data should be complete, collected at the source, timely updated, accessible, machine processable, non-discriminatory, non-proprietary and license-free (Napolitano, 2019; Open Government Data, 2020).

As public institutions in particular collect large amounts of data, there are demands to disclose this data to the public and make public administration data available free of charge for any processing (Dymora et al. 2018; Kubicek et al. 2020). According to the proponents of the open data movement, the disclosure of administrative data leads to greater transparency and participation, as citizens can gain a better understanding of the work processes of public institutions, can better understand decision-making processes and can more easily identify irregularities in these processes (Ruijter et al. 2017; Ruijter et al. 2018; Dymora et al. 2018; Napolitano, 2019; Kubicek et al. 2020). It is further argued that open government data brings public services closer to the citizen and can also develop potential for economic growth, as private companies can use the data for commercial purposes (Napolitano, 2019; Kubicek et al. 2020). In addition, data plays a critical role in investigative and citizen journalism.

## 3.1 Open data in the land sector

The debate about open data has also taken hold in the land sector during the last decade. Speaking of data in the land sector, we are dealing with a wide range of different data types, including cadaster information that displays land parcels and parcel boundaries, information on property rights and interests captured in land registries, information on property transactions as well as information on different tenure types among other types of information (Cadasta, 2019; Davies & Chattapadhyay, 2019). However, across countries government data sources on land ownership are largely inaccessible (Land Portal, 2018). According to the [Global Open Data Index](#), the land ownership data is one of the least available categories of data (Global Open Data Index, 2016). In essence, there are two main reasons for this. Where data is already available, proprietary systems for privacy and security reasons are often used by public authorities, which means that the information is not accessible for everyone (Land Portal, 2018; Davies and Chattapadhyay, 2019). The far greater problem, however, is the lack of data availability. In many parts of the world, comprehensive information on land ownership and land use rights as well as information on various tenure systems or land transactions is scarce, let alone digitized (GLTN, 2008; GIZ, 2017; World Bank, 2017; Land Portal, 2018). If land data is available, it is often stored in analog information systems or is available in paper format (Davies and Chattapadhyay, 2019). This lack of transparency in turn can cause various problems, such as elite capture of public or communal land resource, land conflicts due to unclear boundaries or petty corruption in provision of land related services when public or private service providers exploit ignorance of local land users.

However, government authorities are not the sole sources of land data and to address these above-mentioned issues, many initiatives and activist networks at global scale and local level have emerged, which promote opening up data in the land sector and which are involved in both the collection, processing and dissemination of land related data. Also, journalists and data analysts re-organize data to



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make it more accessible and understandable for the public. There are as well various platforms and formats which provide data and allow for the public to engage. Depending on their approach, these actors concentrate on the provision and aggregation of land relevant data and information such as the open online platform [Land Portal](#) or on the development of digital tools to document, analyze and disseminate land tenure information and geospatial data like the [Cadasta Foundation](#). Other actors like [TIMBY](#) provide tools that help communities to record data to track, report, and understand better complex issues that affect them and therewith support communities in addressing these issues. Communities in Liberia, Kenya and Philippines apply TIMBY to fight for their land rights and against land corruption. Furthermore, Initiatives like the [Disruption Network Lab](#) provide space to discuss how technology and data can engage and empower citizens to unveil and counteract injustices. Other platforms in turn document and publish data of large-scale land acquisitions to promote transparency and accountability in decisions over large-scale land deals such as the independent global online open access platform on land monitoring [Land Matrix Initiative](#) or publish relevant lease and purchase agreements such as [Open Land Contracts Initiative](#). Furthermore, international organizations such as World Bank, the United Nations and other donor organizations publish land related data (Land Portal, 2016)<sup>2</sup>. The state of data and data transparency is as assessed in various indices. For example, the Global Disinformation Index provides an overview on the misuse of data to instill mistrust and fear and to polarize societies.

## 3.2 Opportunities and challenges

The demands for open data in the land sector follow the same narrative of transparency, increased civil participation and improved government services. For example, opening up data on land transactions increases accountability and transparency, while reducing corruption (Land Portal, 2016). Open data in this context, is seen as a tool to get insights on government actions and decisions. In terms of access to information it is expected to empower citizens to hold governments accountable (Land Portal, 2016; Davies & Mey, 2019). Furthermore, open access to information potentially enables land owners and user to better protect their land rights and properties as they are able to monitor land related decision-making processes and thus allows them to influence land policy and reform processes that ensure land is governed and managed responsibly (Land Portal, 2018). Also, cost-effective and economic arguments play a role in the debate on open data in the land sector. In this context, it is expected that open land data can help to make administrative processes more efficient if, for example, overlapping land claims or duplications in data sets can be avoided in land registration procedures (Land Portal, 2016).

However, opening up land data comes along with a list of technological, organizational and legal challenges for public authorities that can create high costs. Land data is costly to produce and maintain and its digitization and verification is often expensive and labor intensive (Davies and Chattapadhyay, 2019)

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<sup>2</sup> The [Open Data Barometer](#) measures how governments are publishing and using open data for accountability, innovation and social impact. A new initiative, the [Global Data Barometer](#), considers as well land-related data.



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For example, new process steps and standards for the collection, identification, selection, publication, maintenance and use of land data must first be defined and developed (Kubicek et al. 2020). Of course, the fact that diverse and overlapping land rights are difficult to migrate into abstract data sets plays an important role as well (Davies and Chattapadhyay, 2019). This requires not only technological investments but also personnel capacities at the responsible authorities and legal questions must also be clarified in advance. Furthermore, it is necessary to harmonize these processes between different data collecting institutions and authorities as well as at different scales (Kubicek et al. 2020; Land Portal 2018).

Furthermore, availability of data does not automatically lead to making optimal use of data. The quality of data, its sourcing, and the knowledge to process the data are crucial too. Accessibility and the empowerment to use open data is key to making it relevant. Information and knowledge mean empowerment of men and women and civil society as such (Davies & Mey, 2019). At the same time, the world experiences a shrinking space for civil society, and land and human right defenders who use data as evidence and demand accountability and access to justice often are at risk. Also, opening up data means transparency, but it does not automatically mean that this data is put to good use (Gurstein, 2011). Data can as well be misused and lead to corruption and fraud, as some experiences with [Aadhaar](#), India's national identification system, shows. If open data and transparency indeed should be a means to an end, and this end is good governance, then the enabling political and legal framework, the capacity, and the willingness to avail data and make it accessible must be there, as well as the demand for this data and the capacity to process it and put it to good use.

## 4. From theory to practice

The majority of GIZ land governance projects incorporate digital solutions. With the development of new technology and the proliferation of open source solutions, the adoption of digital solutions in project design has increased and continues to do so at an increasing rate. Two areas are especially noteworthy: the increasing use of database solutions and geographic information systems including earth observation. In many cases, both are strongly linked. With the fast development of free-of-charge satellite imagery, it is expected that this field will continue to grow. The versatility and accessibility of these technologies holds great potential for data collection, analysis and planning. The following sub-chapter will provide an overview of experiences within the GIZ land governance sector related to the development and application of digital solutions, which contribute significantly to the production, management and analysis of data. Thereafter, the chapter will narrow down on the experiences of GIZ land governance experts related to open data in land governance projects - especially as a contributing factor towards increased transparency.





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## 4.1 Digital solutions in the GIZ land governance sector

Technological progress offers a great opportunity for more effective, efficient and transparent land management. In recent years, digital solutions and technologies have developed significantly as well as the accessibility and transparency of relevant non-proprietary data and software. Typical information and communication technologies (ICT) include devices, networks, services and applications that collect, process, store and/or transfer information in digital form. Examples range from cutting edge internet-based technologies and sensing tools to other technologies that have been around for much longer, such as radio, telephone, mobile phone, television and satellites. ICT solutions typically used in land governance are tools for data collection and surveying, observation, land registration, land use planning, and e-learning.

Today, open-source Geographic Information System applications like QGIS support viewing, editing, and analysis of geospatial data. Affordable high-tech tablets allow surveyors to capture more perspectives; interviewers make use of enhanced software that synchronizes with servers that automatically combine data with spatial information. Transparency is enhanced by displaying results online, as information is available not only to all authorities, but also the public.

Geographic Information or data refers to all data with a geographic reference or coordinates and data can be processed, analyzed, and represented in Geographic Information Systems and geographic databases. These versatile data and systems can be used to describe impacts, analyze intervention areas, monitor and evaluate, collect data in inaccessible conflict areas and/or present GIZ services to the public. The most common types of geographic information in land governance and its nexus topics are satellite and drone imagery, survey data, cartographic material and information products which are derived from these.

Earth Observation can provide near real-time, area-wide, transboundary environmental information, in particular in difficult to access areas, and is therefore relevant for many different sectors, from agriculture and forestry to protected area and water management, urban development and disaster preparedness. In addition, satellite and drone based remote sensing provides rapid information acquisition over larger areas and longer periods of time. The technical developments of recent years and the increasing availability of satellite data have greatly expanded the potential of remote sensing. Digital technologies such as Big Data, Artificial Intelligence, Open Source and Cloud Computing are playing an increasingly important role.



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## Case Study: GIZ projects related to Geographic Information and Earth Observation

**Land rights:** The establishment of digital cadasters in Ethiopia and Laos provides greater legal certainty. In Brazil, the allocation of public land and land titles is more effective by reviewing the requirements for the allocation of land titles. In the Philippines, high-resolution images help to initiate dialogues on land use conflicts and to plan sustainable village development and land use.

**Spatial planning:** In Indonesia, state satellite-based annual land use maps together with other data such as local spatial planning plans are incorporated into government advice. On the basis of this information and further analyses, political decision-makers have signed a declaration that further expansion of plantation areas should take place primarily on low-carbon areas. In Benin, drone pictures serve as presentation material for the local administrations of the protection forests. In Mali, thematic maps serve as a planning basis for erosion control measures.

**Monitoring:** The Asset Impact Monitoring System (AIMS) from the World Food Programme uses satellite imagery and remote monitoring software to monitor the long-term effects of food security projects in agriculture. Satellite data are also used for regular monitoring of rice crop areas and stocks as well as for the assessment of rice crop damage, e.g. in India, Thailand, Indonesia and Cambodia. In Ethiopia, Sentinel 2 data are used to monitor large areas of land that are allocated by the Ethiopian government to investors for agricultural projects.

Additionally, digital solutions and data are used to monitor a wide range of different areas, which includes monitoring of territorial rights, legal recognition and titling procedures in rural areas, agricultural investments, contract farming projects as well as land conflicts. The utilization of non-proprietary monitoring tools and open data platforms plays an essential role in monitoring processes, in addition to proprietary tools and survey or field data. Accessibility and transparency of data, the interoperability of different systems and the use of geographic information systems is important for comprehensive monitoring in land governance and cooperation with local populations and governments.



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## Case Study: Monitoring Tools and Open Land Databases within GIZ projects

**NELGA Land Data Platform:** To strengthen human and institutional capacities for the implementation of the African Union agenda on land, the African Land Policy Centre has established a Network of Excellence on Land Governance in Africa (NELGA). NELGA is a partnership of leading African universities and research institutions with proven leadership in education, training and research on land governance. Among its objectives, NELGA notably aims to promote research in the field of land governance and to provide necessary data to support government policy and program implementation as well as monitoring.

**Rural Cadaster Systems “SIC Comunidades” and “SICAR”:** In Peru, digital innovations now allow to monitor the legal recognition and titling procedures of peasant and native communities, an important aspect of the realization of indigenous territorial rights. Both systems are innovative web applications with a map viewer to be used by all 25 regional governments, the entities in charge of land titling in Peru. Both systems allow uploading and validating plans, perform quality control, migrate cadastral information and generate cadastral products. The main innovation of the rural cadaster system is the interoperability of both systems with diverse governmental geographic information systems on other territorial categories (e.g. natural protected areas, production forests, mining and oil concessions).

**The Commercial Agriculture Management Information System “CAMIS”:** In Ethiopia, digital tools enhance the monitoring of Responsible Agricultural Investments. The Commercial Agriculture Management Information System (CAMIS) is a distributed web application system, which aims at providing functions to support the inventory of commercial agricultural investments and different contract farming models. CAMIS targets the performance monitoring and evaluation of lease-based agricultural investment and contract farming projects. CAMIS works like a land bank and maintains a land inventory and keeps track of leased land. It also provides basic information on parameters of soil, climatic conditions, landscape and water quality for irrigated lands. As part of the web portal, the Bid workflow management enables land promotion for investment, provides an online investor registration platform and facilitates bid processes amongst other useful functions.

**Conflict Monitoring System “CMS”:** In Laos, land conflict monitoring, and resolution mechanisms are improved utilizing a system for documentation, mapping and monitoring of land conflicts. In the field, data is collected via an app about conflicts and entered offline in the CMS, for subsequent synchronization with the database. Whenever a technical team encounters a conflict, it is directly entered into the CMS, feeding an up-to-date database, which enables following-up on previously identified conflicts. The application features the options to enter any new conflict, to show existing conflicts on a map, and to display all conflicts as a list. A constantly updated database based on an interview application combines information from the field with geographic data.



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## 4.2 An honest reflection: What it takes...or still needs

As mentioned in the previous chapters, open data is considered as a contributing factor for more transparency and accountability in the land governance sector. The GIZ has already gained significant experiences over the last few years in developing and implementing digital solutions in land governance projects that also contribute towards data generation, management and analysis, which can ultimately contribute towards monitoring of progress in the land governance sector and thereby support evidence-based and transparent policy decision-making. Yet the availability of data does not automatically mean the data is open, or that the data is optimally used. Despite this significant knowledge already gained, challenges still remain related to open data and how we as a) a development organization and b) the land governance sector address the many facets and responsibilities related to open data, its usage and especially its contribution to anti-corruption.

In order to better understand the challenges related to open data, a number of short interviews were conducted with GIZ land governance experts from multiple projects in Latin America, South-East Asia and Africa. The aim was to gain an overview of what aspects related to open data still require more attention by us as a development organization, so as to better inform our dialogs with partners, stakeholders and inform future project planning and implementation on aspects related to (open) data on land governance. Based on the interviews, the following four points summarize the key aspects that were identified:

### 1. Demand for data

Unless there is an active demand for information on land governance by the civil society, there is no pressure for public authorities and government institutions to make data available. Since digitally available data, and especially the concept of open data, is rather new in most of the GIZ partner countries, more focus should be placed on why open data is important for e.g. protecting land rights. This requires on the one hand clear communication on why access to information is important, where to access data and principles on the democratic right to information. Importantly, it also requires a clear vision and strategy on “data for what?”, since access to data does not by itself lead to more informed decision-making. Hence there is a need to have clear messages on what data should be used for, followed by more impact studies on what the data use has led to. This requires better or more thought-about strategies on data use, what happens thereafter and how we measure impacts.

In some countries, governments are more hesitant to share data, which can lead to more corrupt land governance practices such as elite land grabbing. Unless there is public demand for more open data, e.g. by NGOs, universities or even anti-corruption commission, there is little pressure for governments to change the status quo.

It was also mentioned that data should not just be openly available to the public, but that the interoperability of data between and even within different ministries is also very important. Certain geospatial data is needed to not just inform the decision-making in one ministry, but also for another ministry to



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carry out its mandate. This can also lead to increased transparency, since the interdependent of ministries to make decisions based on the same data can lead to inter-governmental checks-and-balances. In this context it is also important to gain a better understanding of data sovereignty, since certain official decisions in some countries can only be recognized is based on government-generated data, e.g. demarcating and allocating land parcels.

## **2. Utilization and communication**

Universities, NGOs and other research institutions should play a more significant role in analyzing and interpreting available data in a way that the public can easily understand the information. In some contexts, universities, research institutions and NGOs are already requesting data for analysis, esp. on deforestation, types of land uses contributing to deforestation and observing what is happening in indigenous territories. Therefore, the data is clearly used for awareness and advocacy purposes. For such communication to be useful to the broader public, various literacy levels, gendered aspects and the needs of marginalized communities need to be taken into account.

Importantly, it was stated that open data debates still need more discussion on the misuse and misinterpretation of data, so as not to be used by those who have access, time and resources and certain interest groups to maintain the unequal power structures, for example private investors who have access to information in contrast to remote indigenous communities- or in contrast corrupt indigenous leaders who sell information to big companies who are interested in building plantations on forest land. In addition, reporting on corruption based on data analysis can be dangerous for certain individuals.

There also needs to be more concerted efforts to crowd-source data as not to individualize the source of information. Thus, we need to better understand how open data needs to be considered when developing safeguards (e.g. 'do no harm approaches' and conflict sensitivity) in projects.

## **3. Enabling conditions**

One of the main aspects related to the whole debate on data and open data was on what are enabling factors to support the entire data ecosystem. Since most of the processes related to the data ecosystem are becoming more digitalized and based on technical expertise, a large number of prerequisites have to be in place, e.g. internet and electricity, technical capacities, strategies and processes and legal frameworks. Based on an initial scoping study conducted by one project, most of the AU countries do not yet have digitized data, have capacities or facilities to store data at a larger scale and lack human resources in data management. There is a big gap between capacities, budgets and hard- and software between rural and urban, and national and local/regional levels.

Additionally, most countries do not yet have laws on data protection, sharing and privacy. In addition, the interviewees also identified a lack in expertise on the side of the GIZ to address these legal aspects and gain a better understanding of the legal conditions related to data. An important orientation guide currently used by the GIZ staff were the Responsible Data Guidelines, of which the GIZ is a signatory.



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Furthermore, trust was seen as a big factor in working on data within the development sector- not only between governments and the public, but especially also between governments and development organisations. This point correlates to the earlier mentioned aspect of data sovereignty on the side of states. It was identified that certain countries are concerned to open-up their data and have them potentially stored somewhere else, as well as questions related to who would have control and accesses to this data.

## 4. Capacities

As mentioned under enabling conditions, capacities are one of the core aspects that need to be addressed with relation to open data. Aside from weak human resource structures as a result of high staff fluctuations and consequent discontinuity of knowledge, especially in rural areas, capacities on the whole spectrum of the data ecosystem are weak- both with partners as well as within the GIZ land governance community. In some cases, there was not necessarily a lack of availability of data, but more on the knowledge of processing data. In some contexts, the “basics” were lacking, e.g. importance of open data, data collection and processing.

In order for governments to accept information on corrupt practices based on data, it was also mentioned that focus should be placed on institutional capacity development to promote openness and acceptance of open data. Similarly, it was mentioned that support should be directed towards structures and processes and making available/publishing the data, instead of a technocratic focus on aspects related to hard- and software.

Despite critical self-reflection on the expertise related to data science within the GIZ land governance, it was suggested that the GIZ should continue to build on its strengths in terms of technical cooperation, such as support the introduction of enhanced processes, capacity development, establishing geospatial infrastructure (which ultimately enables data exchange and interoperability) and promoting multi-stakeholder processes.

## 5. Summary

The discussion and its findings seem to suggest that despite the welcome rush for (open) data, both governments, civil society and the development sector are at the beginning of exploring the potential of this data in the common strive for good governance.

Despite a general acceptance that open data is an important contributing factor to promoting transparency in the land governance sector, various aspects or inhibiting factors need to be addressed. These factors include the need to raise awareness on the importance of data for decision-making and increase the public’s demand for more open access to data (and hence information. In addition, it needs to be ensured that that this information is communicated in a clear and target-oriented way to the public, particularly taking into account the needs of women. Care should also be taken to not cause harm or increase



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conflicts through the availability, dissemination or use of open data. Transparency is sometimes perceived as a threat by those who prefer to benefit from opaque land transactions and land ownership. Therefore, these groups – who often are influential – do not necessarily have an interest to promote open data. These various aspects should be more closely analyzed in safeguard processes.

Another aspect which was identified was how to better understand what enabling conditions are needed to promote open data - from legal frameworks, building trust and enhancing strategies and processes. Even though many experts on land governance are not data scientists or have an in-depth understanding of open data, an important enabling factor to which the development community can contribute is bringing together multiple stakeholders and supporting the optimization of processes which contribute to the data ecosystem, taking into account good governance principles and responsible data guidelines.

Lastly, and in most cases most importantly, is addressing capacity needs. This also requires an understanding of the differences in capacity needs between rural and urban needs, as well as national and local institutional capacities. Capacity development is needed at all levels, including within development organizations.

It can ultimately be concluded that in order to promote open data as a means for more transparency, more research on the link between open data, transparency, and land corruption is needed to provide additional insights and recommendations. To this effect, the GIZ will commission a study which will aim to analyze the impact of open land data on the fight against land corruption.



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## Literature

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