India's Land Information Ecosystem Workshop Report

March 15th, 2019

New Delhi, India

www.landportal.org

NRMC CENTER FOR LAND GOVERNANCE

The Center for Land Governance located at Bhubaneswar (India), is a unit within NR Management Consultants India Pvt. Ltd, involved in research, advocacy, policy analysis and capacity building of stakeholders associated with land rights, urban and rural tenure governance, gender, forest rights, livelihoods, agriculture and sustainable development.

DATAMEET

DataMeet was started in 2011 by a handful of data enthusiasts who started a google group where people can share tips for working with data. Today the group has grown to encompass many people, ideas, projects, solutions, and challenges that using data in India presents. With 1,500 people and growing on the Google Group, 5 active city chapters, trainings and events to promote and use open data, DataMeet is continuously looking for ways to bring open data to the forefront.

LAND PORTAL FOUNDATION

The Land Portal is a non-profit organization based in the Netherlands. Set up in 2009 as a partnership project dedicated to supporting the efforts of the rural poor to gain equitable access to land by addressing the fragmentation of information resources on land, in 2014, the Land Portal became an independent non-profit. Through a variety of initiatives and partnerships, the Land Portal works to create a better information ecosystem for land governance through a platform based on cutting-edge open data technologies.

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Executive Summary

On March 15th 2019, on the sidelines of the 3rd India Land & Development Conference in New Delhi, 27 participants from all across India came together to discuss India's Land Data & Information Ecosystem. The objective of the workshop was to **uncover the data & information ecosystem by identifying the types of data, their data holders, users and more**. Specifically, the workshop addressed the challenges and barriers that exist when it comes to accessing and utilizing the data for the common goal we all work towards: improving land governance.

In this interactive workshop, co-organized by NRMC, DataMeet and the Land Portal Foundation, participants discussed the various challenges facing India's Land Data & Information ecosystem today, resulting in 5 main insights and actions for all actors in this ecosystem to consider:

1. We must not only look to government as a source of land data.

Civil society, academia, think tanks, the private sector and local communities all have valuable perspectives in this important debate. We all have a role to play to either collect, analyze, manage, publish, repackage or repurpose and use data so we can collectively benefit from its meaning. Data becomes reliable and valuable when we pull these various perspectives together.

2. Responsible sharing of data should become second nature to all data collectors.

Before even starting data collection, inclusive and responsible data sharing should be a primary consideration. Data management plans should include elements of anonymizing, sensitizing and structuring data in a way that makes it impossible to inflict harm on the data subjects once published. Involvement of data subjects, including women, prior & informed consent and appropriate data licensing are essential prerequisites for responsible sharing of data.

3. Publishing data should be done in a way that makes it visible, findable and accessible to anyone.

Storing of data before the age of Internet meant that a file needed to be carefully indexed and stored in order for people to be able to find it in the correct folder. While the Internet has changed the way we deal with data in many ways, it has not changed the need for careful storing and indexing data. Following open data principles, including the use of geospatial-standards and controlled vocabularies and ontologies (such as LandVoc) to classify the data, are useful tools to ensure that data published on the web can be found through portals and search engines and thus can be accessed and used by everyone.

4. Data dissemination means opening up a data conversation that includes data subjects and goes beyond our usual networks.

The land governance community is a small global community that struggles to sell its message to others. We should make a collective effort to reach out to media and others outside of the land sector to increase visibility of this important topic. Data subjects should also be included beyond the data collection phase and be included in the conversations. Translating data and data products into various local languages and making them interdisciplinarily connected is essential to ensure the data debate is inclusive and democratic.

5. We need an overview of India's Land Data & Information Ecosystem.

In this complicated landscape of land data, there is a need for an overview. A great deal of data is not published or accessible to the general public, stays within particular networks and does not reach wider audiences. Often data is not preserved online, as platforms may disappear or historic data is not kept online forever. There is a need for a tool, a land data platform, that directs users to the various different sources and types of land data and allows users to interact with various sources of data.

Many thought-provoking insights were shared and discussed among the participants of the workshop, and many of the important questions raised are not likely to be solved through one day's discussions. There was, however, a great consensus on the enormous potential the data ecosystem can have for land governance in India. More coordination and sharing and more inclusive discussions leading to more transparency and better decision making. The group committed to the following action points to strengthen India's Land Information Ecosystem to reach this full potential:

- Continue mapping the land data ecosystem;
- Creating a 'data catalogue' to serve as access point to myriad of different sources;
- Exploring a topical classification standard for land tenure;
- Capacity building of stakeholders to ensure more effective data sharing & communication;
- Connecting to wider networks for more effective and wider dissemination of land information.

The fact that data has the possibility to empower, to promote transparency and catalyze change is undisputed. We need data to accomplish the goals we strive towards. India's land data & information ecosystem is a vast and cluttered space. All of us have a role to play to uncover the myriad of different sources in the data & information landscape, to increase access to and use of data and information and to make the ecosystem more inclusive and democratic. **What is your role?**

Introduction

On March 15th 2019, 27 participants from India and across the world gathered at the sidelines of the India Land & Development Conference 2019 to discuss India's Land Information Ecosystem. Availability of accurate and up to date data and information on land rights, tenures and administration as well as on different land use, such as agriculture, forestry, mining, water, housing and infrastructure, is critical to effective land governance and crucial for planning and managing the use of land and land-based resources. However, it is an often-repeated rhetoric that there is a lack of land data - whether it is lack of reliable or up-to-date data or a lack in the existence of any data.

The reality is that there are many sources of information about land, but their visibility, accessibility, consistency and completeness vary enormously. Finding solid evidence upon which to base policy and practice involves a lot of work. Policy progress on land governance is threatened by lack of good and relevant information. Now, more than ever, it is paramount that awareness is raised amongst key policy makers on the importance of information sharing, knowledge management and, more specifically, the power of an information ecosystem.

Land rights are finally at a point of global attention due to the inclusion of several land-related indicators in the Sustainable Development Goals (SDGS). Now - as the official process around the SDGs has begun - it is critical that the land sector works together effectively. NRMC, DataMeet and the Land Portal Foundation invited key stakeholders to participate in a one-day workshop at the sideline of the India Land & Development Conference 2019, to create an active partnership to increase access to land-information and contribute to the information ecosystem on land.

Through inclusive discussions, we intended to identify the most effective way forward to expand the information ecosystem in terms of range of sources, but also in terms of its content, value and use. The objectives of the workshop were specifically to:

- **Identify information gaps** (gaps in existence, accessibility or abilities to re-use) with regards to concrete issues related to land rights, tenure, administration and use in India;
- Collectively raising awareness and building capacities of participants to **increase access to land information and use** in order to better address identified land rights and open data issues in India;
- Collectively raising awareness and building capacities of participants to **gather and communicate knowledge to reach a wider impact** and be part of and promote the Indian land information ecosystem;
- Collectively having participants **implement and adopt action plan** and become part of the Indian land information ecosystem.

Introducing & Mapping the Information Ecosystem

WHAT IS OPEN DATA?

Mr. Guneet Narula from DataMeet presented the essentials of Open Data and the Open Data policy in India. There are many concepts of openness that are used interchangeably, such as open source, open access and open data. This is incorrect because these concepts all have slightly different meaning, even though they are related to each other. A commonly accepted definition of Open Data is data that "is free to access and free to be used and re-used without any restrictions". This last part is especially important, because this excludes any restrictions such as use for non-commercial purposes only.

Mr. Narula highlighted the current state of the Open Data Policy by the Indian government. The Government of India, through Ministry of Science and Technology, has formulated the National Data Sharing and Accessibility Policy (NDSAP), while Ministry of Electronics & Information Technology (MeitY) is the nodal Ministry to implement the policy. The policy was notified by the Department of Science and Technology through Govt. of India Gazette on 17th March 2012.

In pursuance of the NDSAP-Policy, MeitY - through NIC - has set up the **Open Government Data (OGD) Platform India** to provide open access by proactive release of the data available with various ministries/departments/organizations of Government of India. Even after seven years of implementation of the policy there are challenges in terms of open accessibility and uniform compatibility of data structure. For example numeric data presented in tables format but available in pdf format for download. Such challenges limited the reusability of the data and requires additional effort to restructure it into a usable format.

WHAT IS AN INFORMATION ECOSYSTEM?

Lisette Mey from the Land Portal Foundation introduced the Information Ecosystem. The main message is that (open) data is only of value when it is delivered in the right hands and in the right context and it is *used* to create some sort of change that improves land governance. Open Data is a key ingredient to allow for data to flow from context to context, from person to person. But the Information Ecosystem consists of more than just that.

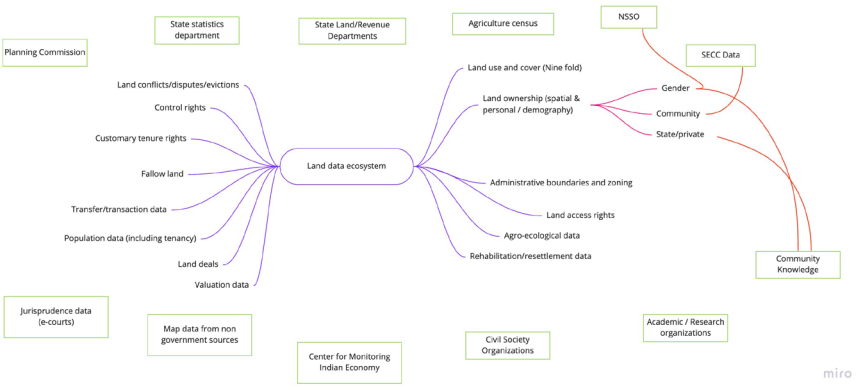
An information ecosystem has been defined in many different ways, but the Land Portal interpretation contains four key elements:

1. **Data & Information** - The very essence of the ecosystem. We include very purposely 'information' because not all sources of data in the land sector, particularly local sources, provide their knowledge in the way 'data' is commonly referred to: as raw, numerical data. To incorporate all knowledge and perspectives in the ecosystem, focusing only on raw data would be an oversight;
2. **People** - Data & information in and of itself will not invoke any change or impact. We need people to analyze, adapt and work with the data to ensure this happens. All people have different expertise and add a different value to the data and information. Not everybody is a data scientist and can perform statistical analyses, some people are more skilled in communicating data, or visualizing it. Everybody has a role to play in the Data & Information ecosystem;
3. **Attitude** - Another key element is attitude: in order for data and information to reach different people in different context, an attitude of sharing and of collaborating rather than duplicating, is essential. An attitude to understand the important and need of land data and information and willingness to invest time and resources to make them accessible and usable is critical. To ensure high quality of the data and remove possible mistakes, an attitude of giving feedback is also essential;
4. **Infrastructure** - Finally, in order for data and information to reach the different actors in their different contexts, a technical infrastructure is needed to allow the data to move from one place to another - just as roads or railways people need to move from one place to the other. This infrastructure, include the elements such as presented by Mr. Garula: the open data principles.

Within a well functioning Information Ecosystem, data and information can reach its full potential and be the key catalyzing factor needed to upscale knowledge and good practices, to achieve better and more inclusive land governance not only in India, but across the world.

MAPPING THE INFORMATION ECOSYSTEM?

With the abstract idea of the Information Ecosystem established, the participants proceeded to map the ecosystem in India. While mapping an Information Ecosystem and visualizing the availability datasets and databases, stakeholders and data flows, the gaps and disconnections become truly evident.



The figure above is a rough drawing of the first attempt to collectively map the Information Ecosystem. The **mapping drawing** is open for contributions by anybody who is interested. The exercise is a beginning which will be followed by a more rigorous desk study, involving all participants of the workshop as well as other stakeholders in the country.

The first (rough) attempt to map India's Land Information Ecosystem led to the following insights:

- **We should not only consider government data when it comes to land data.**

Our instincts are to consider land a subject of (state or federal) government. However, many other types of data actors are involved, such as research institutions, academia, NGOs, private sector, media as well as communities. Local knowledge particularly is important to reflect local realities on the ground. Bringing together the diversity of perspectives of different actors, can identify gaps and possible 'disconnects' between legal, formal and on-ground realities;

- **There is a need for standardization in classification of land data types.**

In conducting the 'mapping the information ecosystem'-exercise, we spent a considerable amount of time highlighting which types of land data exist, or should exist. There are possibilities to fall back on certain standardization efforts, such as FAO's Land Cover and Land Use Classifications, but this is not true for all types of land data. How can we attempt to get an overview of the land data ecosystem if we do not know of what data it should consist of?

- **Key gaps are important to map: no gender disaggregated data or out of date tenure data.**

In attempting to get an overview of what data exists or should exist, it is also important to highlight what does not exist. Whereas there may be data on land holders, but this needs to be disaggregated by gender as well; type of tenure is also important to record. Therefore a dataset may exist, but there is still a gap if the gender dimension is missing. Similarly, if data exists but it is largely out of date or contested, this is also an important element to highlight and reflect in an overview of the land data ecosystem.

Talk Show: Practical Examples of Working in the Data Ecosystem

Following the attempt in pertaining an overview of India's Land Information Ecosystem and the challenges that we face in accessing and/or using land data and information, the next session focused on four concrete initiatives, highlighting how these initiatives address the significant challenges of operating in a data ecosystem as controversial as that of land in India.

From left to right: Mr. Guneet Narula, Mr. Bhasker Tripathi, Mr. Dharm Raj Joshi and Mr. Jayahari K.M.

Moderated by Rina Chandran from the **Thomson Reuters Foundation**, the following four initiatives presented their views and experiences:

- **DataMeet** - Mr. Guneet Narula
- **IndiaSpend** - Mr. Bhasker Tripathi
- **LANDex Nepal** - Mr. Dharm Raj Joshi
- **World Resources Institute India** - Mr. Jayahari K.M

Talk show participants were asked on what their greatest challenge is in **accessing the data they need** for their initiatives. The challenges included accessing data that was not digitized or otherwise publicly available (for example by government), requiring a specific mandate to acquire the data needed, which takes considerable time and effort. Where data is available, the data is often stored in 'closed documents', such as a research paper published as a PDF or a map published as an image (such as JPG). Both DataMeet and Indiaspend spend a considerable amount of time and efforts liberating such data and information from these closed documents to make it adaptable and more consumable for a wider (and younger) audience. LANDex Nepal further highlighted that civil society perspectives are hard to find and therefore difficult to shed light on their contributions to the data ecosystem. Another element is that government data often is incomplete, in the sense that it does not provide the full picture needed, such as gender

disaggregated data on available land titles.

When it comes to **dissemination of data**, there is a significant challenge to go beyond the usual networks and people subscribed to particular mailing lists. How to reach those people beyond these networks? It requires participation of many different communities, actively pulling in new stakeholders. It is not enough to present a report. A report should be translated into different languages to get a wider reach, but also requires more active engagement than that. This can be done through events where people can meet face to face or webinars where outcomes are discussed. Another effective way to include more people in the debate about data, is to include them in data collection efforts as well (e.g. community mapping exercises). The media as well as social media are important methods to amplify these efforts. The challenge is how to bring across this complex but important message. How to convince media to focus more on land issues? How do we bring across a nuanced message in 240 characters? These are no easy questions to answer, but there is a need for this land sector to be more convincing to actively involve other sectors, players as well as media into the debate.

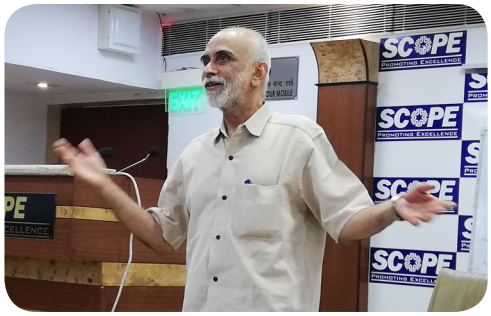
> *"Data is such a cluttered space, trying to find something through Google is very difficult. And even when you've found it, not many are able to understand and use it. How should we deal with this?"*

The data dissemination discussion also raised concerns on **data ethics**: privacy and consent. Land data is controversial and the fear of misuse is significant, therefore this needs to be clearly outlined in a data ecosystem. IndiaSpend highlights the importance of informing data subjects and data owners of what you will do with the data and where it will be published. Ultimately, increasing visibility of a dataset is generally appreciated. Discussions also sparked on how the **data ecosystem on land is such a cluttered space**. Often tools such as Google are used to search for relevant information, but it is very difficult to find what you are looking for. Once you have found it, how can you use it? DataMeet highlights how the filing system from an old library still apply today on the web: structuring, classifying and indexing content online is what makes it findable in the future. Organizations internally store overviews of where to access data or store data internally in case it will be taken offline after a certain amount of time has passed. But why is that not done in the open so more can benefit?

Data Cycle World Cafe

During the Data Cycle World Cafe, the participants discussed key questions on how to reach the ultimate benefit of the data by specifically looking at each step of the data lifecycle.

For **data collection & analytics**, the discussion sparked around how the data



ecosystem has almost become a “data marketplace” over time, where data cannot only be seen in the context of a single dataset, but with a much wider reach an impact: data can be shared and cross-referenced or analyzed to other datasets. Data platforms play an important role in this sense. In the vast and cluttered space that is the internet, the data ecosystem, data can very easily get lost and data availability and accessibility become chaotic. More structured data management is needed, where all kinds and forms of data can be organized. Data needs to be decomposed, disaggregated and standardized. Standardized in the sense of geographical reference, but also topical. The Biodiversity portal demonstrated how they structure all data according to standardized geographical classifications as well as standard taxonomies for species. Even within the data collection and analytics phase, data sharing needs to be a key consideration: for whom are we collecting this data and how will they use it? Collecting data and sharing only across silos of usual networks (be they academic, civil society or even government), limits the impact of the data considerably. A common taxonomy for the ‘land’ topic seems to be something that is urgently needed. This is something to be explored and possibly to build on the existing **LandVoc vocabulary** within the Food and Agriculture Organization’s AGROVOC vocabulary, that the Land Portal has been facilitating. Local usage of terms and how people use free tagging systems to classify their data and information, is something key to be considered to attain a harmonized and legitimized vocabulary.

For **data management**, key questions around data privacy and consent were topic of discussion, particularly when it comes to data collection in the form of community mapping. While in the research domain, there are clear protocols and rules to abide by to ensure consent to publish research reports, these are not always focused on sharing the maximum possible. Civil society attempts on the other hand, may not follow as strict protocols as in the research domain, but justify any uses of the collected data as being an initiative by the entire community that was involved in the mapping. The discussions among participants showed the many different interpretations of 'consent' are possible, highlighting the importance of making the scope what data subjects or holders are consenting to clear from the beginning. While the data management is a stage in the data life cycle to prepare for publication and sharing, and to address data ethics and privacy concerns before sharing to avoid invoking any possible harm, this is a process that needs to be considered from the very start - prior to the collection of data.

Within the data ecosystem, data needs to reach the right people in the right context to make a difference and reach maximum impact. **Data dissemination** is therefore a key element of the data lifecycle. The discussion led by Madaleine Weber, Communications Director at the Cadasta Foundation, focused on how we can communicate land data to an audience outside the land sector. While we might be convinced there is an interesting finding in our research or in the dataset we work with, but we need to find a way to ensure it reaches other people. The data cycle should not end with the publication of a report. Rather than being disappointed others do not see the same urgency in land issues as we do, we need to find other ways to inspire and engage them in our conversation.

"We are all inherently interested in land issues and agree on its importance. But how can we go beyond our own network instead of continuing to preach to the choir?"

Proven methods have been to tie data or statistics to a personal story: when people can relate to a person, the story becomes alive and is more likely to resonate with a wider audience. It can pull at the heartstrings to gain people's attention. News that makes headline is often negative. Finding ways to show positive results based on our work in the media is key.

The use of social media is also critical, using common or popular hashtags, tying into current events that people are following to show its relation to land, are powerful ways to bring in new audiences. Numbers, pictures and short videos can enhance visibility in social media. It is very time-consuming however and will take efforts of the entire data ecosystem to explore ways of bringing across our methods with a unified voice. Other important elements of data dissemination that tend to be overlooked is dissemination back to the data subjects and ensuring they are a part of the entire data cycle as well, rather than playing a role merely in the collection stages. Allowing the data to empower them as well, has an enormous potential that is often overlooked.

A final, often forgotten, stage of the data cycle is **data feedback**. Ultimately, the aim behind the data is that is it used. So when people publish data, how often do we get feedback from our data users? There can be discussion around data quality and bringing that back to the data provider. However, how should that be reflected over time? If a dataset is correct, do we work with versioning to be able to track what was changed and why for future reference? Other elements concerning feedback that were discussed was that there is not always a clear mechanism on how people can provide feedback or how to address certain points of feedback when they come in. Again, the topic of the data subject was mentioned as an important stakeholder to be able to provide feedback - but how to address language barriers or possibly their lack of access to internet? These are all questions that are difficult to be answered, but should be considered by both data holders and users. Feedback on use of data is important and we must collectively ensure channels exist to provide this feedback, and that they are utilized.

Reflections & Conclusions

Reflecting back on the discussions of the day, it was evident that there is a need to harmonize and better utilize the land data ecosystem in India to reach its full potential. Key insights to leverage the data ecosystem are as follows:

- **We should no longer consider data provision and sharing to be a responsibility of government alone.**

Civil society, academia, think tanks, the private sector and local communities all have valuable perspectives in this important debate. These perspectives might not all be accessible and published in a 'raw data'-format, but might very well be captured in documents or conversations. We all have a role to play to either collect, analyze, manage, publish, repackage or repurpose and use data so we can collectively benefit from its meaning. Data becomes reliable and valuable when we pull these various perspectives together and come to one common truth.

- **Responsible sharing of data should become second nature to all data collectors.**

Before even starting data collection, inclusive and responsible data sharing should be a primary consideration. Data management plans should include elements of anonymizing, sensitizing and structuring data in a way that makes it impossible to inflict harm on the data subjects once published. Prior and informed consent and appropriate data licensing are essential prerequisites for responsible sharing of data. Involving local stakeholders in data collection and use is critical.

- **Publishing data should be done in a way that is visible, findable and accessible to anyone.**

Storing of data before the age of Internet meant that a file needed to be carefully indexed and stored in order for people to be able to find it in the correct folder. While the Internet has changed the way we deal with data in many ways, the need for careful storing and indexing data has not. Following open data principles, including the use of geospatial-standards and controlled vocabularies and ontologies (such as LandVoc (link is external)) to classify the data, are useful tools to ensure that data published on the web can be found through portals and search engines and thus can be accessed and used by everyone.

- **Data dissemination means opening up a data conversation, that includes data subjects and goes beyond our usual networks.**

The land governance community is a small global community that struggles to sell its message to others. Launching a data report to our own mailing lists or Twitter followers is not enough. The land sector should make a collective effort to reach out to media and others outside of the land sector to increase visibility of this important topic. Data subjects should also be included beyond the data collection phase and be included in the conversations. Translating data and data products into various local languages and making them interdisciplinarily connected is essential to ensure the data debate is

inclusive and democratic.

- **We need a better overview of India's Land Data & Information Ecosystem.**

In this complicated landscape of land data, there is a need for an overview. A great deal of data is not published or accessible to the general public, stays within particular networks and doesn't reach wider audiences. Often data is not preserved online, as platforms may disappear or historic data is not kept online forever. There is a need for a tool, a data catalogue, that directs users to the various different sources and types of land data.

Many thought-provoking insights were shared and discussed among the participants of the workshop, and many of the important questions raised are not likely to be solved through one day's discussions. There was however a great consensus on the enormous potential the data ecosystem can have for land governance in India. More coordination and sharing and more inclusive discussions leading to more transparency and better decision making. The group committed to the following action points to strengthen India's Land Information Ecosystem to reach this full potential:

- **Continue mapping the land data ecosystem**

The exercise during the day was only a start. We need to deepen our understanding of the vast, complex and cluttered space that is the India Land Information Ecosystem. The mapping tool will remain open for inputs from others and the Land Portal Foundation commits to share experiences from its State of Land Information methodology to uncover the ecosystem to gain an even deeper understanding of the gaps and opportunities.

- **Creating a 'data catalogue' to serve as access point to myriad of different sources**

As a concrete outcome of the mapping exercise mentioned above, the outcomes can be shared in a 'data catalogue', concretely directing users to the different websites and platforms they can find relevant land data and information. Need of building a land-data platform in Indian context was also felt, where different land data available in online and offline could be made to interact with each other, providing scope for aggregation and disaggregation around administrative boundaries and thematic land indicators, locally relevant as well as globally important. This would make data engagements more intimate and useful for policy and practice.

- **Exploring a topical classification standard for land tenure**

The need for standard classification systems was evident from discussions. The group will explore how to build on existing initiatives such as LandVoc - the Linked Land Governance thesaurus and contribute to that, ensuring such a tool is built and enriched from “bottom-up”-perspective, allowing integration of locally relevant concepts into such a global standard.

- **Targeted Capacity Building for land data and information stakeholders to more effectively share and communicate data and information**

Based on the needs and gaps identified through the further mapping of the information ecosystem as well as (possible) challenges to harmonize and connect various databases and dataset while setting up the ‘data catalogue’, we will conduct targeted capacity building efforts to share data and information more effectively. Capacity building efforts may also focus on the dissemination and communication of data and information.

- **Connecting to wider networks for more effective and wider dissemination**

To address the challenges that were discussed relating to data dissemination and conversation beyond the land sector and to reach a wider audience, other initiatives were mentioned to address these things. During the India Land & Development Conference, thoughts were shared on connecting civil society organizations and the media in workshops to ensure media can be leveraged to reach a wider audience, catalyzing our message. Idea of India Land Ecosystem that was launched during ILDC, aims to connect land actors and institutions across sectors, geographies and hierarchies. Similarly, the World Bank works with civil society on embedding codes and data visualizations. We should ensure land actors are part of such discourses to reach maximum impact.

The fact that data has the possibility to empower, to promote transparency and catalyze change is undisputed. We need data to accomplish the goals we strive towards. India’s land data & information ecosystem is a vast and cluttered space. All of us have a role to play to uncover the myriad of different sources in the data & information landscape, to increase access to and use of data and information and to make the ecosystem more inclusive and democratic. **What is your role?**

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