



UNLOCKING DATA INNOVATION

FOR SOCIAL LICENSE IN NATURAL RESOURCES

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These are key highlights from the knowledge publication "[Unlocking Data Innovation for Social License in Natural Resources](#)" which describes how companies can use new data tools, approaches, and techniques to generate and sustain social license in communities. It presents the concept of a data value chain and provides case study examples of how companies have started using data to engage with communities, develop trust, create new social and economic opportunities, establish new forms of partnerships, and give voice to a wide variety of stakeholders in a smarter way. It offers tools that companies can incorporate into their operations and processes that contribute to the development of social capital. It also examines the data policy issues most relevant to the topic of social capital.

The publication is part of a series of knowledge products by IFC's From Disclosure to Development program. Two other publications in the series are [Data in Action](#) and [Transparency for Impact](#).



USING DATA TO DE-RISK LARGE INVESTMENTS IN THE NATURAL RESOURCES SECTOR AND BENEFIT LOCAL COMMUNITIES

The natural resources sector is in the midst of a digital transformation, as companies are increasingly using new data sources, including drones, sensors, unmanned vehicles, satellite images, robots, machine learning, artificial intelligence, and sophisticated augmented and virtual reality tools. Digitalization transformation could reportedly bring as much as \$425 billion of value to the mining industry, customers, society, and the environment by 2025. Companies that reinvent themselves digitally will gain the most from this transformation.

REAPING THE BENEFITS AND ADDRESSING THE CHALLENGES OF DIGITALIZATION

This data-led transformation is creating new challenges for companies and their stakeholders. Automation will reduce the number of physical labor jobs—a traditional value proposition of the sector to communities. New, safer jobs will be created, but they will require digital skills, which many relatively unskilled

workers living in marginalized communities beset with poor infrastructure and connectivity lack. These challenges are compounded by the fact that the use of data as a social and economic asset is a relatively new phenomenon and the implications and consequences of many data-driven trends are not yet fully understood.

USING DATA TO MAKE OPERATIONS MORE EFFICIENT

New types of data are adding value to the natural resources value chain in many ways:

- Analytics can help increase throughput.
- Machine learning techniques combined with new sources of data, such as sensors and satellite images, are making exploration more efficient.
- Artificial intelligence can improve exploration; its application to historical exploration datasets can detect traces of metals and minerals.

- The constant flow of data from equipment allows managers on different continents to troubleshoot equipment more effectively.
- The use of sensors for ore sorting reduces mine waste.
- New sources of data can help companies simulate price trends, model expenditures, conduct predictive maintenance of equipment, and identify market trends.
- Augmented reality and virtual reality tools can improve training.

USING DATA TO SECURE “SOCIAL LICENSE TO OPERATE”

In this environment, obtaining social license to operate — acceptance from stakeholders, local communities, and the general public of their business practices and operating procedures—can help companies de-risk large investments and establish the groundwork for sustainability, mutual social and economic benefit, and growth. SLO can establish the groundwork for sustainability, mutual social and economic benefit, and growth in the natural resources sector.

Data can strengthen social license to operate in several ways:

- Open data can increase transparency and accountability.
- Data stories can build trust.
- Social platforms can increase inclusion and participation.
- Web and mobile applications can increase the accessibility of services.
- Data dashboards and visualization can improve decision making and responsiveness.
- Data analytics can increase equality and reduce discrimination.
- New digital tools allow companies and government to engage with and use real-time data to assess community sentiment and perceptions—and to address the

The transparency and community engagement needed to secure social license to operate can also help create the foundations for developing proactive systems for companies to recognize the concerns from host communities, governments and civil society to improve planning. The goal is to establish social value that is measurable and verifiable and emphasizes the issues that matter to different groups of stakeholders.

Data is important, but companies must not treat it as a magic bullet that can resolve all challenges associated with trust building and engagement. They need to complement data initiatives with traditional techniques such as meetings and regular interactions with stakeholders. Open data can help improve transparency and deepen trust among stakeholders, but it alone cannot fix a broken relationship.

LEARNING FROM THE EXPERIENCES OF OTHER COMPANIES

Some companies have already started using data to engage with communities, develop trust, create new social and economic opportunities, establish new forms of partnerships, and give voice to a wide variety of stakeholders in a smarter way. Others can learn from some of the lessons IFC has gleaned from its work in the sector in recent years:

- Understand how data is transforming every aspect of the natural resources sector, including community engagement, trust, and other key elements in the value chain.
- Develop a data strategy and accompanying culture; make data an essential part of real-time decision making as well as measurement and management reporting.
- Invest in both soft (skills and policies) and hard (connectivity, data centers) infrastructure.
- Develop new data-driven products and services, such as visualization, engagement, and analytical tools, which provide opportunities to work with communities and stakeholders in new ways.
- Develop data partnerships and collaborations rather than perform all functions independently in-house.
- Collect data more systematically and comprehensively.
- Standardize data practices and disclosure formats, in order to make data interoperable with data from other sources and adopt sector wide standards.
- Improve disclosure practices.
- Avoid overloading communities with requests for data; think carefully about the incentives for communities to provide data and the importance of showing them why data is being collected.
- Invest in data skills and literacy within the company and in the community.
- Develop trust through transparency and the creative use of data tools to make messages relevant and usable for communities.
- Engage communities in the design and deployment of data collection tools and processes; position data as a joint asset whenever possible

Resources provided in the report can help companies interested in collecting data for SLO. They include easy-to-use self-assessment checklists on readiness to use data, the data value chain, and the data policy environment.

Read the full publication [here](#).

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