

Module 6

Open Innovation Platform for Agricultural Data Ecosystems

Case Study

Open Innovation Platform for Agricultural Data Ecosystems

How access to data can advance innovation while maintaining a competitive advantage

Summary

Agriculture in India employs more than 50% of the population. Lack of access to timely, accurate data restricts problem solving in agriculture, and so the [SatSure Sparta Platform](#) provides a place for innovation and collaboration by providing access to ready to explore, processed data from multiple sources. [SatSure](#) are a for-profit initiative who hope to advance innovation in agriculture and commercialise access to and use of data from satellite imagery, combined with machine learning. Solutions using or informed by the data are to be made available to the public via subscription to the platform. By bringing this model to the market SatSure hopes to achieve a sustainable business model as well as driving innovations in use of data to solve problems in the agricultural ecosystem.

The spirit, intent and design of the platform is to foster trust among its members, encourage collaboration and create a community dedicated to innovation and solving problems together. SatSure hopes to encourage more publication of data in India, support the production of services which advance the agricultural systems, and ultimately strengthen the sector as a whole.

¹<https://www.ibef.org/industry/agriculture-india.aspx>

Key learnings

- Access to basic agricultural data in India is limited to government data and paid for services.
- The SatSure Sparta platform demonstrates it is possible to benefit from open data principles by allowing access to some data at no financial cost, while making a competitive model by introducing charges for more detailed data or higher usage.
- Sharing some data at no cost encourages use of paid for services and facilitates a strengthened agricultural infrastructure in India.

The challenge

Agriculture is the largest sector in India, employing more than 50% of the population.¹ The sector itself is highly variable and as such vulnerable to a wide range of risks. For example, even at state level, there is enormous variation in agro-climatic conditions, extent of irrigation, penetration of roads, proximity to markets and the availability of credit through banking infrastructure. These factors all represent possible risks to livelihood and income of individual farmers and can also have lasting effects on the agricultural sector as a whole.

Access to data can mitigate these risks by driving innovation and enabling better decision making.² However, access to agricultural data in India faces a number of challenges: a large number of stakeholders make it difficult to coordinate data collection and storage, while most of the agricultural data is not at an appropriate level of detail (granular) enough in relation to time or location. Further challenges are caused by:

- A lack of timely, quality data at district level and poor collection and database management practices
- The limited technological capacity within institutions
- A lack of up to date data sets, with some of the latest available data as much as 10 years old
- Where data sets are available, they can often be inconsistent in their collection, source and analysis

There are a number of private companies which have data repositories in India, however, the data is often only accessible with restrictions on use and on a paid-only basis. In order for the value of shared data to be fully understood it is important that datasets are of a consistent quality and utility, namely that data is findable, accessible, interoperable and reusable (FAIR) as well as safeguarded. The investment required for standardising and stewarding datasets can put organisations off making access to data free of charge.

² https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/731349/20180730_HMT_Discussion_Paper_-_The_Economic_Value_of_Data.pdf

The solution

The SatSure Sparta platform demonstrates the value of accessible data and a model that supports commercial competition. SatSure gives users access to its models and platforms free of charge. Some data can be accessed at no financial cost, with other data accessed on a subscription only basis based on the level of detail and amount of usage. In all cases data is shared under a non-open licence, however it is possible for users to understand the value of what they will then pay for.³ Using a freemium model in this way is part of SatSure's business model and a way to keep their business sustainable.

Datasets are regularly updated from various data sources such as from government or satellite data from commercial organisations, and provide information on crop health and stress indices, rainfall and temperatures. To date, SatSure has opened up the platform to selected users such as NGOs and selected private institutions. They are currently in the beta phase of testing, with a limited number of users who are trialling the platform as a place to 'co-innovate' using discussion forums and blog posts.

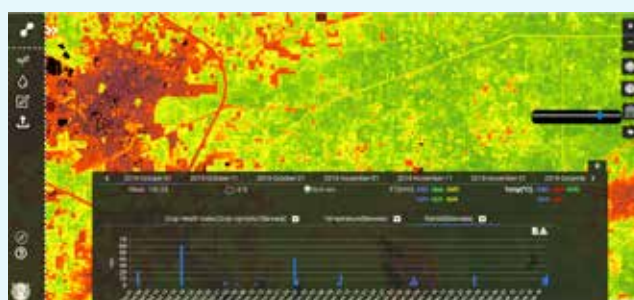
SatSure has collected feedback through surveys to understand how the platform meets user needs and what the platform might provide in the future.⁴ These insights will help attract to the platform a diverse range of actors, including data scientists, policymakers, agronomists and developers.

³ Science, Digital; Hahnel, Mark; McIntosh Borrelli, Leslie; Hyndman, Alan; Baynes, Grace; Crosas, Merce; et al. (2020): The State of Open Data 2020. Digital Science. Report. <https://doi.org/10.6084/m9.figshare.13227875.v2>

⁴ <https://theodi.org/about-the-odi/the-data-spectrum/>

⁵ <https://www.google.com/url?q=https://docs.google.com/forms/d/e/1FAIpQLSeolYJJbnmhfRA4h93JPlwl3dY6kMuEr-syaEITdhdDprDITA/viewform&sa=D&ust=1606734311636000&usg=AOvVaw146ZOzLMp52KZ48xM3tayh>

To maintain their competitive advantage, SatSure have also provided access to other private institutions to publish and view datasets. The aim is to create a data marketplace where users can pay for access to good quality data that is interoperable. By taking this approach SatSure hopes to show other actors in their data ecosystem the relevance and value of subscribing to their platform.



The impact

The SatSure Sparta platform is still in its early stages and the success of the platform depends upon the engagement of users in India.

Anticipated impacts include:

- Increased collaborative grassroots innovation to help solve challenges in Indian agriculture
- Increased sharing of data from other private data holders in India
- A sustainable business model using the freemium approach, and maintaining a competitive advantage in the marketplace
- Increased access and use of data available to a range of users

Lessons learnt

The main lesson to date is around establishing clear use cases. Even with advancements in application of technology in agriculture, many of the beta-testing users still haven't been able to narrow down on exact use cases which satisfy their requirements.

Being clear on the intended use of the platform will inform which data will be added in future.

Future plans

"We want SatSure Sparta to be a marketplace for all datasets pertaining to problems in the agricultural domain, which today is extremely fragile."

SatSure plans to open up more datasets for free, and have other, more detailed datasets available as a paid for service. There will also be a scaling charge associated with hits to the application programming interface (API) which allows users to build programmes that dynamically download the latest data for use in other applications.

Following some delays related to COVID-19, the platform will be launched to the public in January 2021. With the appropriate licences SatSure will also host the datasets of other users too, including public datasets, and remote and remote sensing derived datasets.

Further resources

If you are planning to provide access to data in a similar way to this case study there are resources in the FAIR data toolbox to help you do this and manage the same challenges:

- Module 5 – Sharing data through data licensing
- Guide: Deciding how to provide access to data
- Explainer: Agriculture Data Spectrum
- Guide: How to choose an open data license
- Checklist: Designing data sharing agreements

Data Sharing Toolkit



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datasharingtoolkit.org

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