CoP Data-Driven Agronomy

Mission

To harness modern information technologies to advance agricultural practices in relation to particular socio-economic and environmental contexts in a way that promotes the democratization and transparency of agricultural information.

Vision

By 2022, be a global leader in fostering innovation in farmer-led data-driven agronomy. Using FAIR[1] principles to collect, analyze and disseminate data and provide those involved in agriculture with rapid and actionable information in order to: (i) optimize productivity and (i) improve both the sustainability and profitability of the agricultural enterprise.

Data-Driven Agronomy

Data-driven agronomy refers to a set of complementary approaches that enhance traditional agronomy. Specifically, data-driven agronomy integrates across three main principles: (i) increased use of observational information[2], (ii) data mining, and (iii) contextualized information. This combination facilitates discoveries that can help provide farmers, technicians and researchers with new information on best practices within specific intersections of different crops, environmental, and socioeconomic conditions. Data-Driven Agronomy addresses key challenges for tropical agriculture such as closing yield gaps, using resources more efficiently coping with climate change.

In approach data-driven agronomy with FAIR principles, we are democratizing access to data and information and, in doing so, work toward meeting targets related to the SDGs on poverty, hunger and climate change. The premise of Data-Driven Agronomy is to add value to both existing and new datasets, thus increasing return on investment in existing agricultural development activities and, furthermore, allowing more producers to benefit from the collective knowledge and experiences of other producers.

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[1] Findable, Accessible, Interoperable, Re-usable https://library.cgiar.org/bitstream/handle/10947/4303/2-Big%20Data%20Platform%20Full%20Proposal.pdf?sequence=1)

[2] Sagarin, R., Pauchard, A., 2010. Observational approaches in ecology open new ground in a changing world. Front. Ecol. Environ. 8, 379–386.

CoP on Data-Driven Agronomy

The presented CoP will bring strategic partners and CGIAR centers together to collectively develop and implement Big Data tools based on FAIR principles. It will catalyze the involvement of a greater number of members of agricultural community, and will insure that advances in data-driven agronomy to support the farmers, technicians and researchers committed to meet the SDGs.

Long-term objectives

- To democratize the use and the understanding of modern information technology as a basis for collecting, analyzing, and disseminating agronomic data for optimizing agricultural production.
- To support farmers, researchers and rural advisory services with contextualized information on how productivity and profitability can be increased under specific conditions.

Short-term, Medium-term objectives

- To identify key actors and initiatives working on Data-Driven Agronomy and gauge strengths and critical gaps across CGIAR and strategic partners.
- To strength the capacities of the strategic partners, allowing them to take part in the deployment of the CoP.
- To showcase iconic examples of Data-Driven Agronomy and position them internationally.

Work Plan

Activities		Deliverables per activity	Estimated timeline																			
			2017				2018				2019				2020				2021			
			Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4	Q 1	Q 2	Q 3	Q 4
1	**Mapping out actors initiatives, gaps and strengths**	• Map of key actors • Map of gaps and strengths by institution[3]																				
2	**Identification of opportunities**	• List of institutions using observational information • List of institutions with historical information																				

[3] e.g climate, soils and crop management data, analytical tools, mechanisms of data storage, state of FAIR principles, APIs, APPs

		• List of institutions with recent information using novel tools[4] • Map of data approaches used to support extension services • List of terms suggested to be standardized																					
3	**Positioning data-driven agronomy**	• List of the international events attended [5] • At least 3 Blog Posts/year • At least 5 more partners engaged in the CoP • A flyer on the CoP																					
4	**From identification to action , and delivering first FAIR products**	• At least 2 proposals/year submitted by de CoP • At least one publication/year submitted • At least 3 FAIR scripts/year • At least 3 FAIR protocols/year • At least 3 FAIR datasets/year • At least 2 FAIR APPs or API/year																					
5	**Empowerment of strategic partners with Data-Driven Agronomy tools**	• At least 1 workshop/year • At least 5 tools validated by the CoP/ year • At least 5 technicians empowered with the tools / year • At least 3 internship/year																					
6	**Innovation forum (side event of Big Data Convention)**	• Presentation of inspiring projects																					
7	**Make available the Data-Driven Agronomy tools to everyone**	• At least 5 extension services using the tools • At least 5 centers using the tools																					

Budget

The total budget we have to work with in 2017 is 100K USD. 25K allocated to pay time of the CoP coordinator. (Daniel Jiménez – CIAT). The remainder of the budget expected to be used to achieve the deliverables of the CoP for 2017. This includes travel costs, consultancy, and participation in events.

[4] e.g, satellite and drones imagery, on-field sensors, etc.,

[5] DataJams, Hackatons, workshops at universities, conferences, twitter, social networks, etc.,