Data: Creating value at scale for the agrifood industry

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Introduction

• My name is Andres Ferreyra
  • Electric / Electronic Engineer
  • MS in Agrometeorology
  • PhD in Agricultural & Biological Engineering

• I’ve been working in agricultural data topics for 28 years, and in agrifood data interoperability for 17 years
  • AgGateway / ASABE / AEF / ISO

• Enabling frictionless data sharing while protecting proprietary info.

• Why are we here?
  • I co-led a team of 180 experts from 20 countries to do a gap analysis of smart farming for the International Organization for Standardization (ISO).
  • ISO created a new Technical Committee on Data-Driven Agrifood Systems
    • Home for new standards development
    • It’s relevant to you.
Farming, Food and Feed Production: The challenges are real

• Agricultural and food production is a complex, adaptive process that involves hundreds of decisions per crop season.
  • It’s complex regardless of farm size
  • Smallholders* are more vulnerable, have less access to inputs, advice, finance, risk management, etc.

• In the past these decisions were often driven by traditional local customs. In this rapidly changing world, they must increasingly be made based on data.

* Definition varies geographically; often using farm area (e.g., < 2 ha) as a metric
Agrifood systems are data-exchange-intensive

How do they fit in?
They produce ~46% of the world’s food…

…but have less access to:
- crop inputs,
- mechanization,
- training, advice,
- finance,
- risk management,
- digital literacy
- phone data plans
Example: iVCD

- Inclusive value chain development (iVCD)
  - Contracts link small producers with other value chain actors
  - Buyers secure higher volumes / quality
  - Producers get access to credit, agronomic advice, risk reduction
- Governments and international organizations have *piloted* many iVCD experiences...
- ...but there’s a **lot** of data exchange and friction in a system like this.
- **Scaling up is much easier with standards**
  - Standards let the different systems “talk the same language”

Figure adapted from https://blogs.worldbank.org/jobs/africa-imports-billions-food-year-it-could-be-creating-local-jobs-instead
Not Using Standards:
There are \((P \times C)\) connections to maintain

Using Standards:
There are \((P + C)\) connections to maintain
When you find yourself in a hole, stop digging


- The global agrifood sector is in a bind:
  - We need to scale up data exchange to support principled decision-making for 21st-century problems
  - Current standards don’t support this
  - A cause: industry and its standardization efforts grew bottom-up.

- ISO realized this and acted:
  - Strategic Advisory Group for Smart Farming
    - 180 experts from 21 national standards bodies
    - Gap-checked, developed strategy to guide hybrid top-down, bottom-up action.
  - Created TC 347 on Data-Driven Agrifood Systems
    - Permanent home for standards specific to this field
The Ask: Get Involved

• Through your professional organization
  • Your company needs to be involved, as does your professional organization. Make sure they understand this is important to you.
  • Involvement: they’ll need to send people and invest some money.

• Get involved directly
  • Your experiences, knowledge and perspective are critically important!

• Contact us for more info
What’s in it for you?

1. When there are data standards in place, digital tools become a lot easier to use.
   - “I like how this software works; not sure why. It can talk to other stuff.”
   - Examples: farms, elevators, feed mill, transportation company, downstream buyers, packaging.

2. The point is to help you be more profitable, sustainable, and compliant
   - (i.e., keep your freedom to operate.)

3. Participating in the ISO international workshop and TC 347 will let your voice be heard in the agrifood data standards space.
   - Opportunity to inject requirements / necessary capabilities into reference architecture and standards, and guide progress.

4. Enable scale in data exchange across global value chains.
Thank You!

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