



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**.

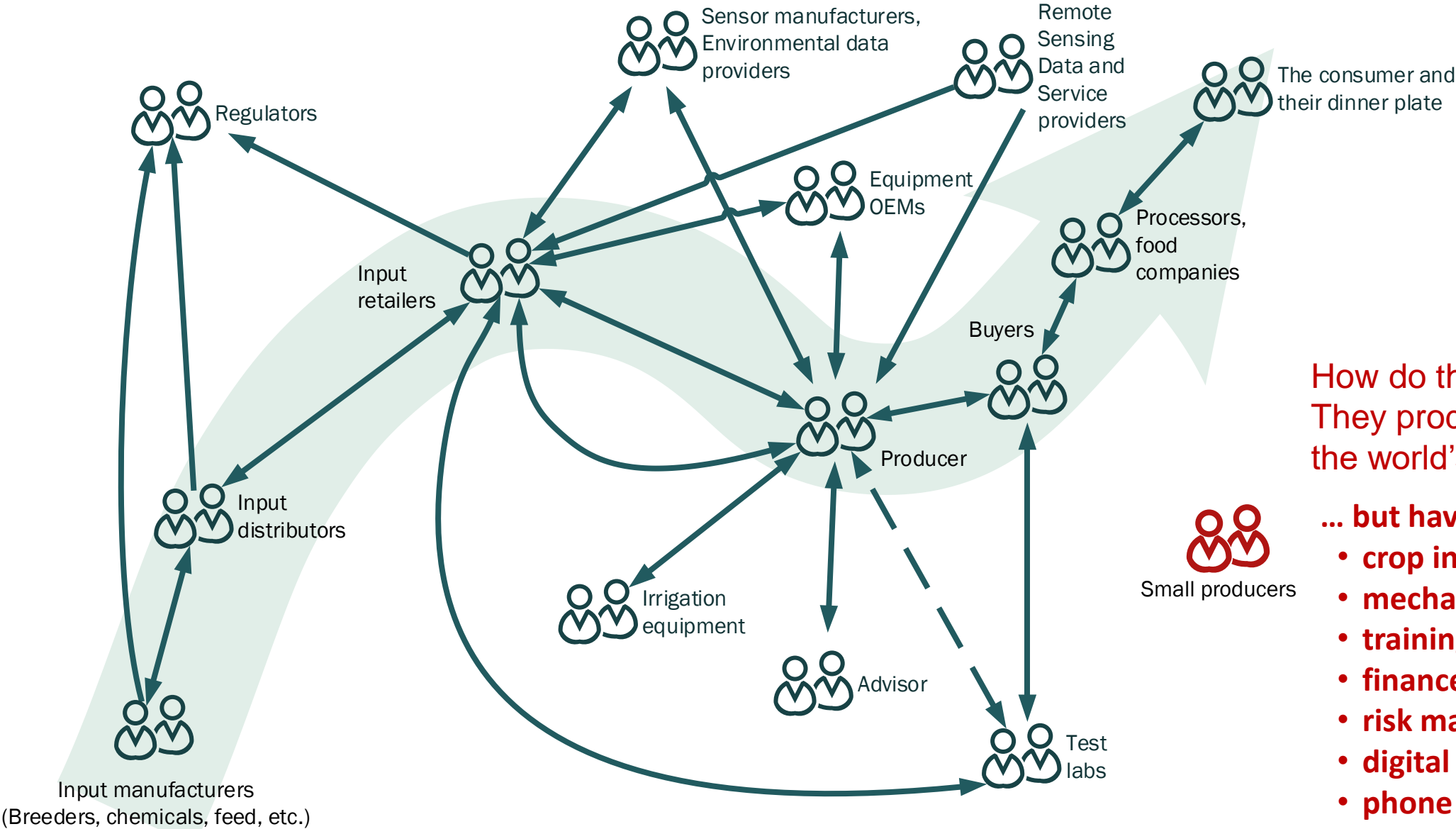


Farming, Food and Feed Production: The challenges are real

- 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”

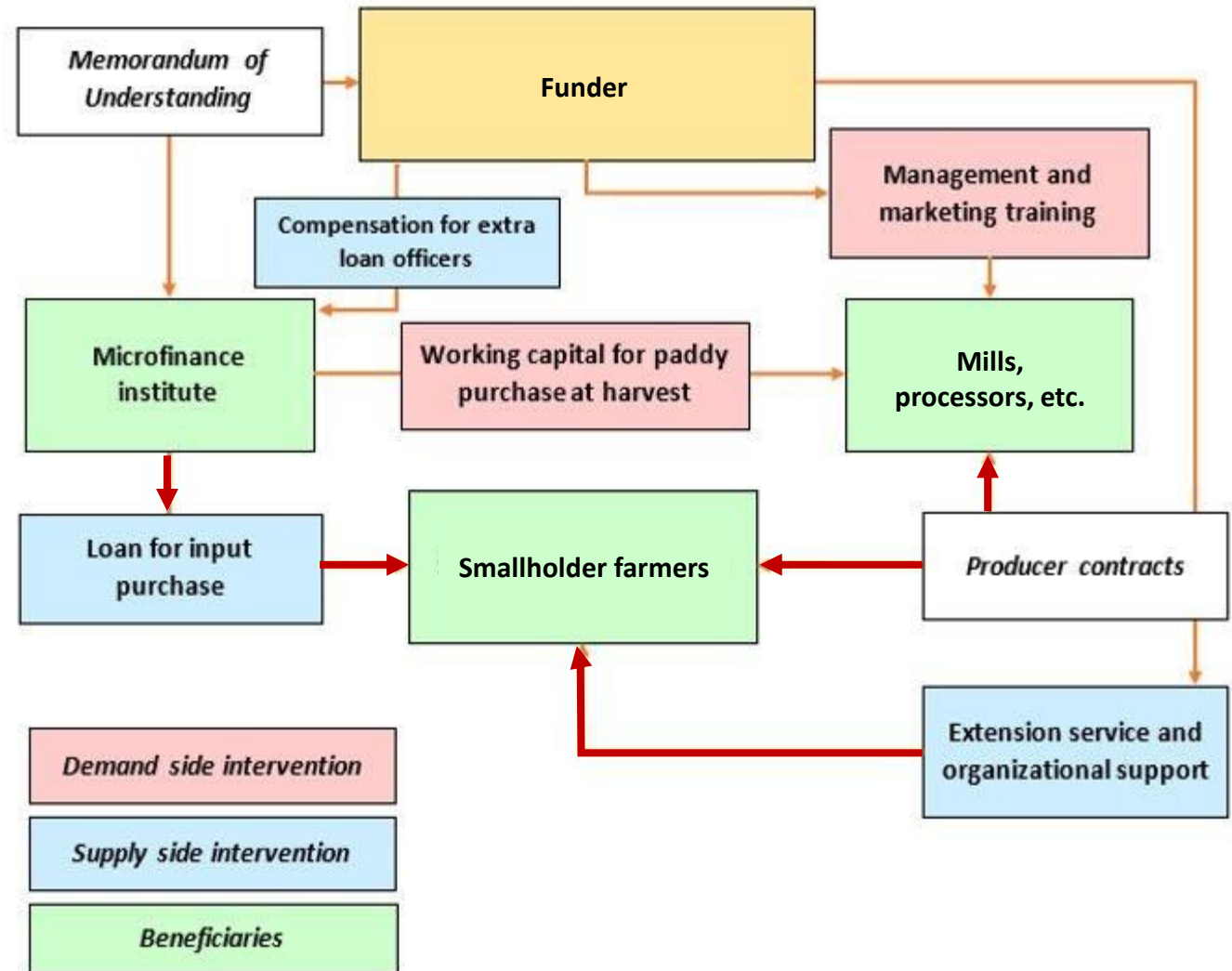
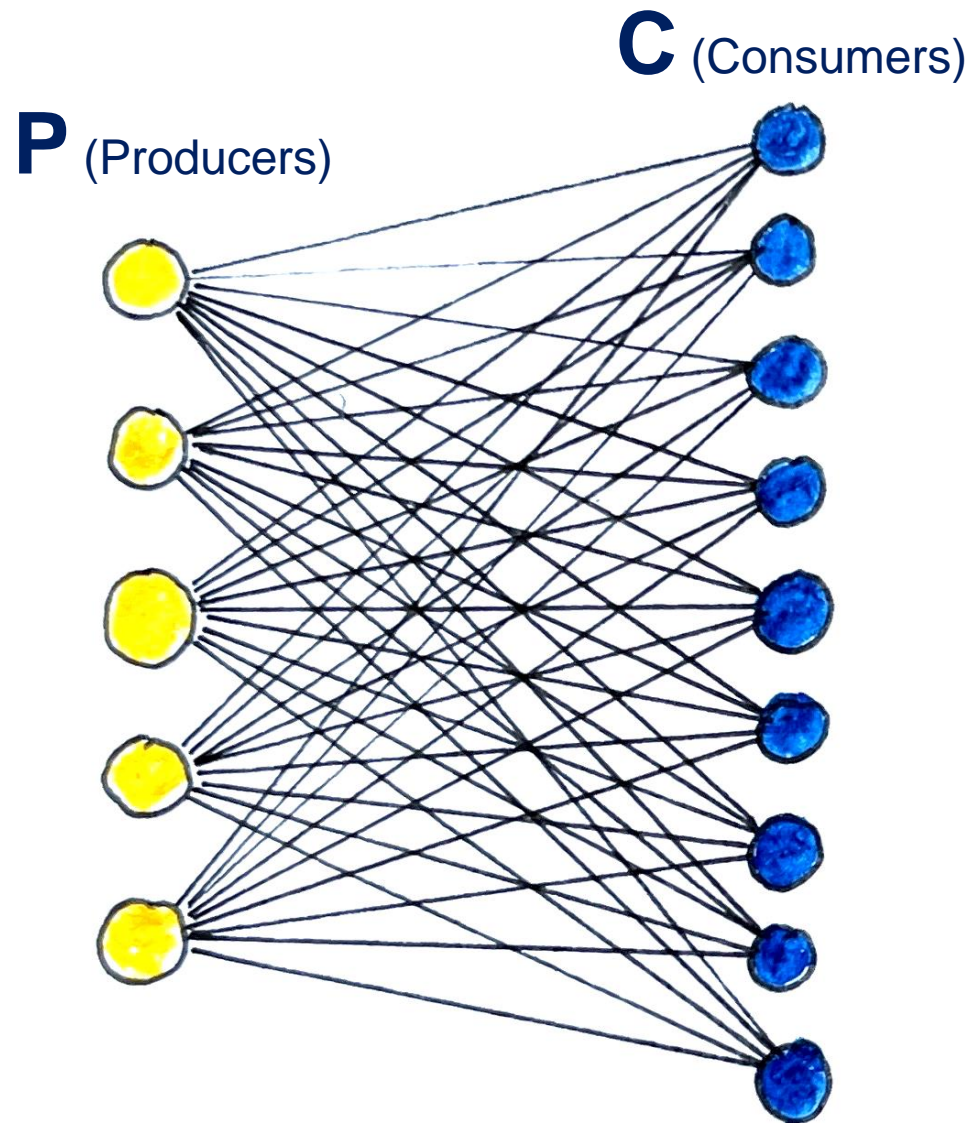
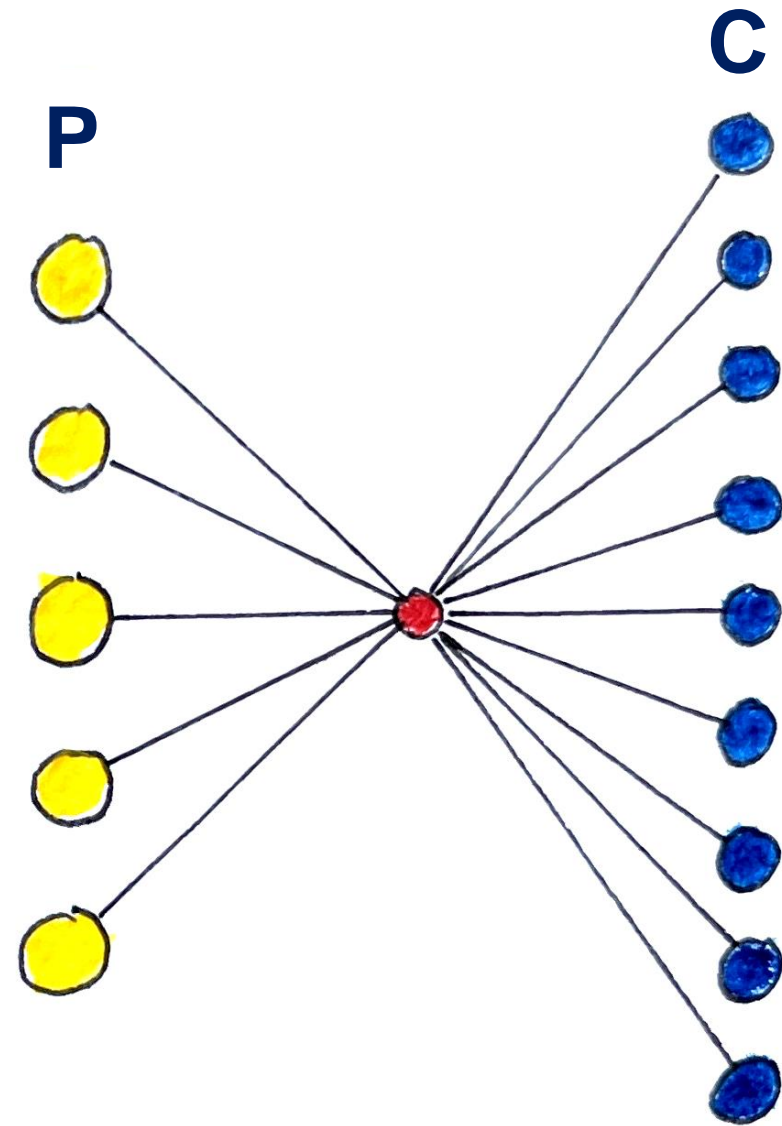


Figure adapted from <https://blogs.worldbank.org/jobs/africa-imports-billions-food-year-it-could-be-creating-local-jobs-instead>



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

(**Wordsworth Dictionary of Proverbs (2006) p 283**)

- 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

Picture: https://upload.wikimedia.org/wikipedia/commons/a/a7/Stop_Digging_%5E_-_geograph.org.uk_-_195319.jpg

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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