Transdisciplinary challenges and opportunities for telecoupling research: Engaging private sector stakeholders

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My perspective

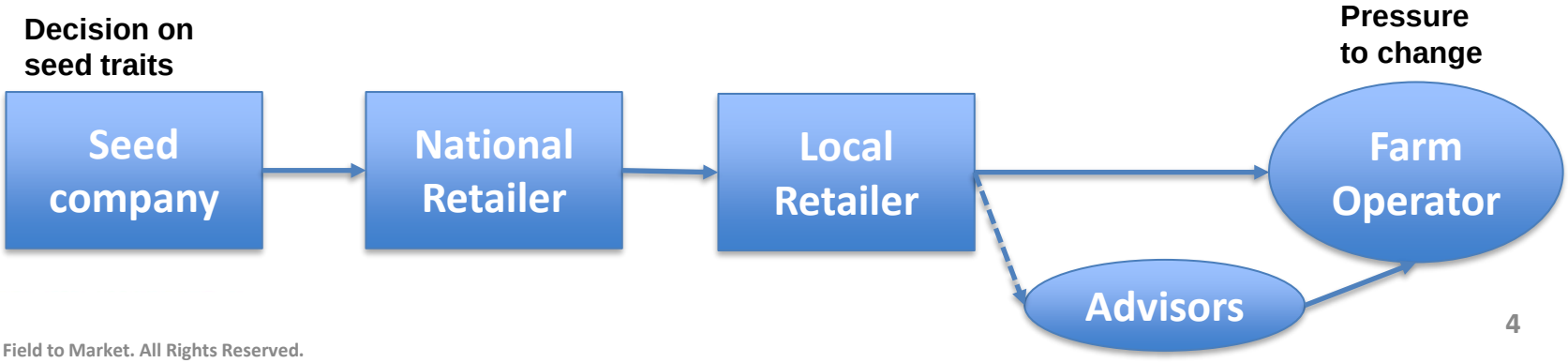
- Research background in crop, land use, and integrated assessment modeling
- 6 years as lead scientist for a non-profit multi-stakeholder organization
- Develop science-based tools and programs for the private sector to use in reducing environmental impacts from US commodity crop agriculture
  - Tools require models and agronomy
  - Programs require transdisciplinary approaches integrating geography, social science, environmental models and data analysis

What does it take for a private sector program to be effective?

- Technical measurement tools are necessary but not sufficient
- Need to understand the supply chain dynamics, the motivations of landowners and managers and have effective strategies for engaging them
  - Need partnerships with experts in the community
- Paying for data collection does not drive change. Supporting change by strategic investment in what the impacted community needs might.
  - Sustainable soy?

Understanding where to engage to make a difference

- Example: Public pressure on food companies to reduce use of neonicotinoids leads to supply chain pressure on farmers to reduce their use.
  - Farmer's choices when purchasing seed are limited to pre-treated seed with a replant guarantee OR poor performing untreated seed with no guarantee
  - Who is in control of the options? Who has the power to make a difference in the system?



Using Transdisciplinary Science to Challenge Assumptions

- Question is not “How do we influence the farmers to change” but “How do we establish enabling conditions so that the easy choice is also the best choice for the environment”
- Current work is on identifying “structural barriers” that limit conservation practice adoption
  - Supply chain, farm finance, educational and cultural barriers all exist
  - Can be overcome but relatively few farmers have the combination of knowledge, skills, interest and support to do it alone
  - Limited case studies and survey research
  - Partnering with The Nature Conservancy, academics and the Foundation for Food and Agriculture Research to frame the transdisciplinary research needs in this space

Corporate climate commitments influencing sourcing lands

Scope 3 Commitments

	2020	2025	2029	2030	2039	2050	Undated
Climate Positive							
Carbon Neutral/ Net Zero					Unilever	General Mills Innovation Center for U.S. Dairy, Nestlé PURINA, PEPSICO	AJINOMOTO, syngenta
1.5 °C		U.S. COTTON TRUST PROTOCOL	BAYER	AJINOMOTO, General Mills, Unilever			
Well Below 2.0°C		Mondelēz International SNACKING MADE RIGHT		DFA Dairy Farmers of America, syngenta, TATE & LYLE			
2.0°C	Nestlé PURINA	General Mills		Cargill, Corbion, Kellogg's, PEPSICO, TARGET, The Coca-Cola Company			

Are these targets meaningful?

- "companies are doing more than they advertise, but making slower progress than originally hoped."
- "corporations' sustainability efforts contend with not only other actors' challenges to their legitimacy and authority, but also their own lack of knowledge and access to information."
  - Freidberg, 2019: https://doi.org/10.1080/03066150.2018.1534835
- Measurement and reporting protocols are complex, require long term investment, training and partnerships
- Research to determine whether and under what conditions supply chain efforts to achieve environmental goals are effective is essential
- Understanding who is holding companies accountable to their goals is also key

Engaging private sector stakeholders

- **Listen first**: What is their current level of knowledge or engagement in the issues related to your research? Do they have goals or needs where your research is relevant?
- **Find the language**: Break it down to basics, put your work in the context of science they are familiar with.
  - The soil carbon bandwagon
- **Who has the power**: Is the company a driver of the system or reacting to what others in the system are doing?