

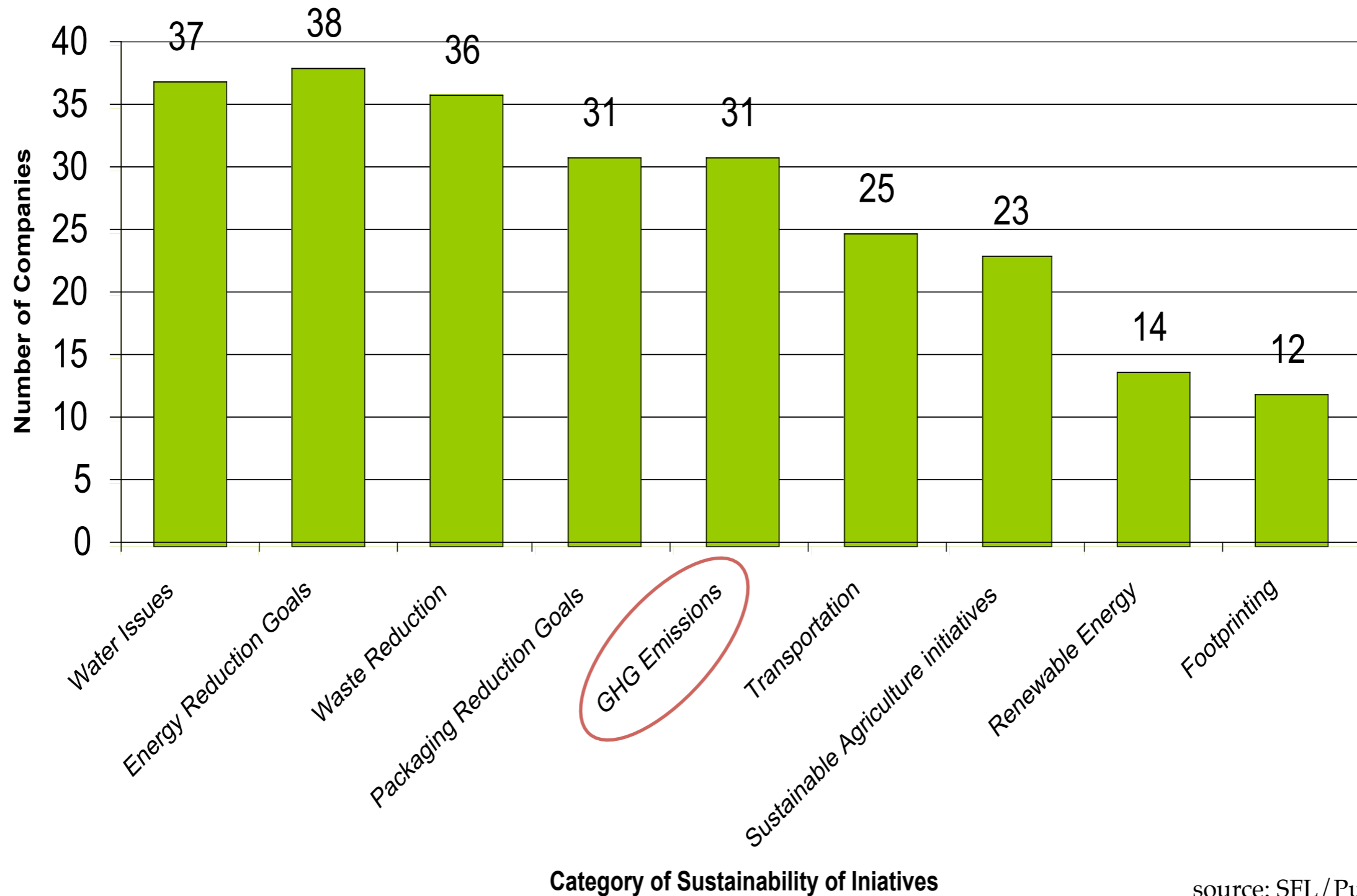
Cool Farming Options

*A global initiative to reduce
agricultural GHG emissions using the
Cool Farm Tool GHG calculator*

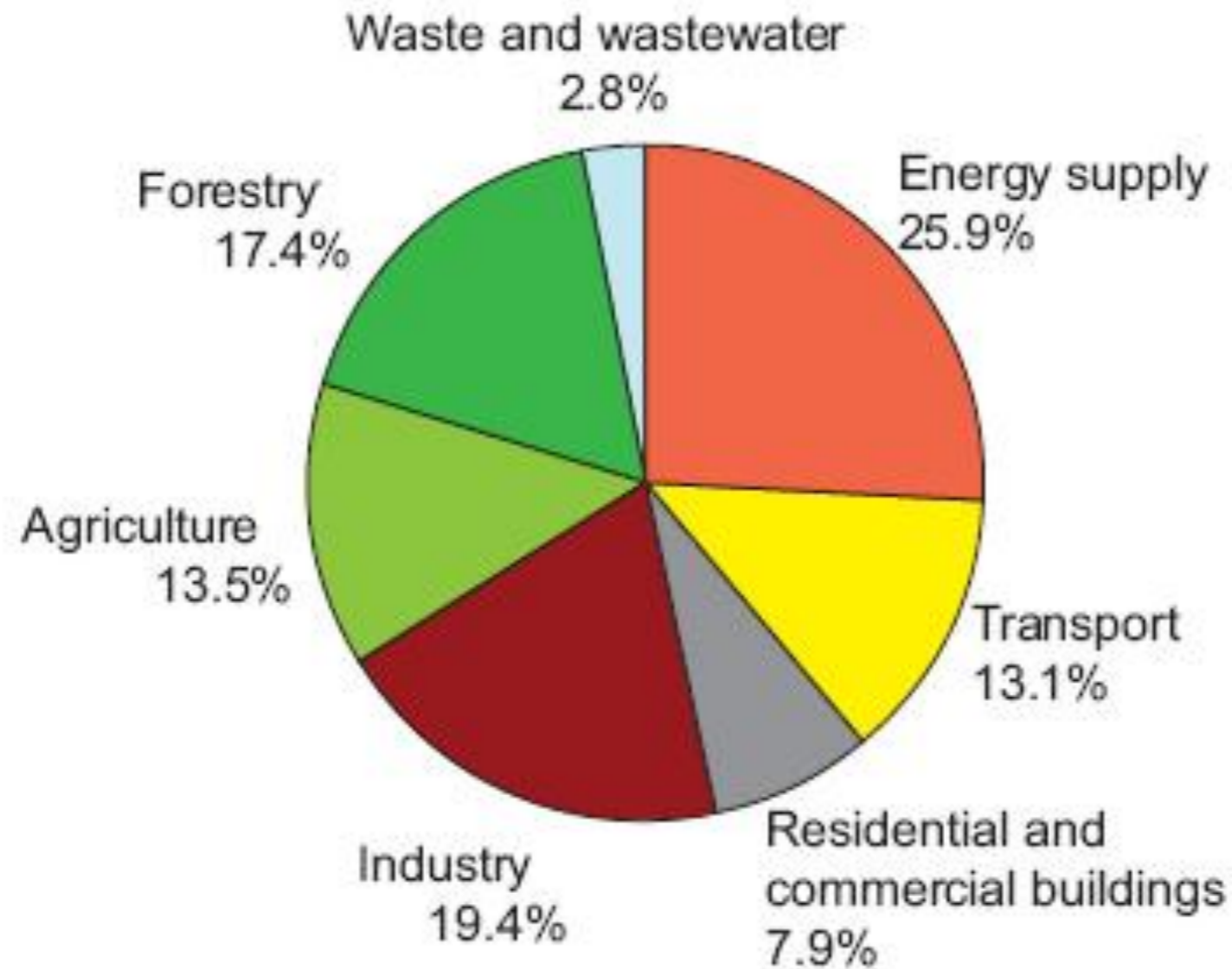
co-developed by:



31 of 50 top food companies report on GHG emissions



Agriculture produces more GHG than transportation



Unlike other GHG sources, agriculture has a mitigation potential that could offset most of its emissions.



This presents an opportunity for the food & beverage industry



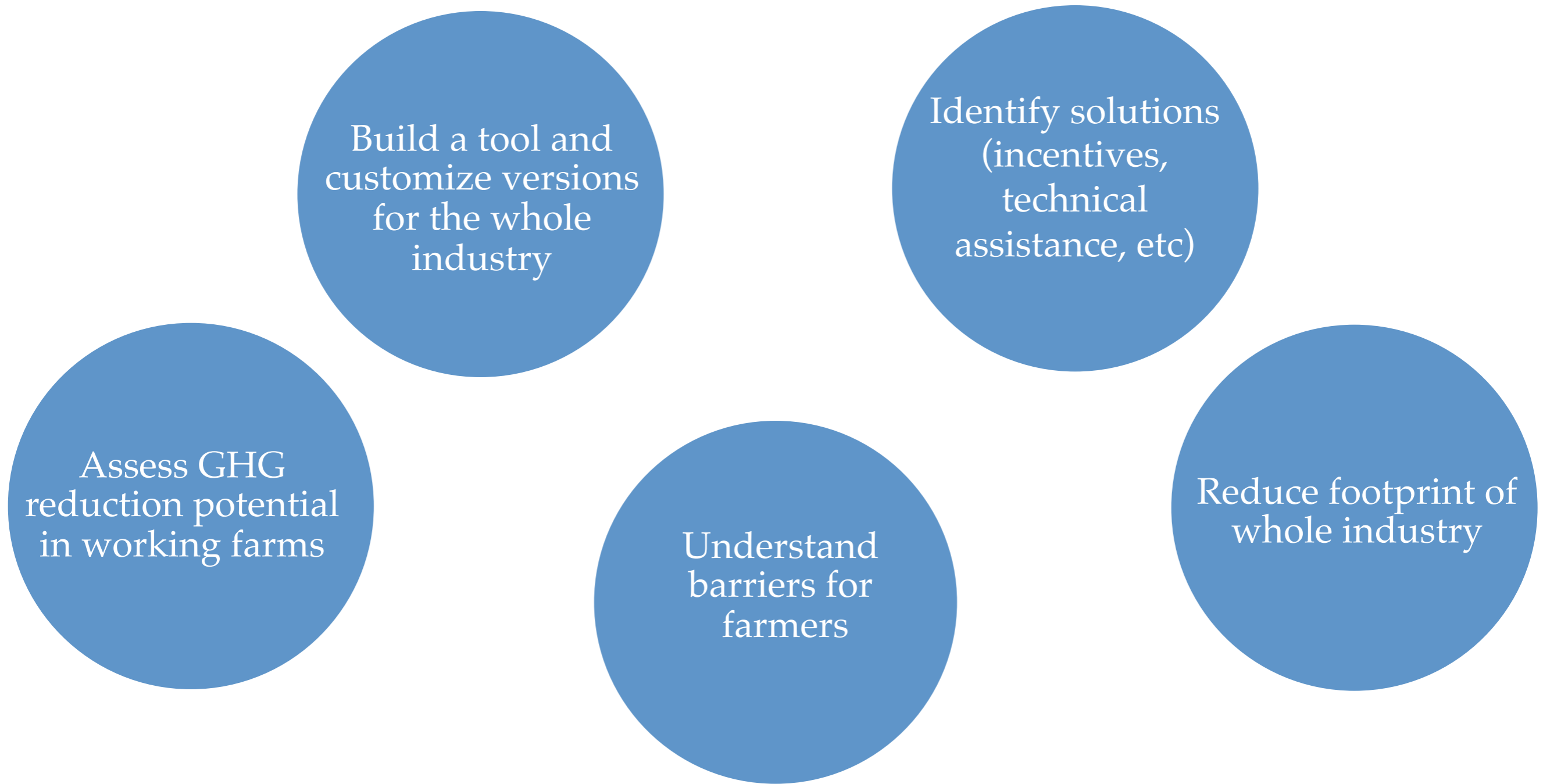
But there is an implementation gap.

We haven't had an efficient way to identify and quantify practical reduction measures at the field and farm level. (Christof Walter, Unilever)

Farmers, Suppliers & Buyers need tools to understand....

- What are the most effective measures at *my farm or in my supply chain* (location, climate, soil, operation)?
- What are the costs and practical implications?
- What are the incentives and barriers to adopting more effective practices?

Cool Farming Options Project



**Farm-level
Analysis**



Global Learning

18 Sponsoring Partners

Pulse Canada



PEPSICO



MARKS &
SPENCER

giz



Heineken



21 Assessments in 17 Countries



Large-scale production

Apples, Barley, Canola,
Dairy, Eggs, Lettuce,
Tomatoes, Potatoes,
Pulses, Sugar, Wheat

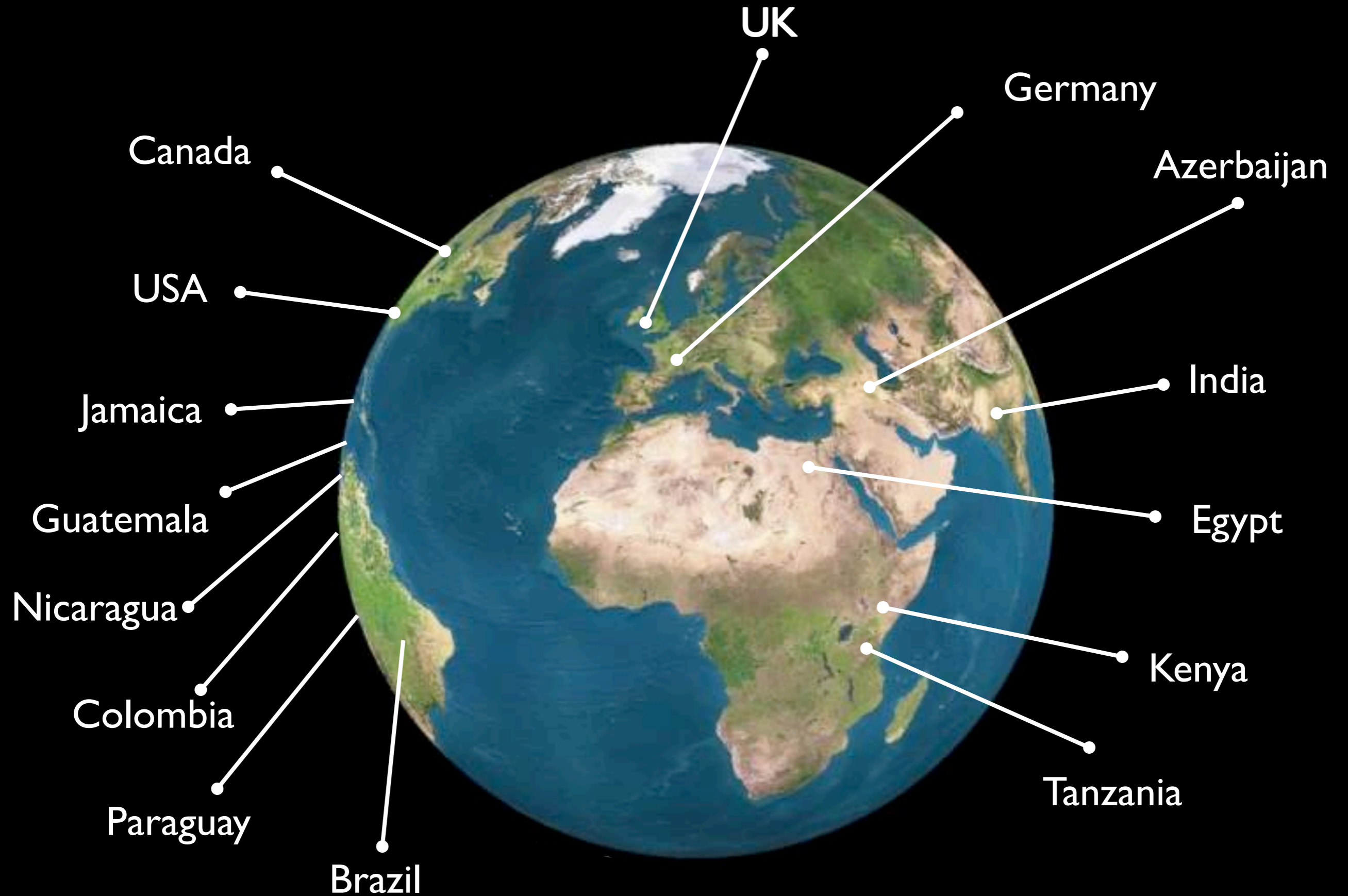


Small-scale production

Tea, Beans, Coffee, Cotton,
Mixed Vegetables



Project locations



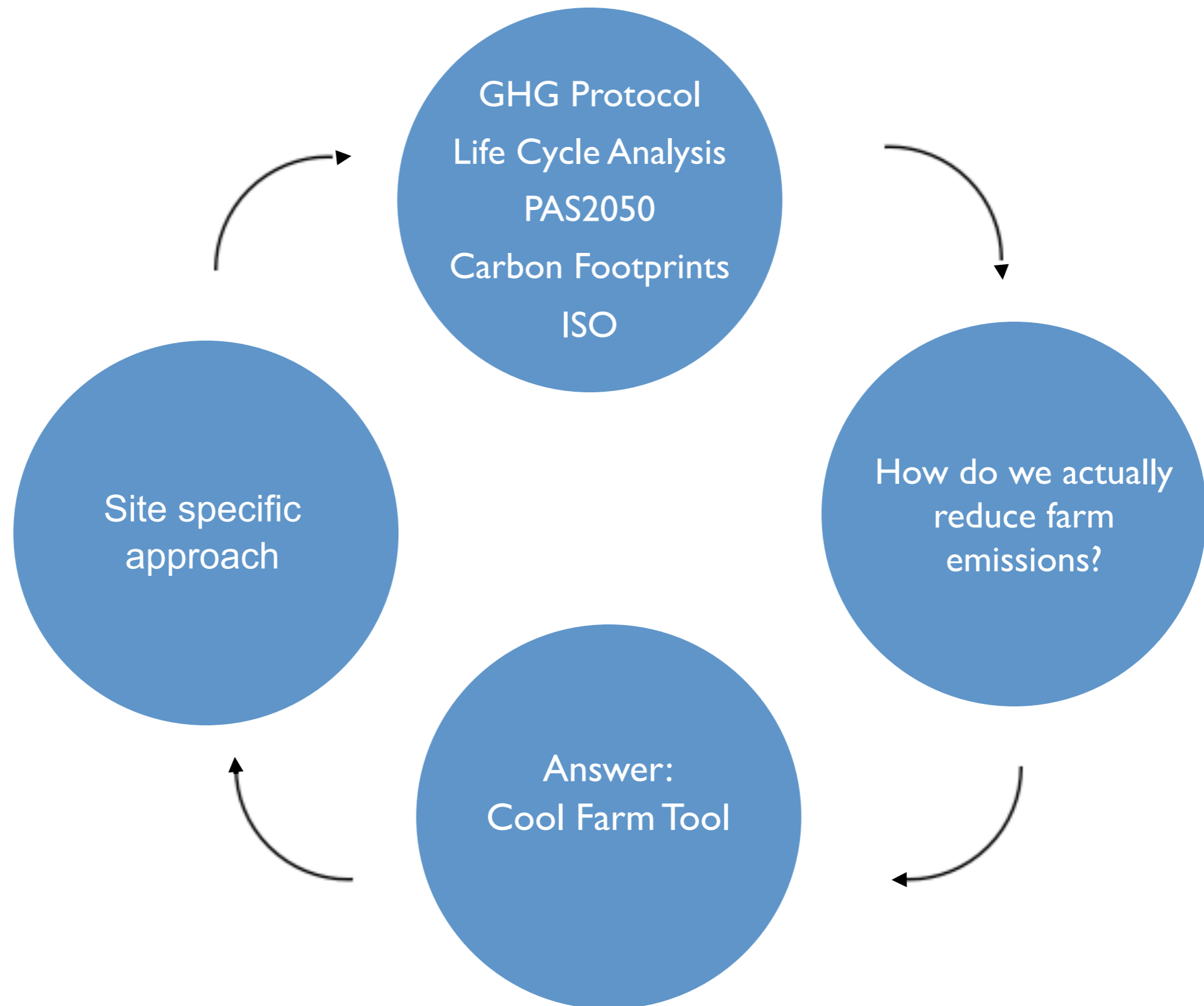
Cool Farm Tool:

Open source GHG calculator and decision support model

- Farmer focused ‘tier 2’ tool
- Scope:
 - Global, applicable for many crops, with regional defaults
 - Modules for farm, primary processing, and transport
- Management focused, decision support
- Exploration of mitigation options



Cool Farm Tool complements other approaches



The Cool Farm Tool calculates emissions for:

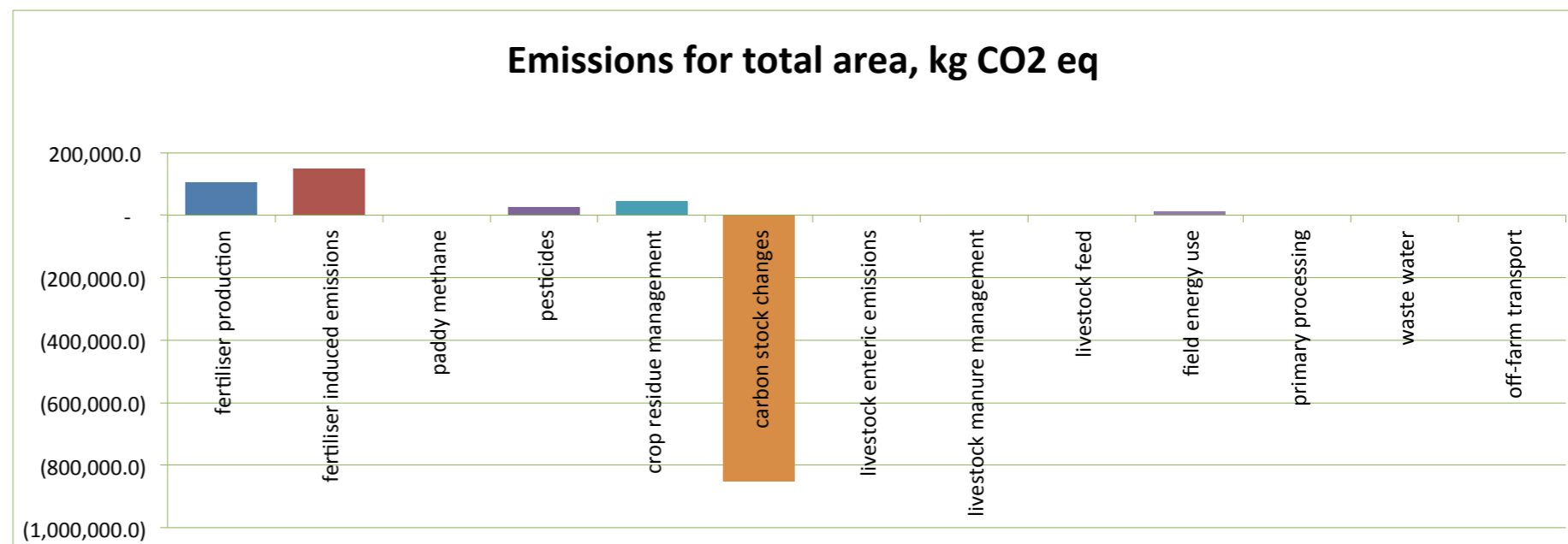
YOUR RESULTS SO FAR

Crop Management	by land area: (468.5)	kg CO2 eq. Per acre	
	by production: (406.3)	kg CO2 eq. Per tonne	

HOME	GENERAL	CROPS	SEQUESTRATION	LIVESTOCK	ENERGY USE	PROCESSING	TRANSPORT	RESULTS
on this page	1. Production	2. Soil	3. Fertiliser Use	4. Pesticide Applications	5. Crop Residue Management	6. Crop Management Results		

Crop type	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%; border: 1px dashed gray;">Crop type*</td> <td style="background-color: #ff8c00; color: white; padding: 2px;">Spring wheat</td> <td style="width: 30%; padding: 2px;">Rice only</td> <td style="width: 40%; padding: 2px;"> <table style="width: 100%; border-collapse: collapse;"> <tr><td style="background-color: #cccccc; padding: 2px;">Rice</td></tr> <tr><td style="background-color: #cccccc; padding: 2px;">Rice</td></tr> <tr><td style="background-color: #cccccc; padding: 2px;">Rice</td></tr> </table> </td> </tr> </table>	Crop type*	Spring wheat	Rice only	<table style="width: 100%; border-collapse: collapse;"> <tr><td style="background-color: #cccccc; padding: 2px;">Rice</td></tr> <tr><td style="background-color: #cccccc; padding: 2px;">Rice</td></tr> <tr><td style="background-color: #cccccc; padding: 2px;">Rice</td></tr> </table>	Rice	Rice	Rice																					
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Results presented in tables & graphs



Summary Table:

	Emissions for total area, kg			Per acre	Per tonne
	CO2	N2O	CH4		
fertiliser production	105,799.2	-	-	96.5	83.7
fertiliser induced emissions	30,637.4	398.4	-	135.5	117.5
paddy methane	-	-	-	-	-
pesticides	27,298.6	-	-	24.9	21.6
crop residue management	-	152.0	-	41.1	35.6
carbon stock changes	(851,630.2)	-	-	(777.0)	(673.8)
livestock enteric emissions	-	-	-	-	-
livestock manure management	-	-	-	-	-
livestock feed	-	-	-	-	-
field energy use	11,454.3	-	-	10.5	9.1
primary processing	-	-	-	-	-
waste water	-	-	-	-	-
off-farm transport	-	-	-	-	-
totals	(676,440.7)	550.4	-	(468.5)	(406.3)

Comparison of 2 Romaine Lettuce Supply Chains, USA

West Coast



Miles
Truck type

Cooler/Processor

Miles
Truck type

**Midwest
Distribution
Center**

Midwest

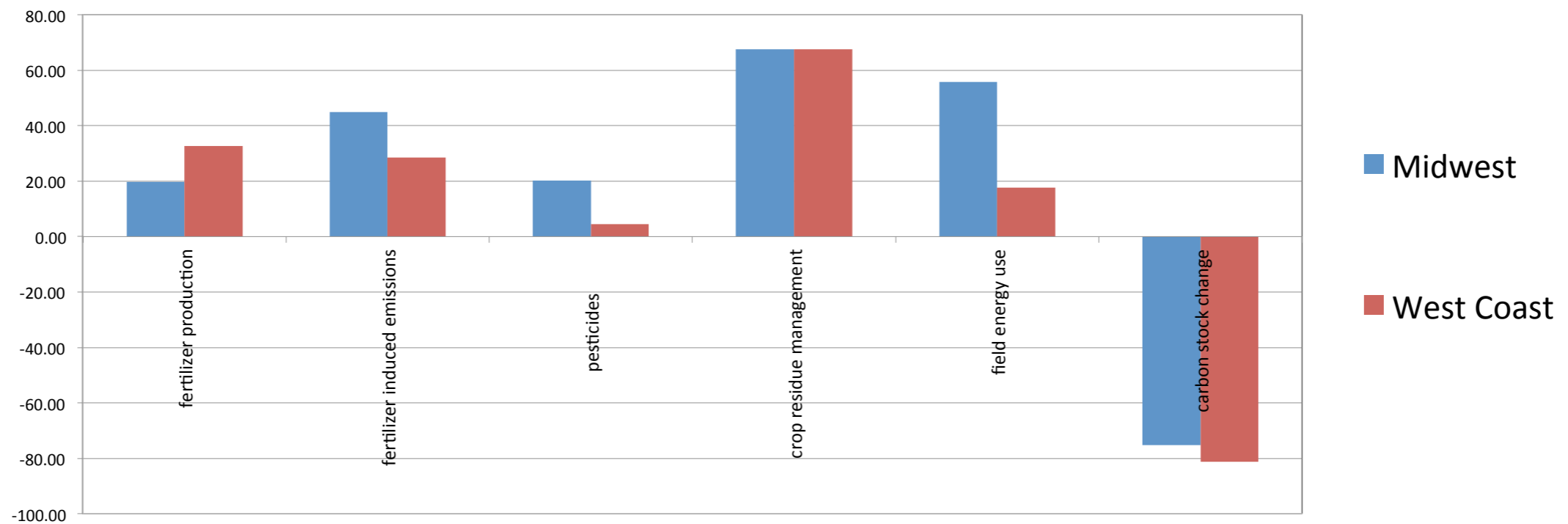


Miles
Truck type

Cooler/Processor

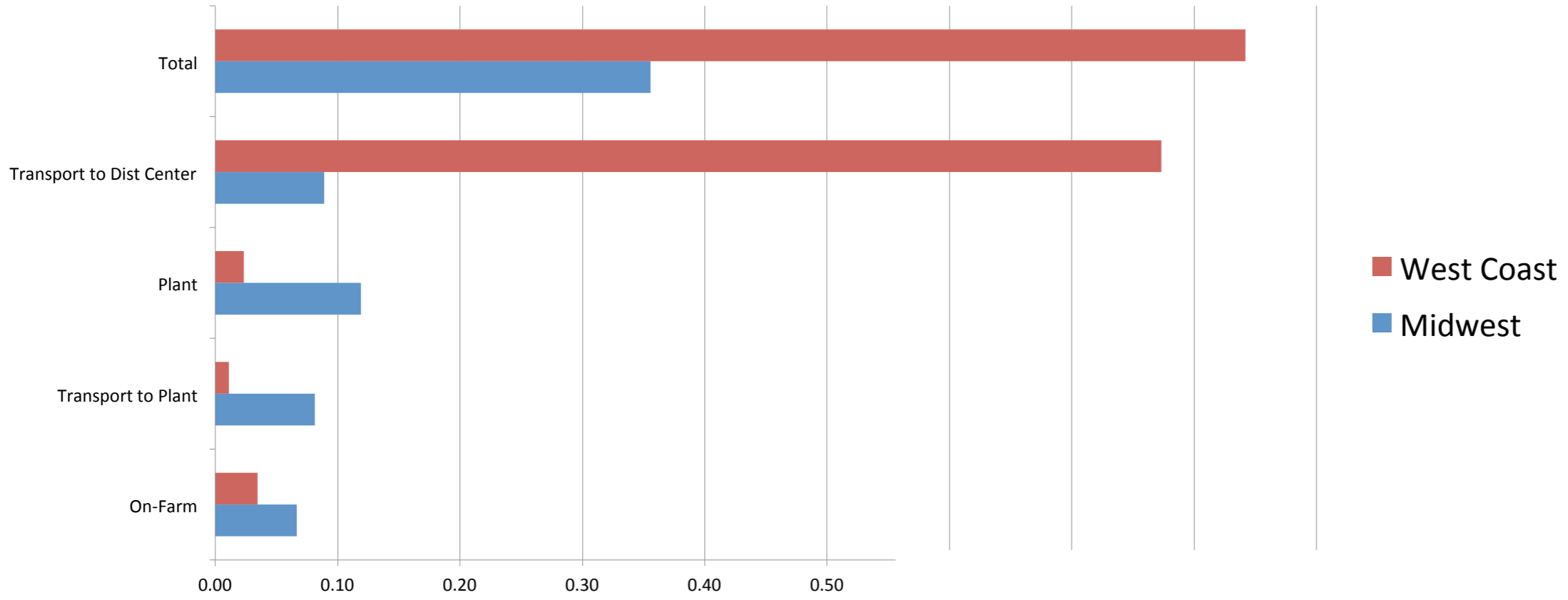
Miles
Truck type

Comparison of the sources of On-Farm GHG Emissions (lbs CO₂e per pound lettuce)

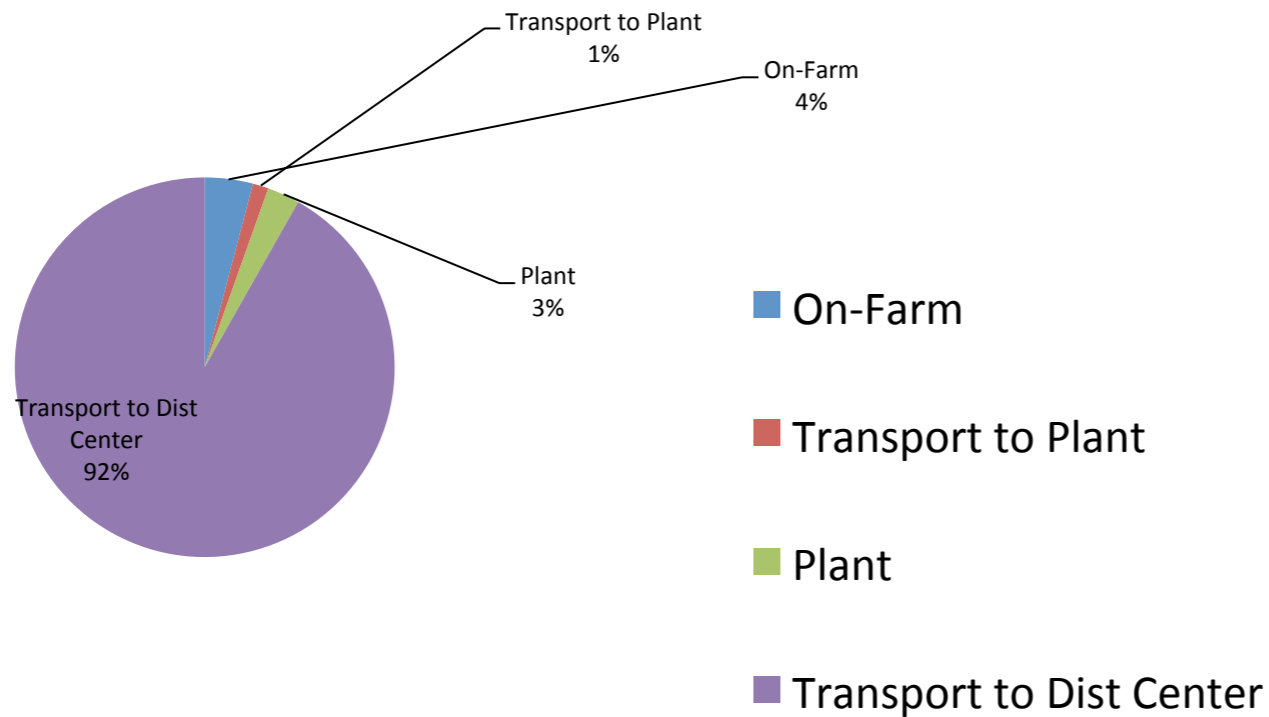


The emissions sources are easily identified along with the differences between the two farms

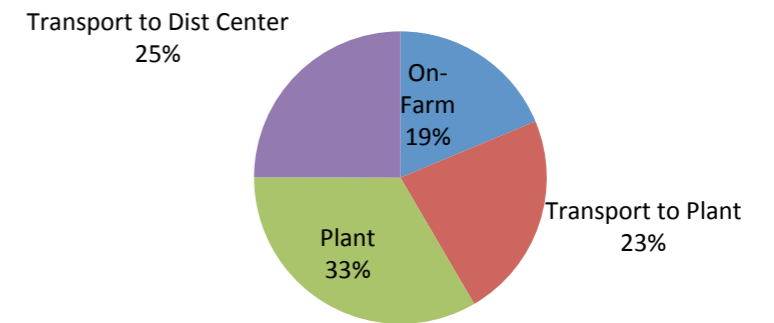
Whole Supply Chain Emissions (lbs Co2e per pound of product)



West Coast Supply Chain



Midwest Supply Chain



Is the Cool Farm Tool right for me?

- What is your goal in quantifying emissions?
- What are your buyers asking for?
- Do you have leverage with decision makers over farming practices?
- Who advises farmers on best practices?
- The Sustainable Food Lab provides training on tool use and crop modelling
- Excel version is open source and free of charge
- An online, multicrop version will be available in 2012-13



SUSTAINABLE FOOD LABORATORY

Please contact us for more information!
sustainablefood.org/projects/climate

Stephanie Daniels

stephanie@sustainablefood.org

Daniella Malin

daniella@sustainablefood.org

