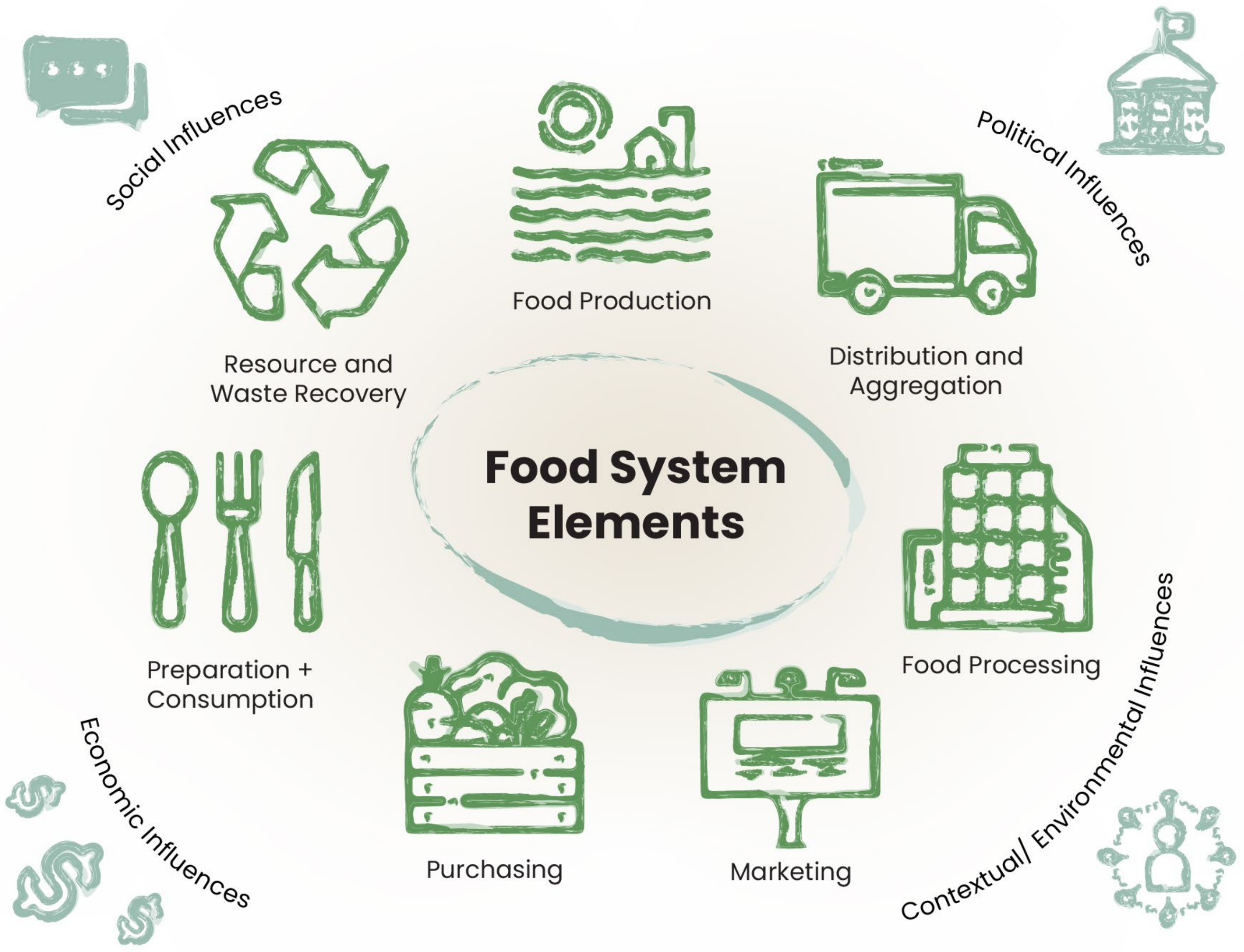
How Do We Scale Regional Food Production & Infrastructure to Achieve Regional Self-Reliance? An Exploration of Two Product Supply Chains

Jake Claro, David Conner, Justin Rich, Vern Grubinger, Joe Bossen, Mckenna Hayes, and Todd Hardie

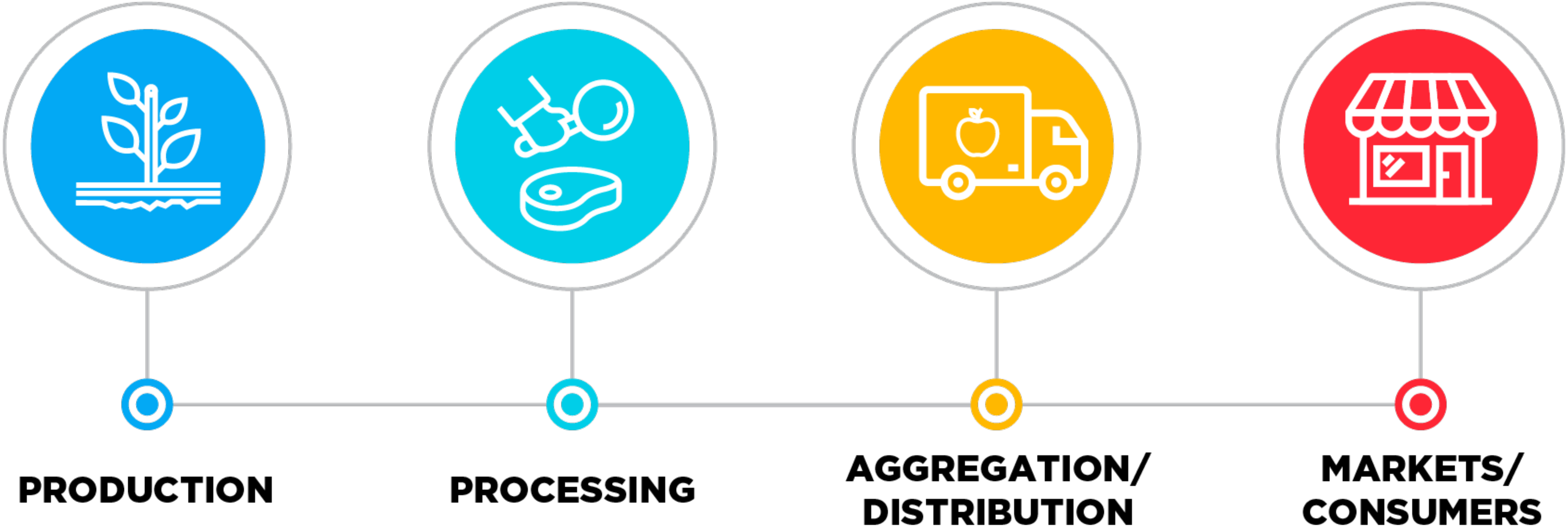
Shoutout to Andrew May...



Agenda

- Intro & Justification
- Analytical Lens and Method
- Produce
- Grain & Dry Beans
- Role of Distribution & Food Hubs
- Small Group Work
- Full Group Discussion

A supply chain is a coordinated network that includes all the businesses, infrastructure and facilities, and activities involved in the sourcing, developing, manufacturing, delivering, and purchasing of products.



For this session, supply chain development and value chain development are interchangeable:

"Value chains, and value chain development, are defined by collaborative business partnerships between producers and other supply chain actors (e.g., input suppliers, processors, distributors, and buyers) that showcase and emphasize product differentiation, quality attributes, and social and environmental values in order to increase equitable financial, social, and environmental returns to all supply chain actors and the communities in which they operate"- Good Food Network

Dietary Changes for “Resilient Eating” NEFNE 30x30 Goal:

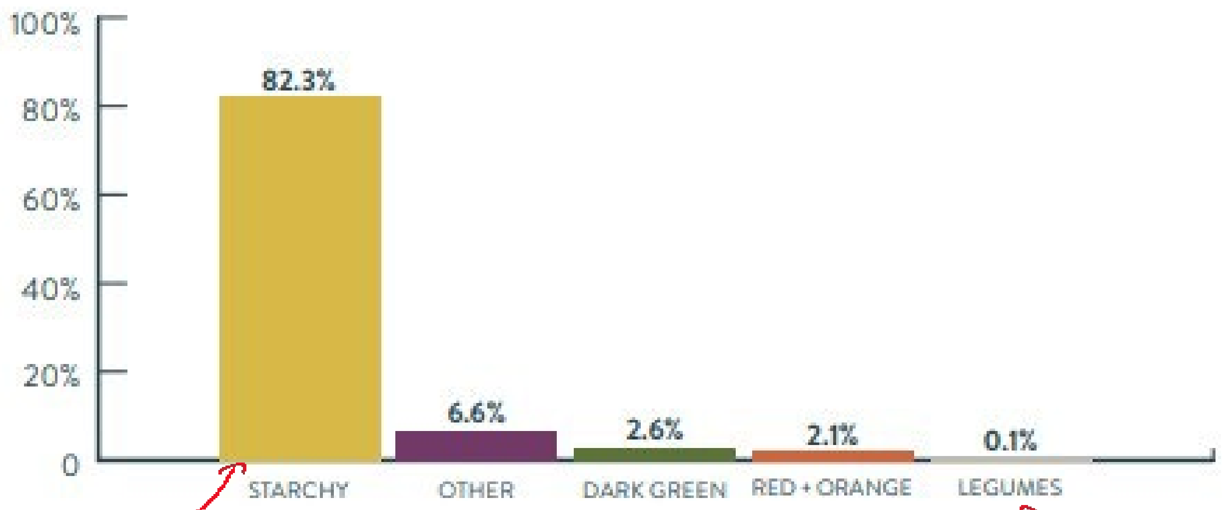
FIGURE 3: Estimates of Shifts in Servings Required to Move From “Unchanged Eating” to “Resilient Eating” in 2030

Current Regional Self-Reliance by Food Group:

TABLE 2: New England Production, Consumption, and Regional Self-Reliance (RSR) by Food Group (Pounds), 2010-2019

Food Group	Mean Production	Mean Consumption	Mean RSR
Dairy	4,149,600,000	9,302,000,000	44.6%
Vegetables	1,821,300,000	5,746,800,000	31.7%
Fruits	237,800,000	3,705,200,000	6.4%
Proteins	257,800,000	6,336,600,000	4.1%
Grains	64,700,000	3,585,400,000	1.8%
Fats and Oils	15,000,000	1,184,000,000	1.3%
Sweeteners	20,700,000	1,900,700,000	1.1%
TOTAL	**6,566,800,000**	**31,760,800,000**	**20.7%**

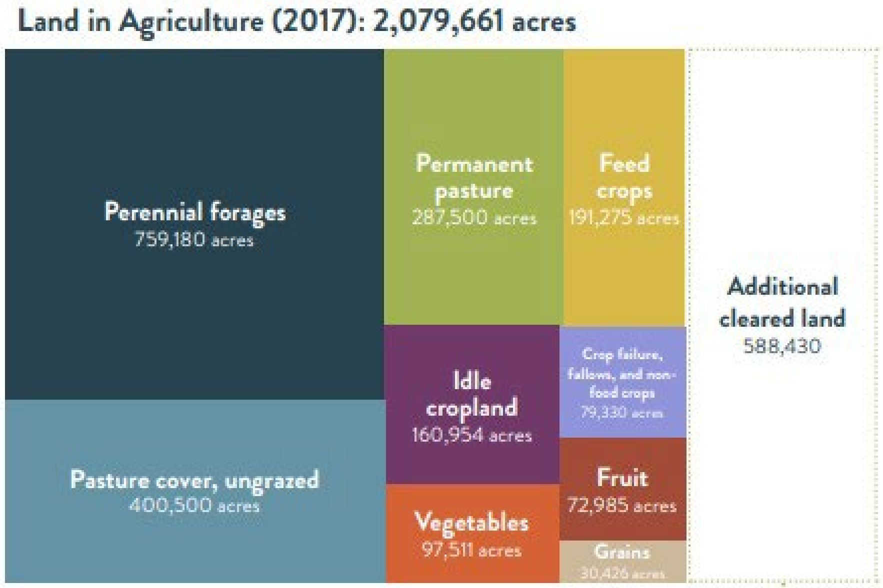
FIGURE 1: New England Regional Self-Reliance Percentage for Vegetable Subgroups

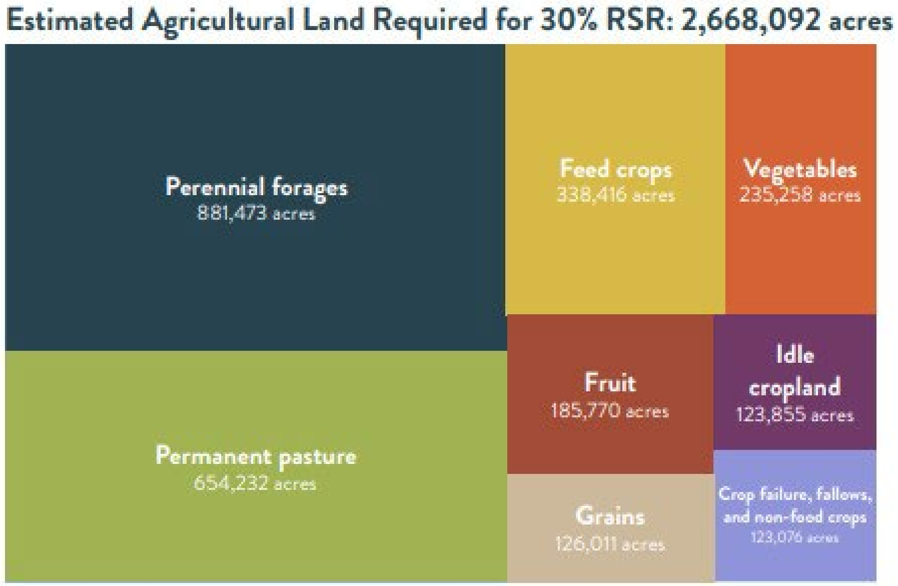


Basically potatoes from Maine

E.g., dry beans – lots of potential!

Crop Production Projections For NEFNE 30x30 Goal:





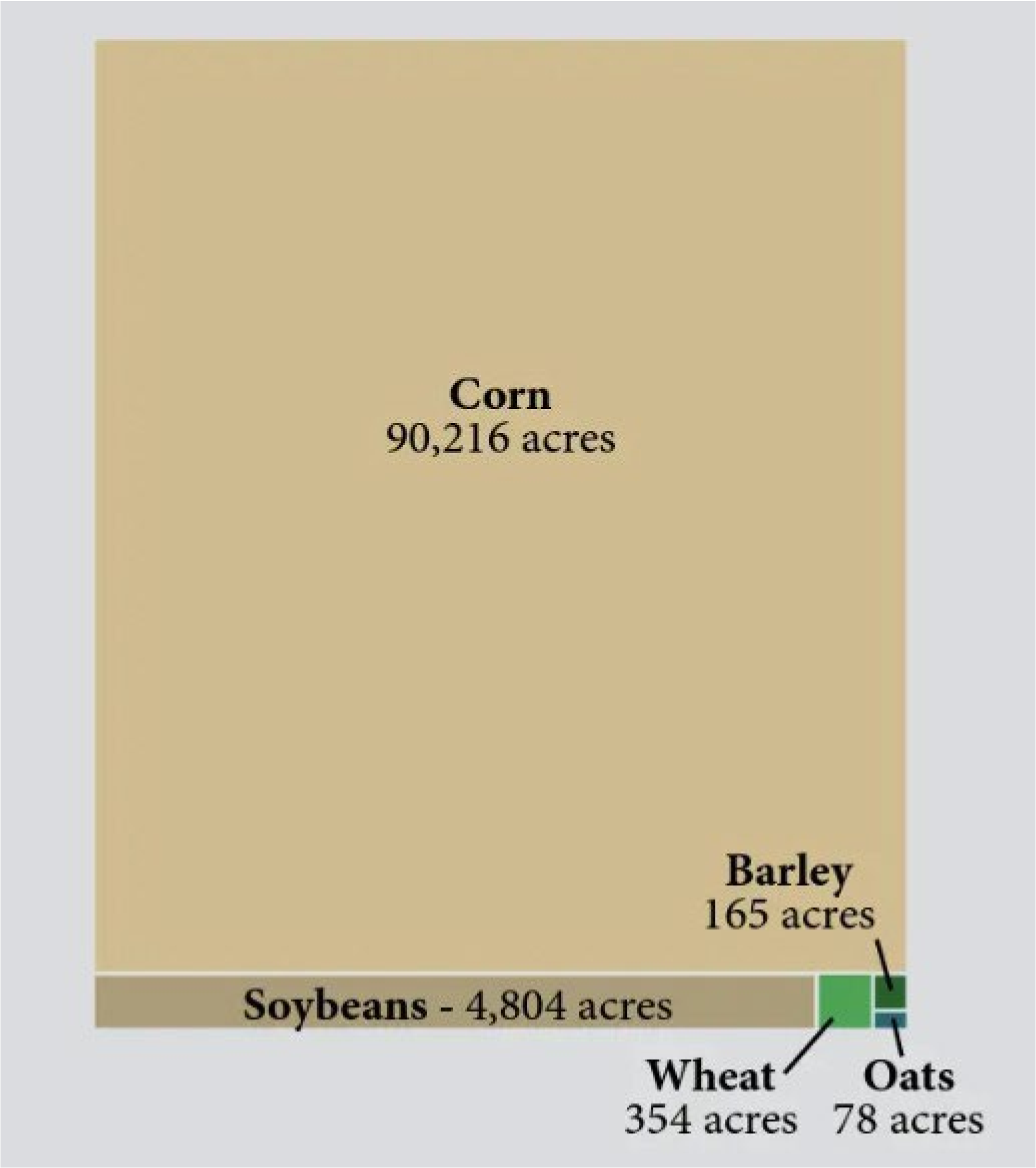
In New England, Regional Self-Reliance would require acreage increase of…

For Vegetables: 137,747 acres
For Fruits: 112,785 acres
For Grains: 95,585 acres

For Vermont, assuming % share of increase would be the same as % share of NE acreage in the above categories:

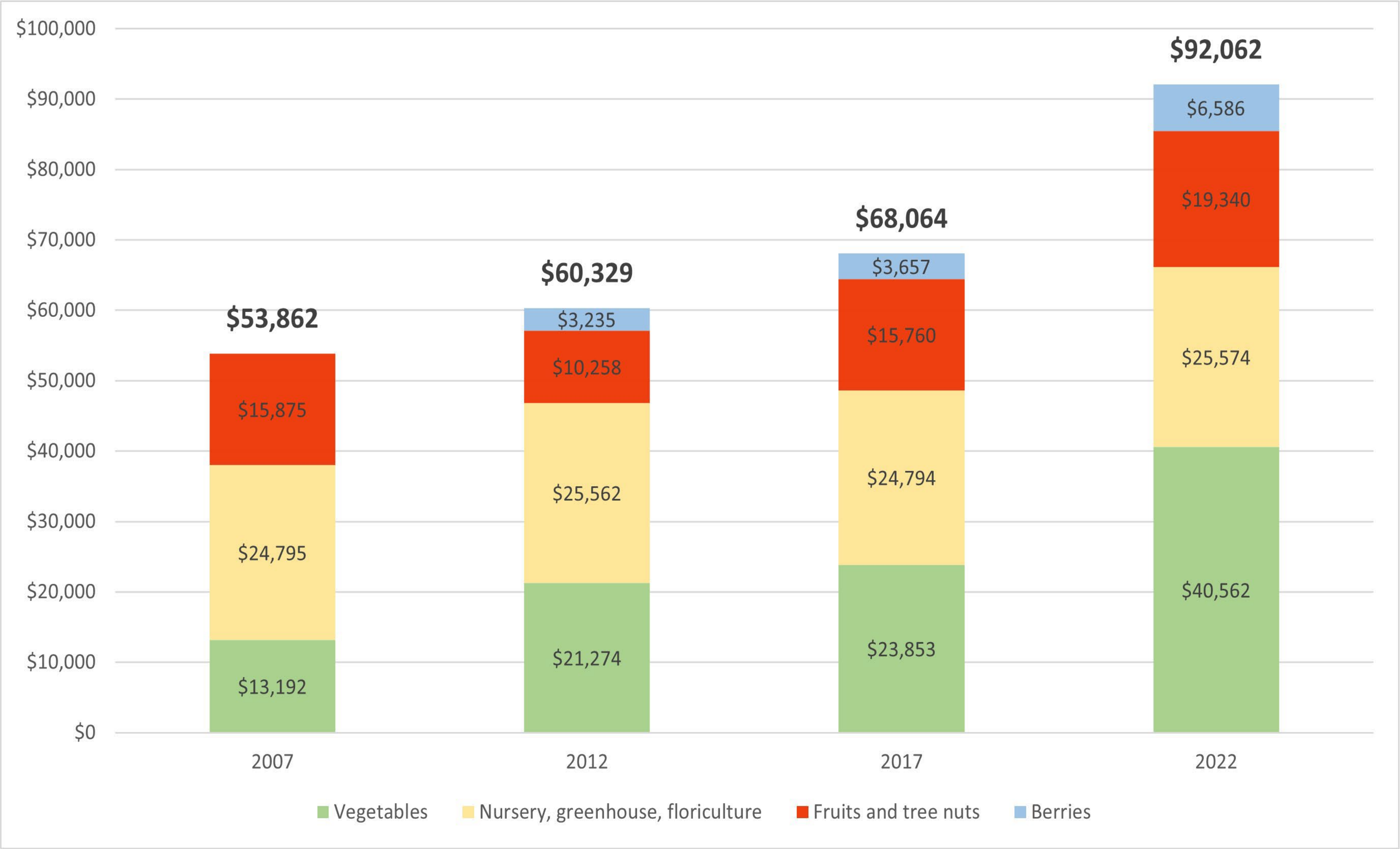
At 3.4% share for Vegetables: 4,683 acres increase
At 4.7% share for Fruits: 5,300 acres increase
At 5% share for Grains: 4,779 acres increase

Transitional Potential for Grains & Dry Beans



Vermont has a long history of growing food grade grains. Production of grains at scale currently exists, but is devoted to grains for livestock feed.

Growth and Maturation of Vermont's Produce Industry



Vegetable sales have **more than tripled** since 2007, **increasing** by $27 million!

Analytical Lens and Method

Make or Buy?

Value Chain Analysis

Make or Buy?

Why Do Firms Do What They Do?

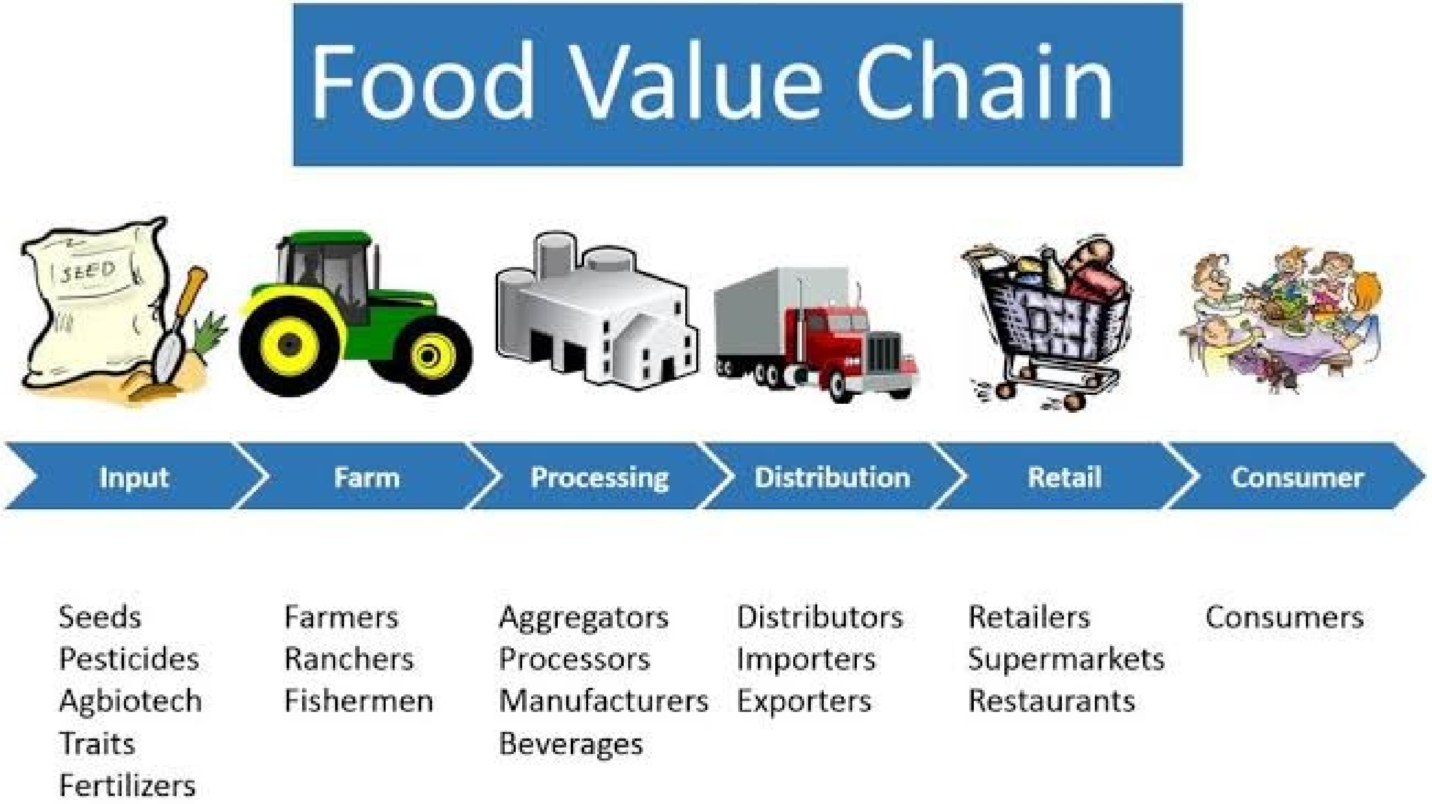
- They "make" inputs and services that
  - They can make best and/or most efficiently (core competency)
  - Are specialized/specific enough that it is hard to buy
  - There is no one else or they can't afford to buy
- They "buy" everything else (especially widely available commoditized items)
- High transaction costs = make
- **What a firm makes defines its boundaries**

Example 1: Milk

Example 2. Apples

Example 3: Marketing

Value Chain Analysis: Make or Buy?



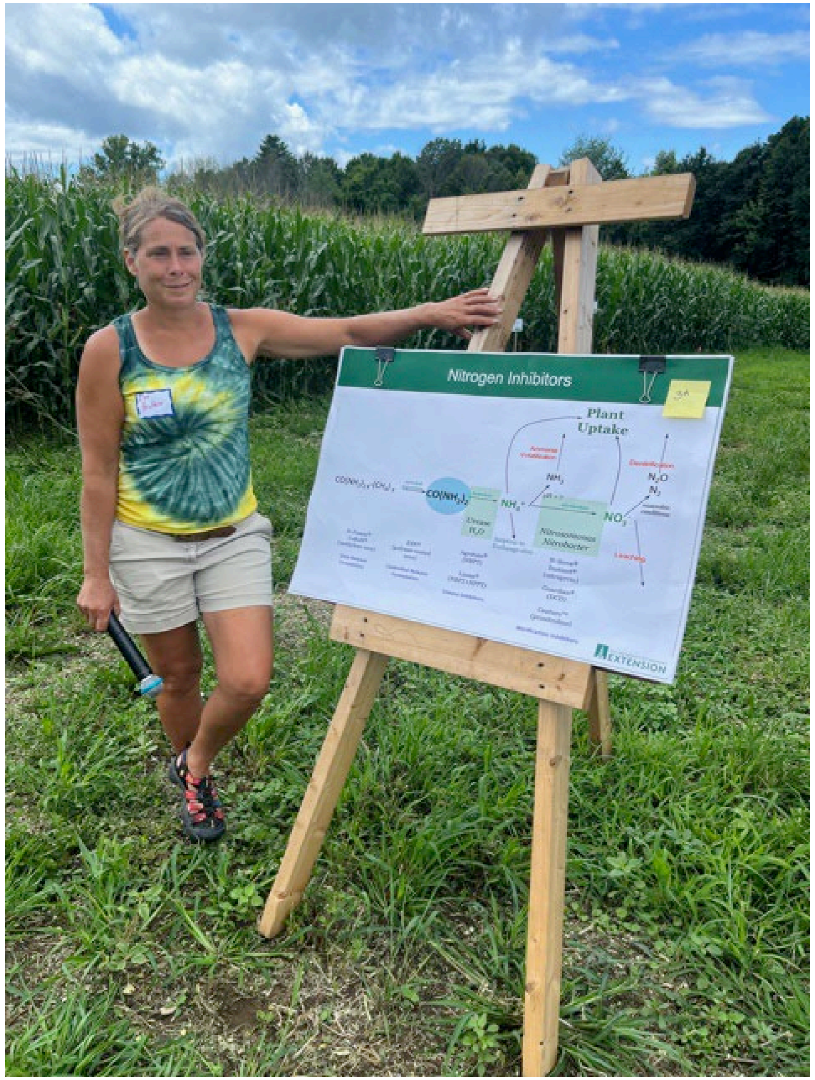
	Production	Processing	Storage & Aggregation	Distribution	Sales & Marketing	Buyers and Consumers
Who does it now and why?						
What is needed?						
Infrastructure and Equipment						
Financing/Funding						
Knowledge and Expertise						
Policy						
Networking or Research						

Todd Hardie

CHAMPLAIN VALLEY GRAIN CENTER


235


JOHN DEERE


Nitrogen Inhibitors
Plant Uptake
NH3
N2O
N2
NH4+
NO3
Urease
H2O
Nitrobacter
EXTENSION