



Creating Food Secure Resilient Communities

KS Local Food Summit Wichita KS 2024

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POWER RELATIONSHIPS

Questions arising from a consolidated food system

- Who has more power to make decisions in our food system?
 - Where is food produced? How? Who produces it? Who gets to eat it?
- Can we feed ourselves into the future with the way we've organized food production and consumption?

Food: Everybody needs it every day

The distribution of power in the food system, embodied in the power to make decisions about what food is produced, how, where and by whom, as well as who gets to eat – and what they get to eat, is our major focus of concern because of the negative impacts of those decisions to farmers, workers, communities and our ecology. We must address power relationships in the food system in order to ensure that humanity can be fed in the future.



What do we mean by a consolidated Food System?

Cargill at a glance



We are
160,000+
team members



Operating in
70
countries

Horizontal integration

- Becoming more consolidated across a particular sector. Ex: Kroger-Albertsons merger

Vertical integration

- Acquiring and integrating two or more sectors of the supply chain. Ex: Tyson owns hatcheries, supplies chicks to growers, processes broilers. Walmart owns a beef processing plant.

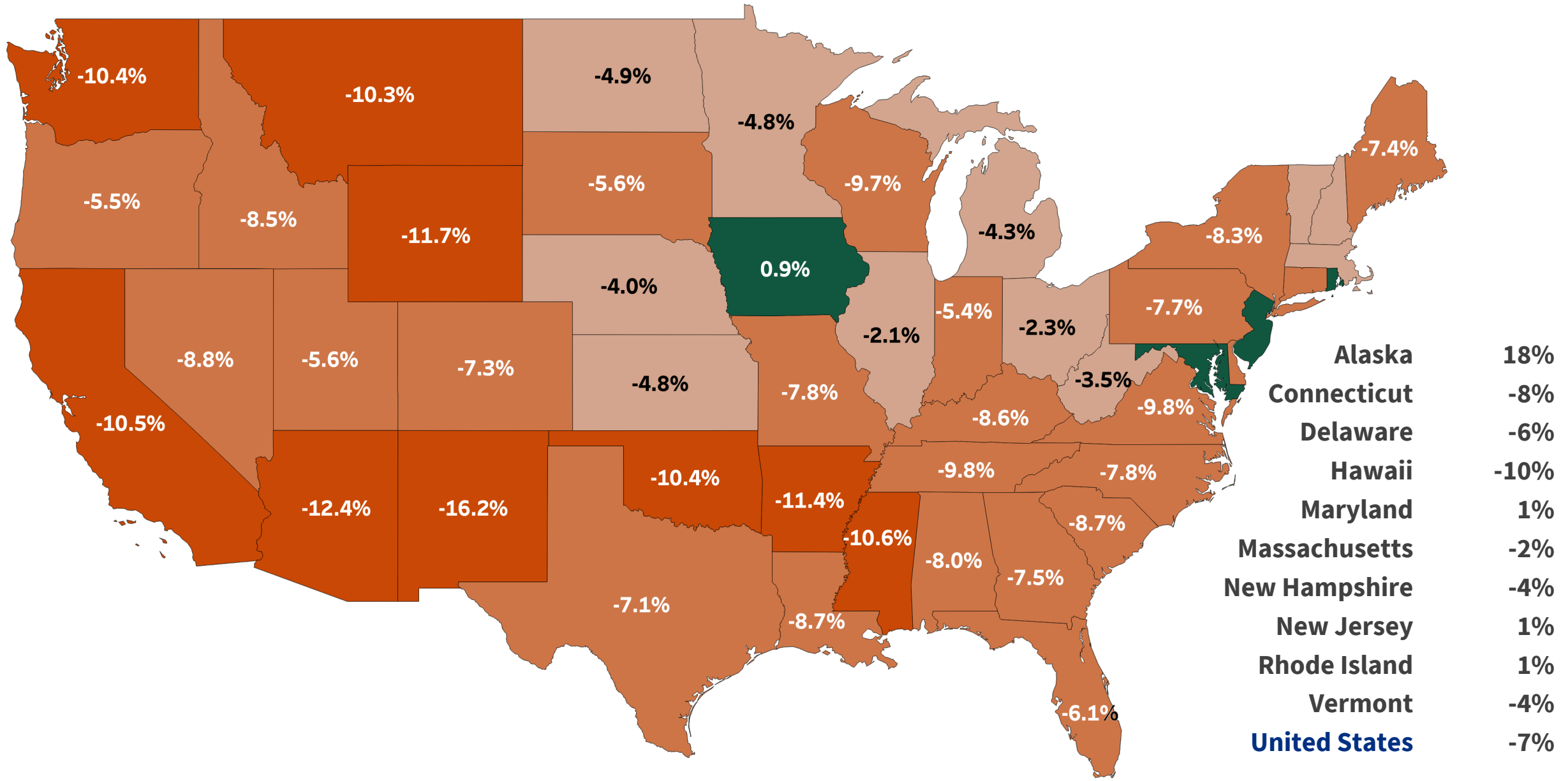
Integration across Sectors

- Cargill owns barges, terminal grain elevators, port facilities, processes beef & pork, provides animal feeds, data analytics

Global reach

- Operate across political borders – Cargill, Bunge and ADM own grain elevators and do soybean processing in N. America, Latin America and China

Percent Change in Farms

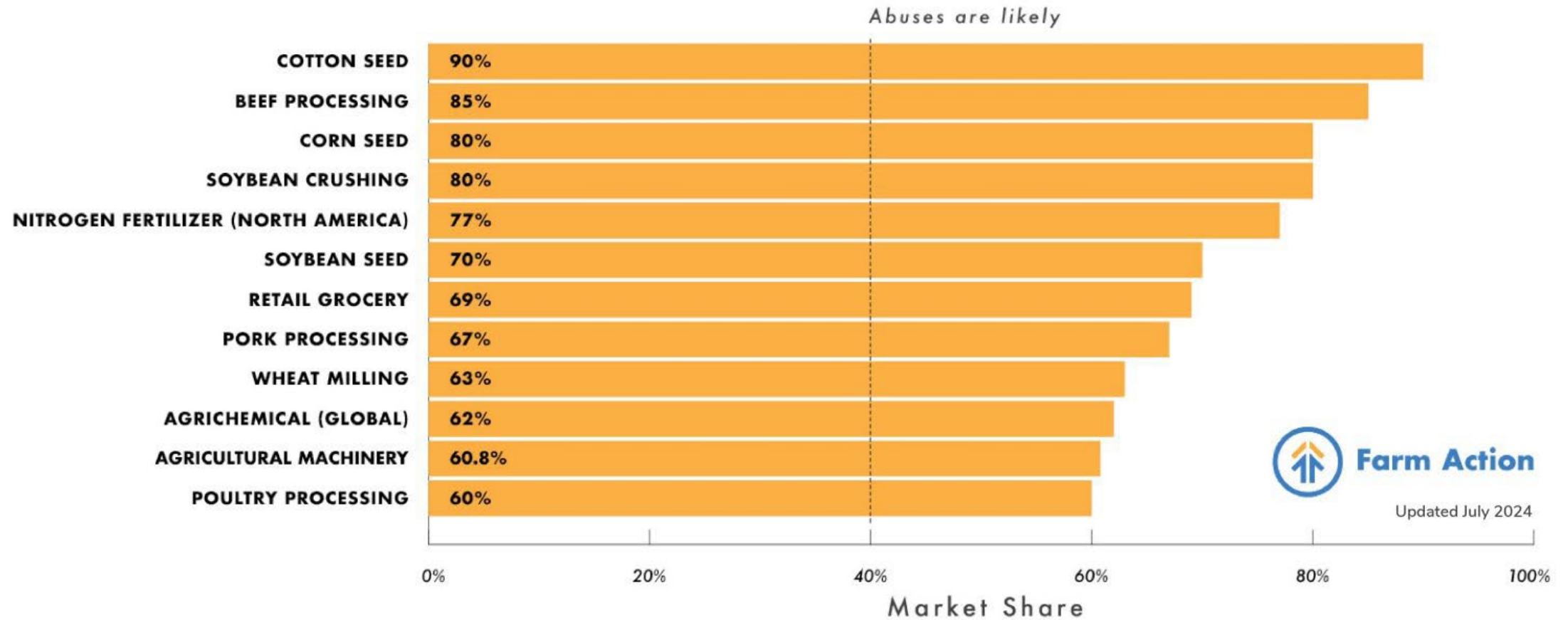




Farmers face consolidated markets for inputs (seeds, fertilizer, feed, genetics) and for what they sell (grains, vegetables, animals, eggs).

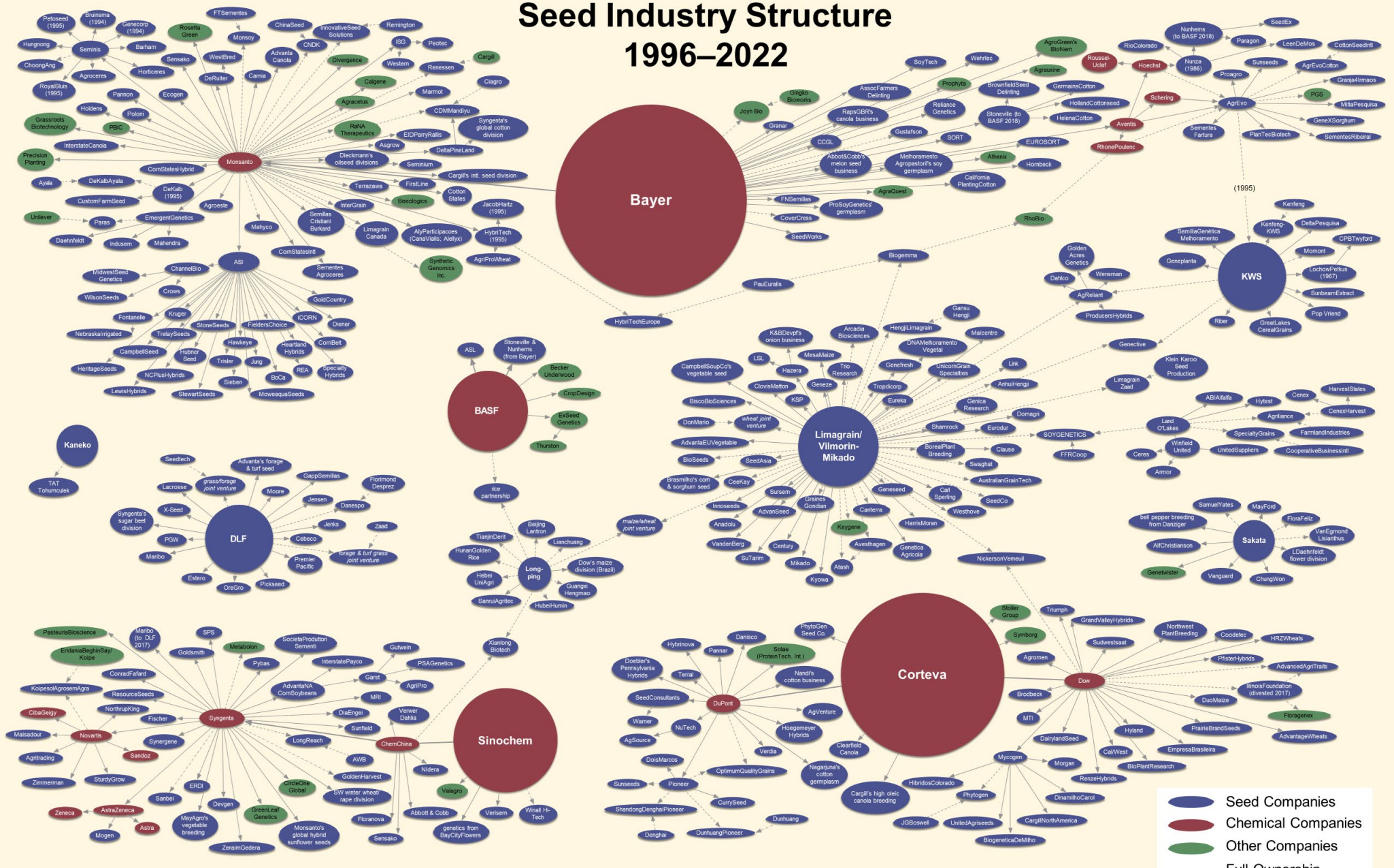
This constrains their choices about what they can produce, how they produce it and where they sell their products.

Percentage of U.S. Market Controlled by Top Four Corporations



Who makes decisions about food? Where , how and by whom is it produced? Who gets to eat it?

Seed Industry Structure 1996-2022



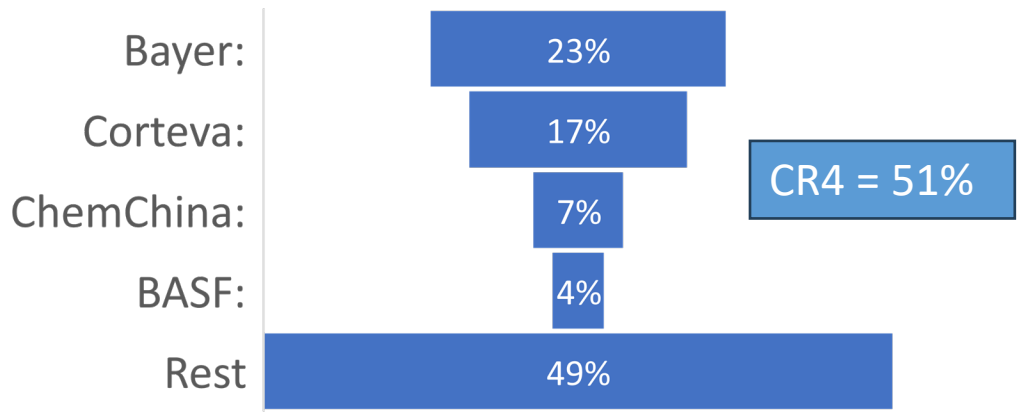
● Size proportional to global seed market share

- Seed Companies
- Chemical Companies
- Other Companies
- Full Ownership
- - - Partial Ownership

Phil Howard, Michigan State University & Amos Strömberg, Lund University
<https://philhoward.net>



Top Global Seed Companies share of Total Global Sales



CR4 of the global seed market was 21% in 1994
 Source: Farm Action July 2024

ChemChina clinched its \$43 billion deal to acquire Syngenta – China’s biggest-ever foreign corporate acquisition – in June 2017;

- **Dow and DuPont’s** \$130 billion merger closed in September 2017. DowDuPont’s agribusiness division became **Corteva Agriscience** in February 2018;

- **Bayer** absorbed **Monsanto** in a \$62.5 billion deal – the largest all-cash buy-out on record and the largest foreign acquisition ever by a German company – in June 2018.

ChemChina supersized its agro empire by merging with SinoChem in 2021 – combined \$135.2 Billion with 109.9 Billion in assets.

U.S. Soybean Seed CR4: 70%

- Corteva: 37.7%
- Bayer: 28.2%
- Syngenta: 9.2%
- AgReliant: 3%

U.S. Corn Seed CR4: 80%

- Corteva: 38.3%
- Bayer: 33.3%
- AgReliant: 6.8%
- Syngenta: 5%

Farmers have fewer choices of where to buy their seed and what seed they can buy.

Other Inputs

Global Agrichemical CR4: 62%

- ChemChina: 24.6%
- Bayer: 16%
- BASF: 11.3%
- Corteva: 10.4%



Nitrogen Fertilizer CR4 (North America): 77%

- North American nitrogen capacity:
 - CF Industries: 39% of total nitrogen capacity
 - 37% ammonia and 42% urea
 - Nutrien: 22% of total nitrogen capacity
 - 21% ammonia and 25% urea
 - Koch Industries: 11% total nitrogen capacity
 - 10% ammonia and 13% urea
 - Yara: 6% total nitrogen capacity
 - 6% ammonia and 7% urea

All Agricultural Machinery in U.S. CR4: 60.8%

- Deere & Co. – 37.07%
- CNH – 13.98%
- AGCO – 7.35%
- MTD Products – 2.4%

Concentration in Livestock Genetics (Globally)

Turkeys	Laying hens	Broilers	Swine
EW Group	EW Group	EW Group	Genus
Hendrix Genetics	Hendrix Genetics	Tyson	Hendrix Genetics
		Groupe Grimaud	Groupe Grimaud
			Smithfield
CR2 99%	CR2 94%	CR3 95%	Four firms control 2/3 of research & development

Source: Adapted from Howard (2016) based on data from ETC Group (2013).

Beef CR4: 80-85%

Tyson Foods:
JBS USA:
Cargill:
National Beef:

Pork CR4: 70%

WH Group
JBS USA:
Tyson:
Hormel:

Broilers CR4: 60%+

Tyson Foods
Pilgrim's Pride
Wayne-Sanderson Farms
Perdue Farms:

At the local level, half of poultry growers report having only one or two integrators to work with in their locality, and almost none having more than four. 95% of broiler poultry production occurs under contracts for integrators.

When farmers go to sell their products, here are their choices

Domestic Milk Processors CR4: 39-41%

- DFA: 15%
- Land O'Lakes: 10-12%
- Saputo Inc.: 7%
- Nestle: 7%

Fluid Milk Sales CR3: 83%

- DFA: 39.1%
- Land O'Lakes: 35.2%
- California Dairies: 8.8%



Photo credit: [STS Schweizer Tierschutz](#) 2016

Traders/Processors of Grains

Cargill

COFCO
(China National
Cereals, Oils and
Feedstuffs
Corporation)

ADM

Bunge

Louis
Dreyfus

Grain trading has long been dominated by just a few firms – ADM, Bunge, Cargill and Louis Dreyfus – but in recent years, the Chinese firm, COFCO, has joined their ranks. COFCO is China's largest state owned agrifood company (Belesky and Lawrence 2019), and has become the second largest global grain trader in just a few years, bypassing Dreyfus, Bunge and ADM.

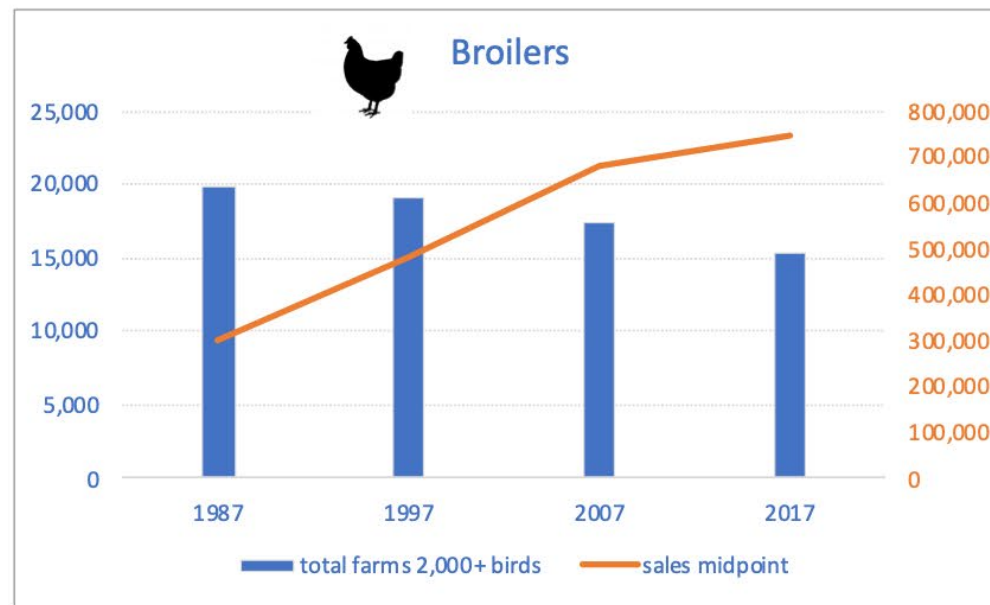
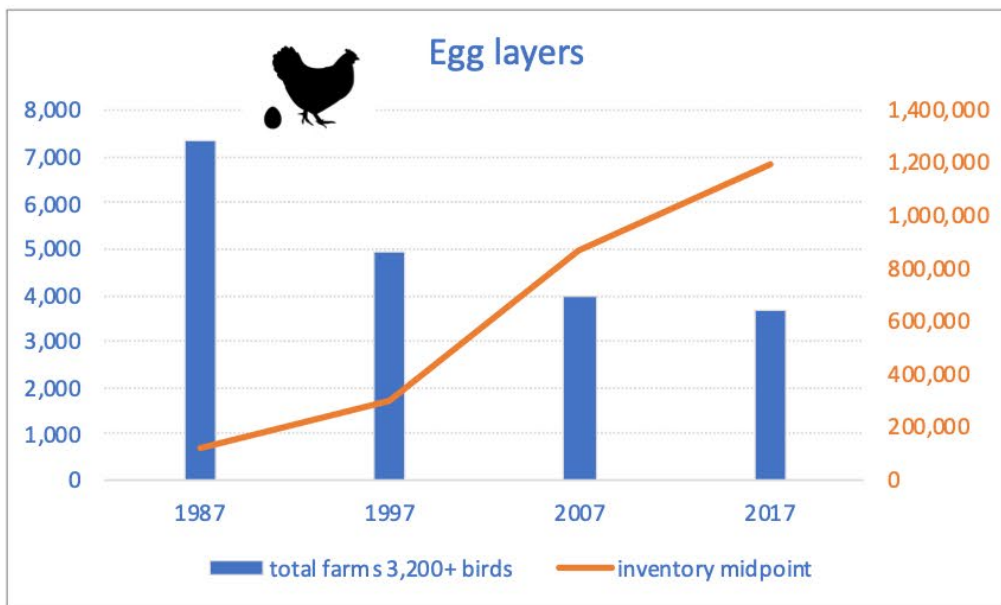
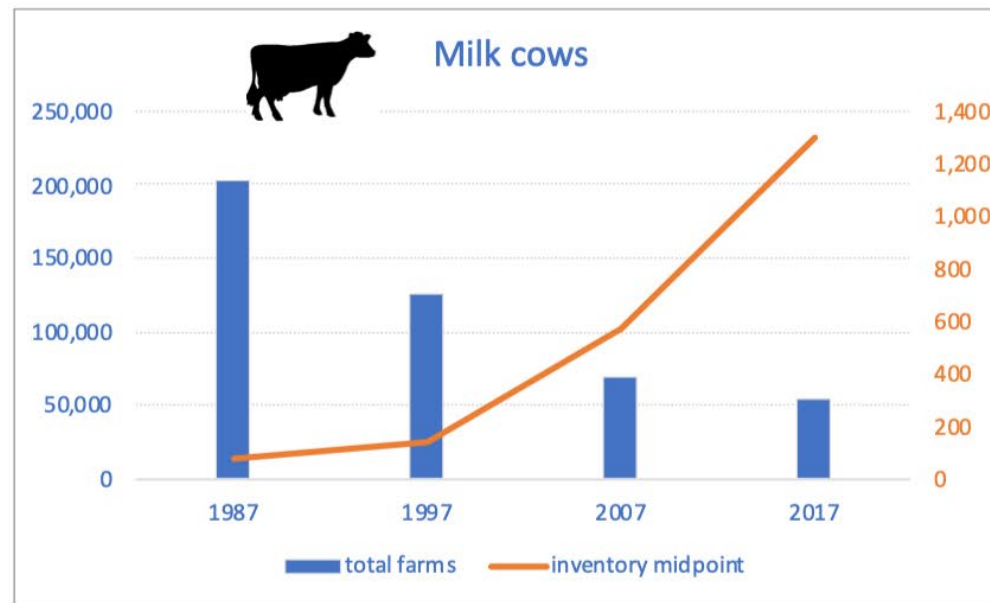
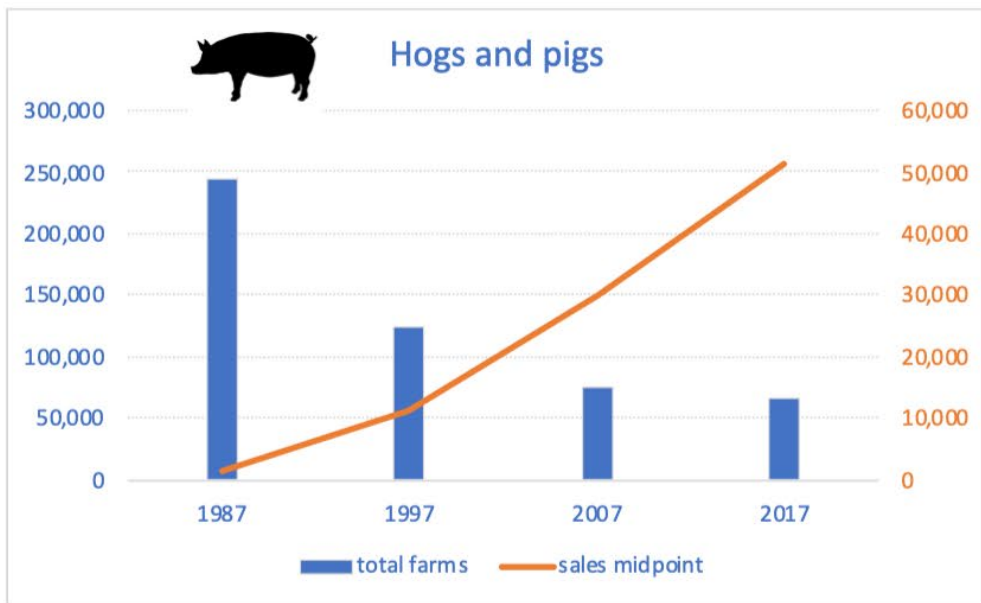
Consolidation in U.S. Livestock and Crop Sectors, 1987 to 2017

Farm Level Impacts

Report released in 2020 by Farm Action, written by M. Hendrickson, P. Howard, E. Miller and D. Constance

<https://farmaction.us/concentrationreport/>

Half of all animals are on farms with at least as many animals as the midpoint, and half are from farms no larger than the midpoint.



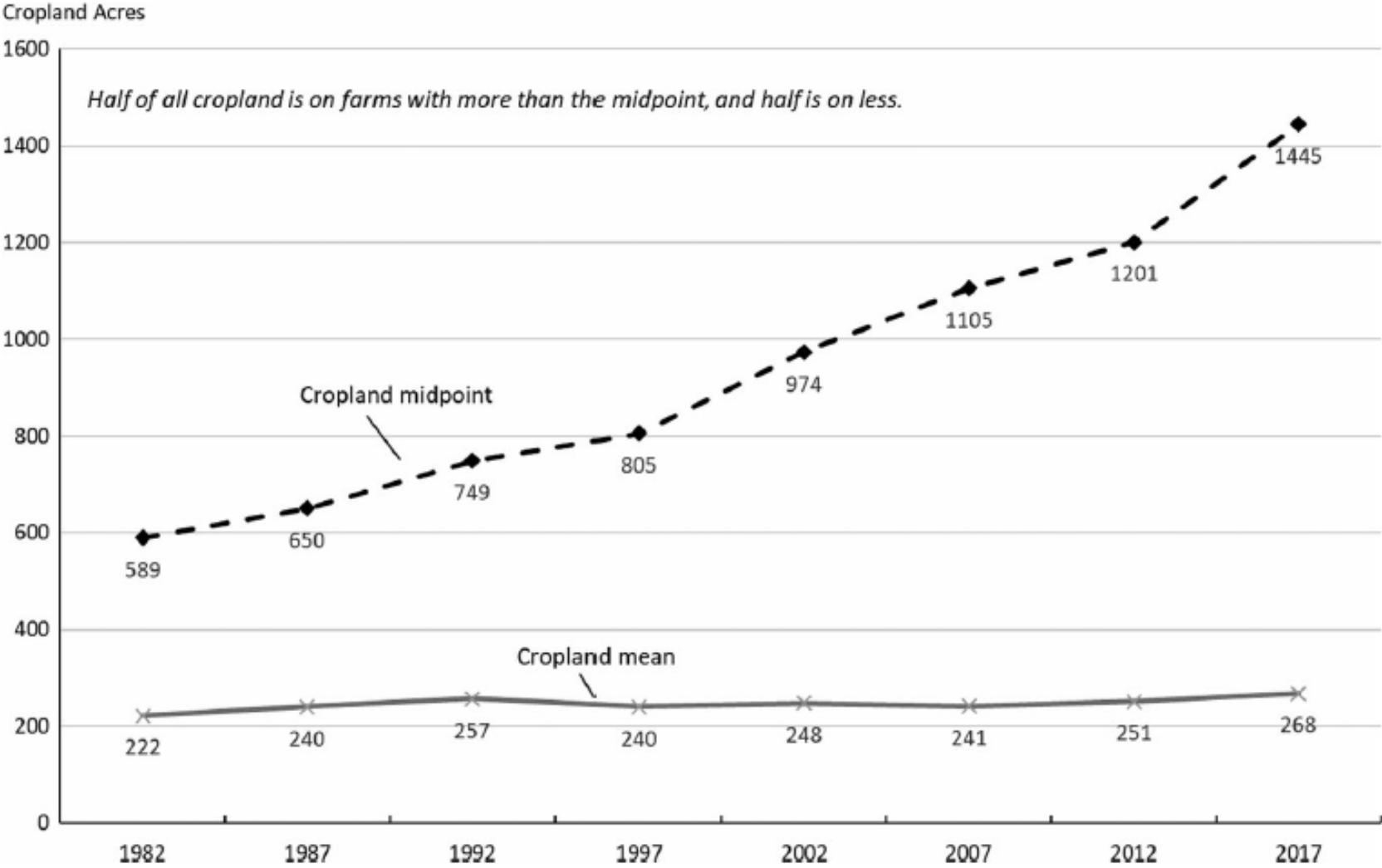


Structural Change in U.S. Livestock Production

Item	1987	2012	2017
Midpoint farm sizes			
Broilers (annual sales/removals)	300,000	680,000	744,000
Cattle feeding (annual sales/removals)	17,532	38,369	42,300
Hogs (annual sales/removals)	1,200	40,000	51,300
Milk cows (herd size)	80	900	1,300
Number of farms with			
Contract broiler production	22,000	15,830	14,598
Hogs	243,398	63,246	66,439
Milk cows	202,068	64,098	64,098
Source: MacDonald (2020). Author based his calculations on confidential farm-level records from USDA National Agricultural Statistics Service, Census of Agriculture; and USDA Census of Agriculture			

Between 1987 and 2012 "the number of farms with milk cows or hogs fell by about 70%, while those with fed cattle or contracts for broiler production fell by 30%." MacDonald 2016.

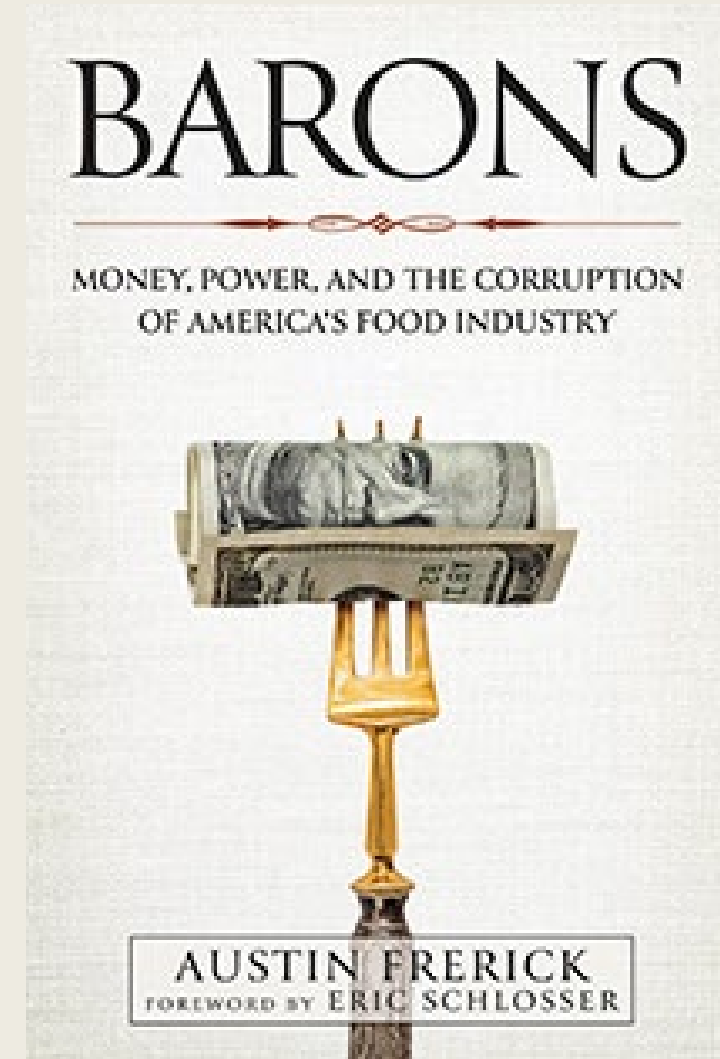
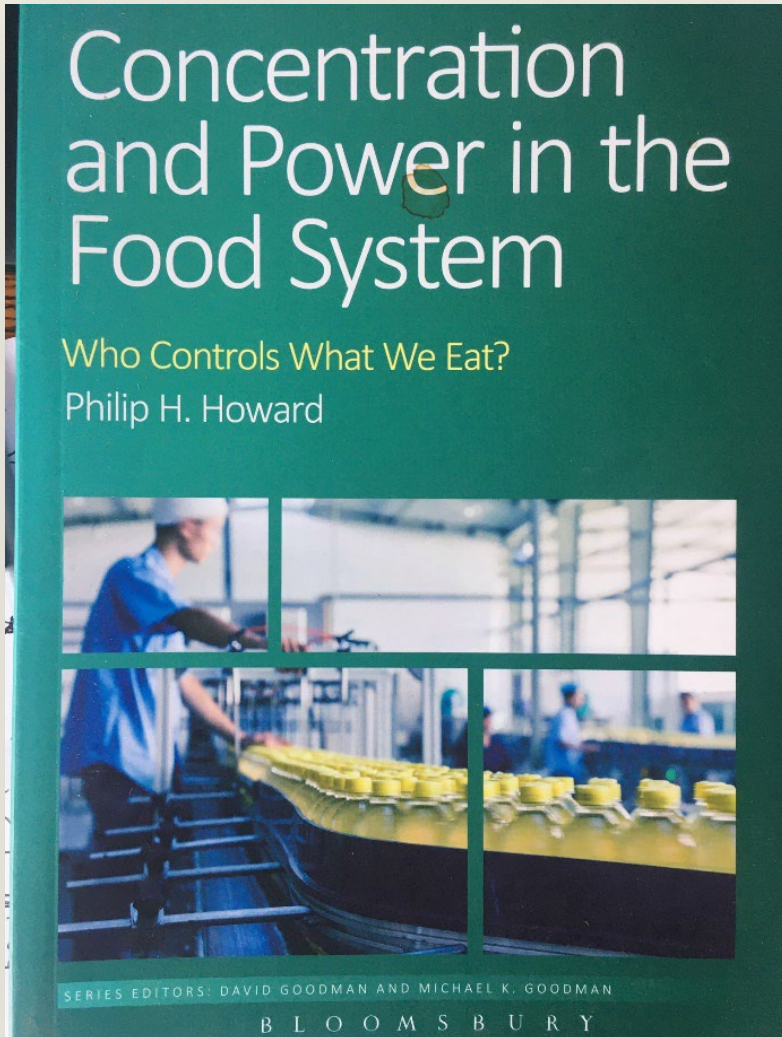
Figure 2 Two measures of average crop farm size

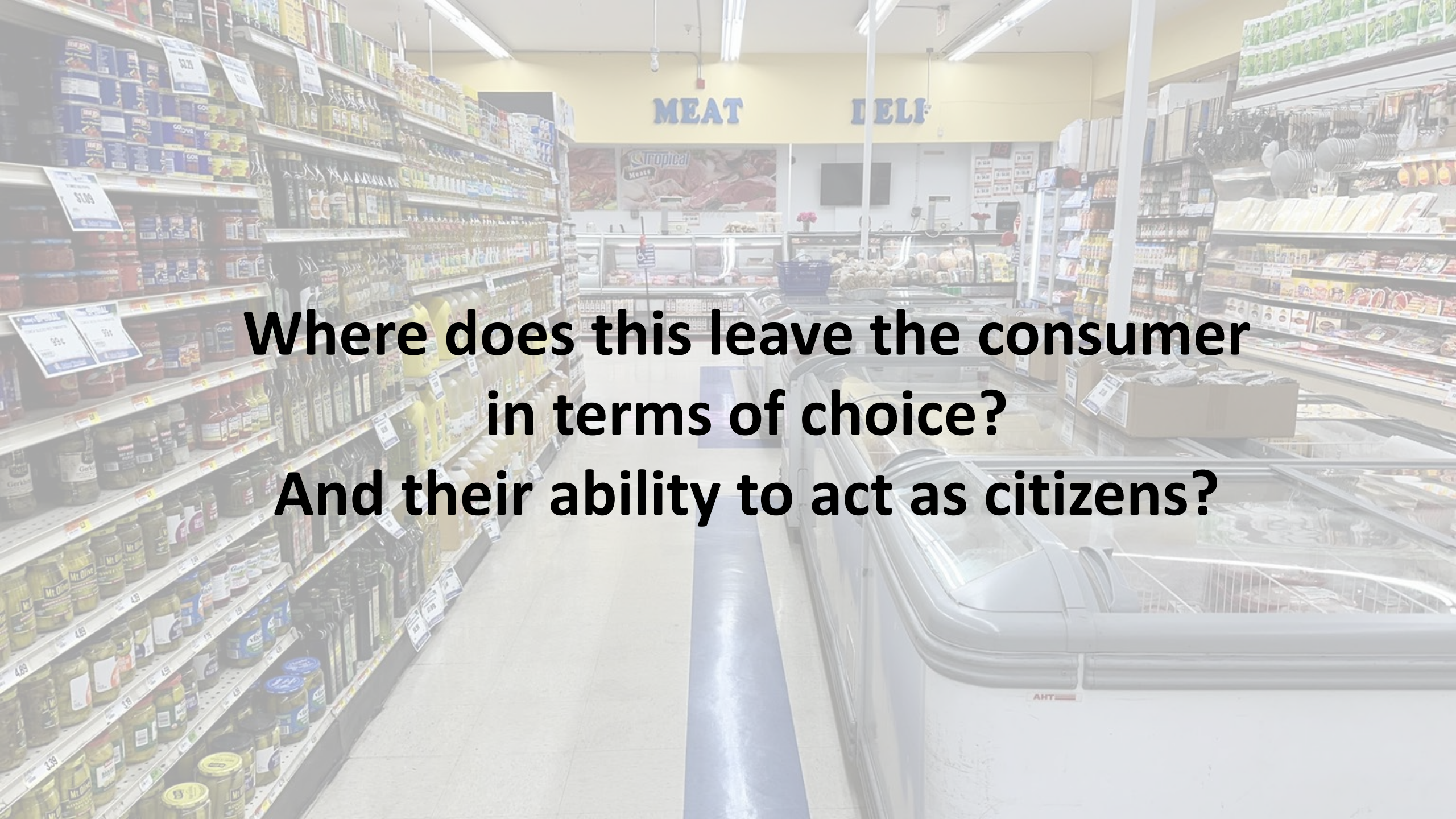


In crop farming, the share of acres in farms larger than 2,000 acres has more than doubled in 40 years, from 15% to 37%, while the midpoint for crop farms stood at 1,445 acres in 2017, up from 650 acres in 1987 (MacDonald 2020). He further notes that “Almost all of that expansion came at the expense of farms with 100–999 acres, whose share fell from 57% of cropland acres to 34% over thirty years. The net effect was that 85–90 million acres of cropland shifted out of the midsize class and into the largest acreage class over 1987–2017.”

Philhoward.net

<http://www.ipes-food.org/concentration>





**Where does this leave the consumer
in terms of choice?
And their ability to act as citizens?**

Broadline Distribution CR10: 60-70%

- The top five firms control over 50%
- Sysco alone controls over 30%
- Only the three largest broadliners — Sysco, U.S. Foods, and PFG — have the distribution network and resources to serve customers nationwide.

Choice at the consumer level?

Processed Food and Drinks CR4s:

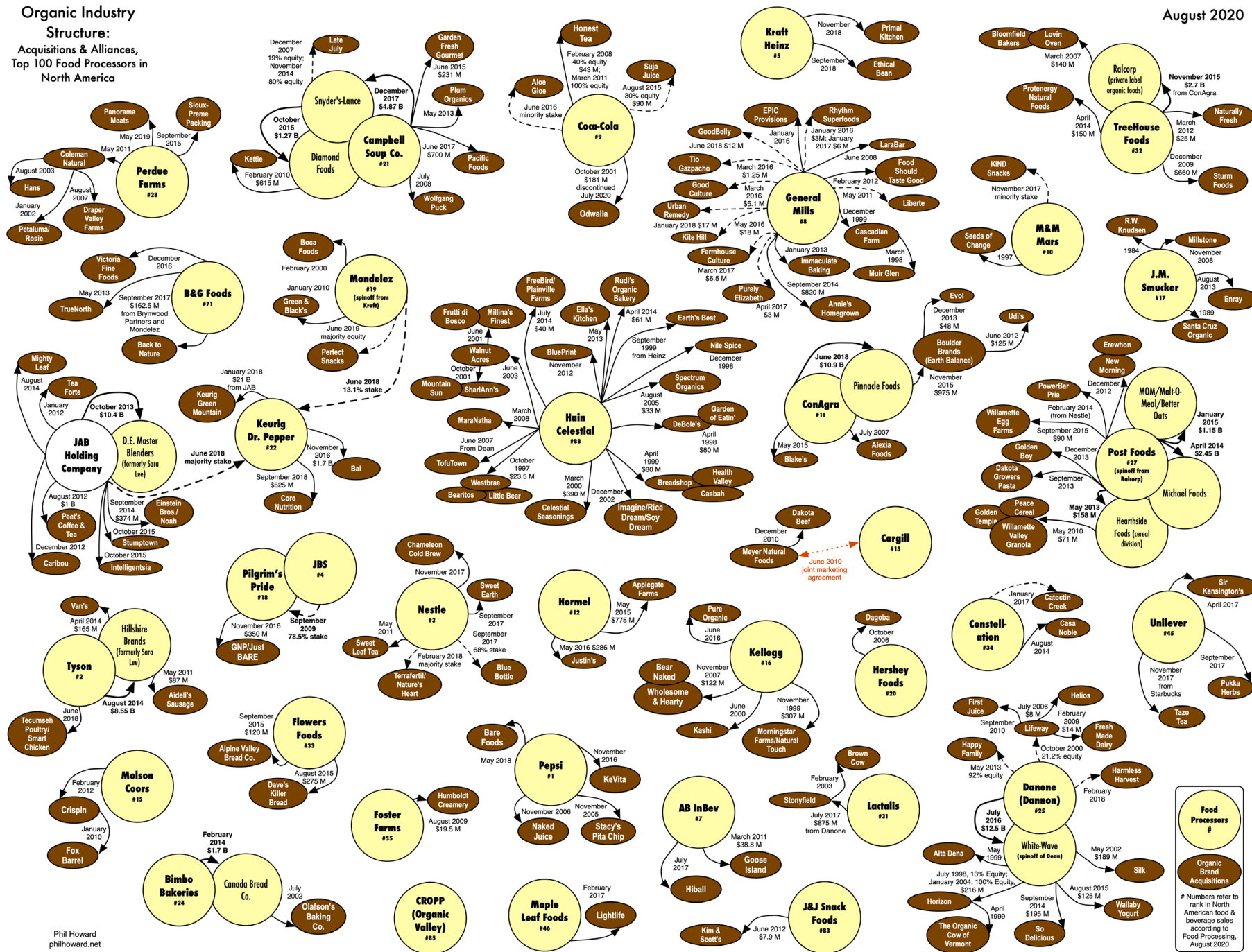
- Juice: 47%
- Table Sauce: 53%
- Bottled/Canned Green Beans: 56%
- Canned Tomatoes: 58%
- Canned Potatoes/Sweet Potatoes: 59%
- Prepared Salad: 68%
- Wine: 69%
- Prepared Soup: 70%
- Almond Milk: 81%
- Dips: 90.7%

Retail Grocery CR4: 69%

- Walmart: 34.8%
- Kroger: 13.9%
- Costco: 12.2%
- Albertsons: 8.1%
- Note: Kroger and Albertsons have moved to merge, but this merger is currently being challenged by the FTC. The merger of the second and fourth-largest grocery chains would significantly increase market concentration.

Organic Industry

Structure:
Acquisitions & Alliances,
Top 100 Food Processors in
North America



August 2020

Organic Processing Industry Structure 2020 – Phil Howard

Philhoward.net



Beyond Markets:
What does
consolidation mean
for our communities,
our natural places,
our resilience in the
face of shocks?

COVID Was Far Worse for Meatpacking Workers Than Previously Reported

A new Congressional investigation reveals more than 250 deaths and nearly 60,000 infections in the meatpacking industry during the pandemic—and that is just among the five largest companies.

<https://civileats.com/2021/11/02/covid-was-far-worse-for-meatpacking-workers-than-previously-reported/>

AGRICULTURE

USDA to pay farmers who euthanized animals amid meat plant shutdowns

USDA will pay 80 percent of the fair market value for the livestock, as well as the cost of depopulation and disposal.

<https://www.politico.com/news/2021/07/28/usda-to-pay-farmers-who-euthanized-animals-amid-meat-plant-shutdowns-501271>



Journal of Hydrology
Volume 581, February 2020, 124397



Research papers

Total phosphorus export from Iowa agricultural watersheds: Quantifying the scope and scale of a regional condition

Keith E. Schilling^a, Matthew T. Streeter^a, Anthony Seeman^b, Christopher S. Jones^c, Calvin F. Wolter^d

Iowa contributes 15% of Phosphorus Load to Gulf of Mexico (4.5% of Area)

Consolidated food chains are brittle, with little flexibility and many social and ecological impacts.

Farmers, workers and the environment are interconnected – particularly so in a consolidated system spanning the globe
When problems hit one part, they quickly engulf others

A group of people is standing in a field of tall grass, looking towards the horizon. The sky is blue with scattered white clouds. The overall scene is a rural landscape with rolling hills in the background.

Our future: Decentralized and Resilient

This is about the journey towards just transitions in the food system
AND
the capacity of our systems to adapt and transform



*“As a nation, we are fortunate to have a highly productive agricultural system, a vigorous private agribusiness sector, extensive infrastructure, and supportive public policies and institutions that together work **to provide a dependable, affordable, and diverse food supply**. However, recent events – especially the COVID-19 pandemic and the on-going pandemic recovery -- have revealed serious cracks in this system. Addressing these vulnerabilities to strengthen the resilience of our country’s agri-food supply chains is what this report is about.”* USDA Report on Agrifood Supply Chain Resilience 2022

*Is our food supply chain resilient?
Who is it resilient for?
To what is it resilient?*

Check out info at
<https://lfscovid.localfoodeconomics.com/>



[Resource Hub](#) | [Consumer Food Insights](#) | [Innovation Briefs](#) | [Sector Snapshots](#) | [Webinar Series](#) | [Partners](#) | [About](#)

The Local and Regional Food System Recovery and Resilience Project 2.0

A project led by the USDA Agricultural Marketing Service along with cooperating researchers and community partners.

<https://lfscovid.localfoodeconomics.com/>


03:17

[Learn More About The Project](#)


[Project Overview](#)

Latest Additions

- ✓ [Consumer Covid Crisis Edges Back – A Little](#)
- ✓ [Consumer Food Insights April 2022](#)
2.0 Survey Overview
- ✓ [Webinar May 13, 2022](#)
Going far by going together:
Building a network of food system networks
- ✓ [Final Report: Local and Regional Food System Covid-19 Rapid Response 1.0 Final Report](#)
- ✓ [Local Food Systems Response to Covid](#)
Project Overview 2022
- ✓ [Novel methods for an interesting time: Exploring U.S. local food systems' impacts and initiatives to respond to COVID, November 2021](#)
The Australian Journal of Agricultural and Resource Economics
- ✓ [U.S. Consumer Food Insights](#)

A close-up photograph of a variety of fresh vegetables. In the foreground, there are several bright red tomatoes, a large yellow bell pepper, and a green zucchini. Behind them, you can see a cucumber, a purple eggplant, a carrot, and several mushrooms. The background is filled with more vegetables like garlic, onions, and more tomatoes, creating a rich, colorful scene.

What does resilience mean to you?
Is your community's food system (chain, supply, source) resilient?



Hodbad: Principles of Resilience can be measured

- KEY QUESTION: Resilient to what and for whom?
- *Unintentional change indicates a lack of resilience*

- Socio-ecological structure is resilient if can persist/adapt to maintain identity
- Socio-ecological structure is resilient if can transform to support *intentional* new identity

Resilience in the food system will require transformation (intentional change)

Latitude to Accommodate Change: Continuous adaptation that allows us to absorb shocks ecologically, economically and socially

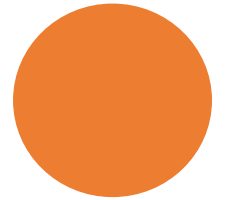
Flexibility and innovation

Redundancy of Role and Functions: Decentralized systems that have overlapping back-ups in place

Community and regional food systems that are interconnected with global systems

Diversity of Organizational Forms: A diversity of scale, form, and organization, across elements that protect the integrity of the whole system.

Cooperatives, commons, private business, small, large

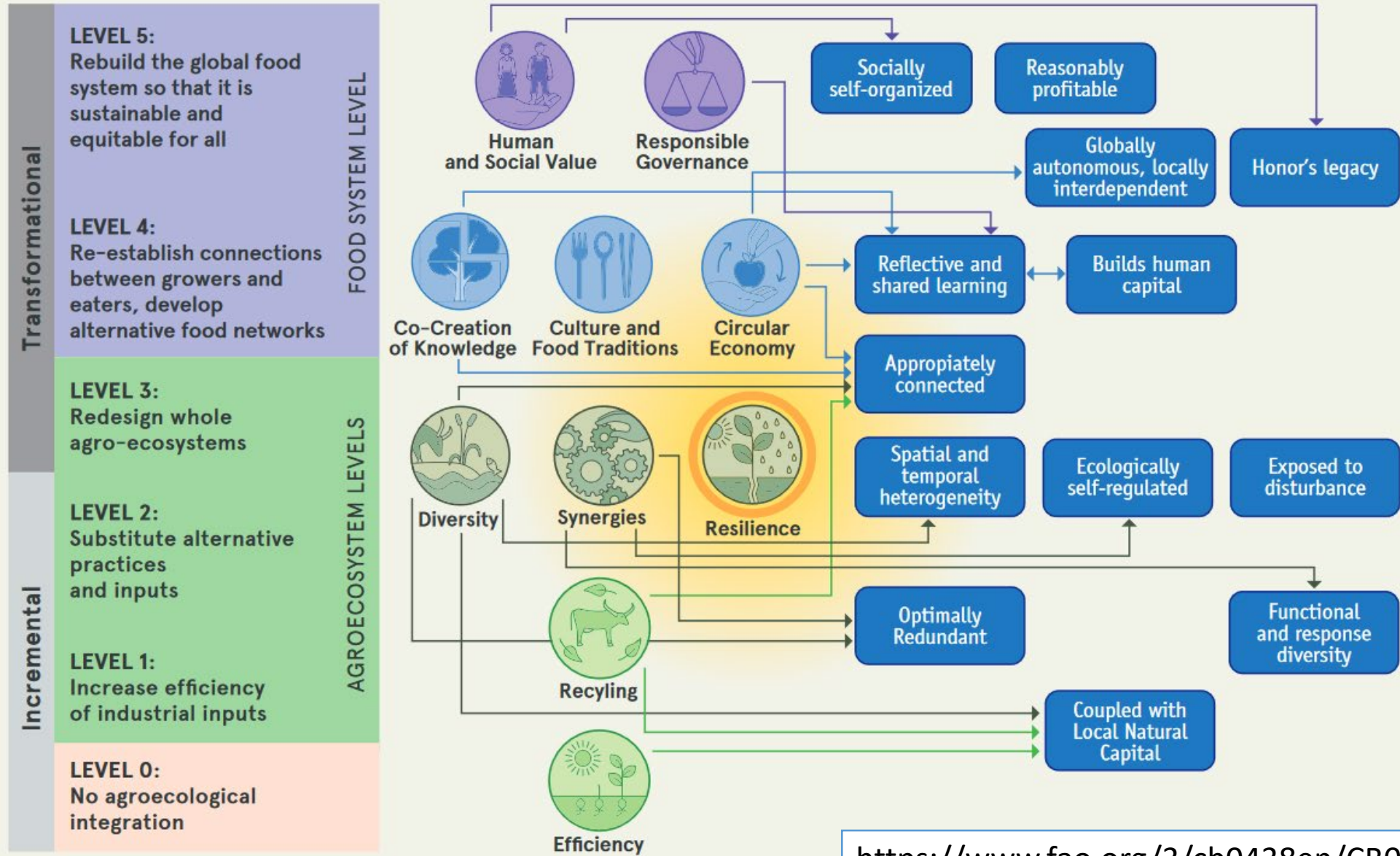


Differ on Basic Assumption of Nature of the World

TABLE 2.2 Differences between Sustainability and Resilience.

	Sustainability	Resilience
Assumptions	Stability and balance are the norm (or are at least possible)	Nonlinear and unpredictable change and chaos are the norm
Goals	Normative ideals (culture, environment and economic conservation, intergenerational equity, fairness)	Strategic, dynamic and self-organizing systems; learning institutions and innovative cultures
Research Foci	Environmental and social impacts of economic development and growth, overuse of resources, carbon footprints	Natural and human disaster management, climate change impacts, social capital and networks
Methods	“Wise Use” resource management, mitigation or preservation against change, recycling and greening, education for behavior change	Reducing vulnerability and increasing physical and social capacity for change (flexibility, redundancy), system feedback and performance, education for innovation
Criticism	Poorly defined and highly politicized	Does not address the causes of social and environmental change

LINKING FAO'S 10 ELEMENTS OF AGROECOLOGY AND GLIESSMAN'S FIVE LEVELS OF FOOD SYSTEM TRANSFORMATION (INSPIRED BY HLPE REPORT) WITH THE 13 SHARP RESILIENCE INDICATORS



The vision of community-based food systems

-is one in which sustainable food production, processing, distribution and consumption are integrated to enhance the **environmental, economic, social and nutritional health** of a particular place. It is a long-term goal toward which many communities are striving. Feenstra & Garrett, 1999

VCE Model of Community, Local, Regional Food Systems





Relationships that promote equity, justice, and a **high quality of life.**

<https://www.sare.org/resources/understanding-and-measuring-social-sustainability/?highlight=social+sustainability>

<https://www.sare.org/resources/social-sustainability-in-agriculture/>

Critical needs?

Skills and Knowledge

- Production, Marketing, Distribution, Retailing, Serving, Cooking, Handling Waste

Infrastructure

- Energy efficient production, storage, transportation, and distribution equipment and facilities
- Investments to facilitate the economic development this can provide

Policy

- Regulatory policies to strengthen and enhance these systems
- Potential policy incentives to help these systems continue to innovate

Partnerships



Political Democracy

Democracy in our Food System

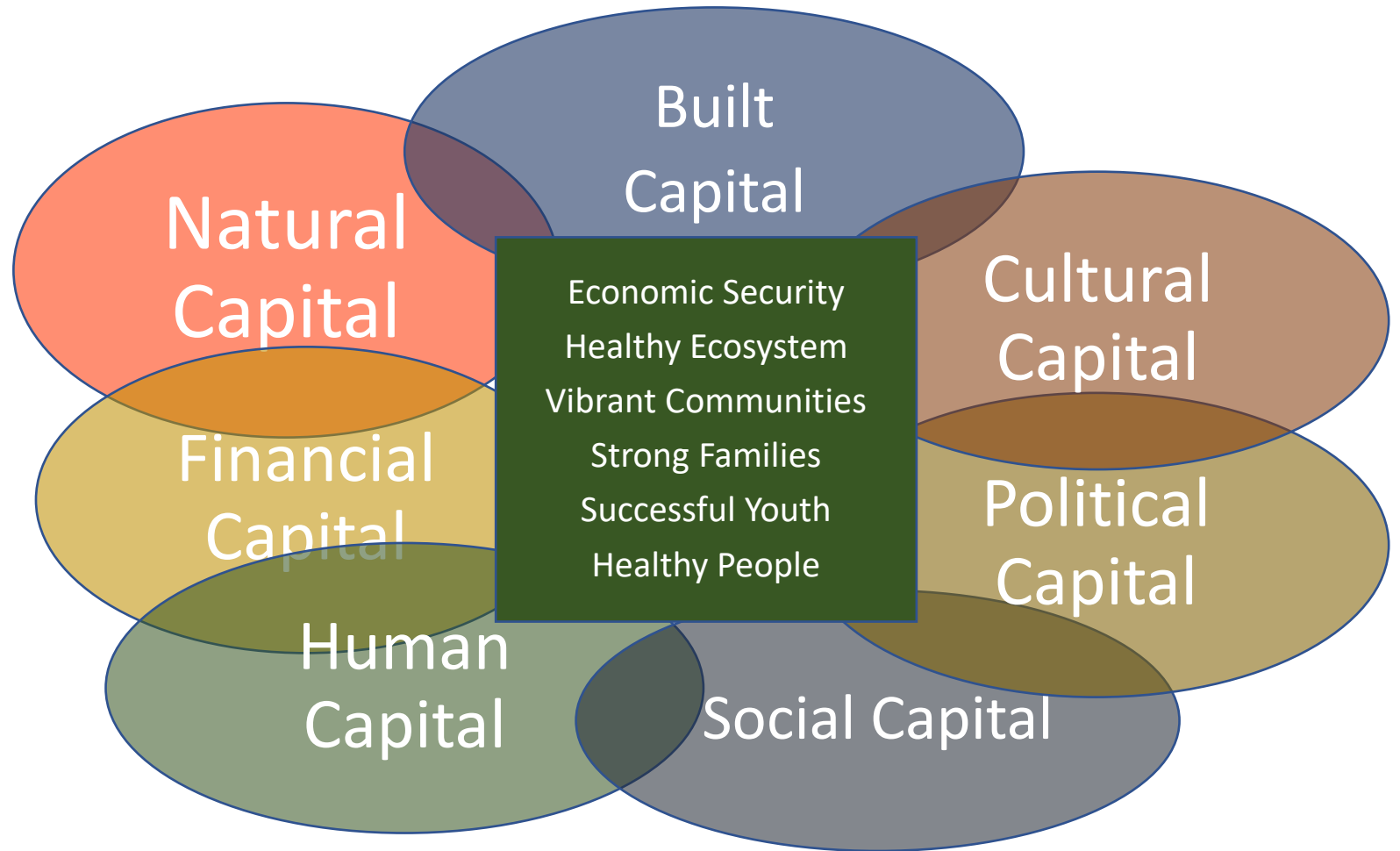
- Democratize the food system at local, state, regional and national scales
- Collective work by policy-makers, farmers, workers and communities to fashion alternatives and policies that can help to curb monopolistic tendencies in our food system
- Prioritize resilience and redundancy
- Rethink core assumptions
- Encourage the development of alternative production and consumption arrangements.



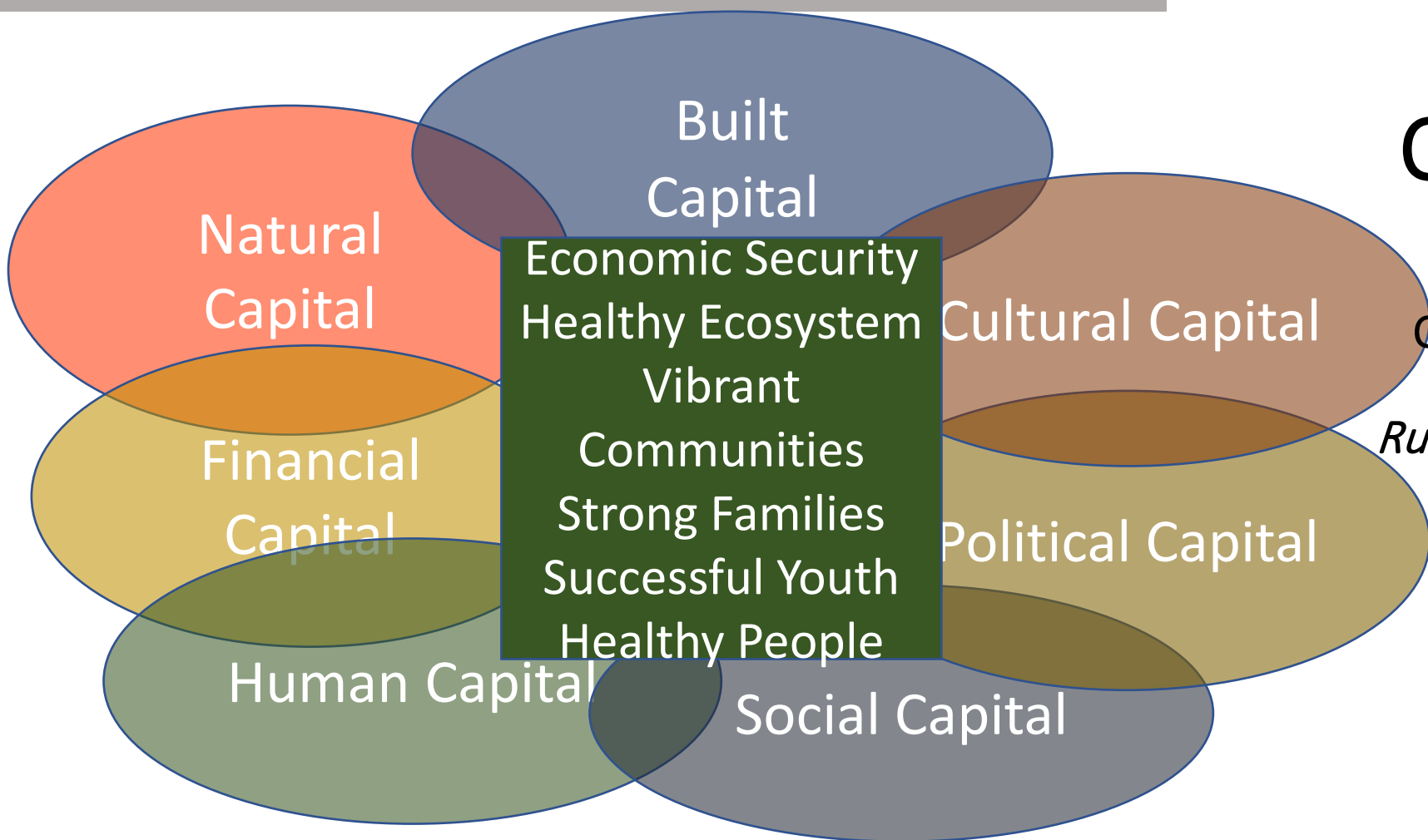
Economic Democracy

Food and Civic Engagement

- Solution to redistributing power is to ground it in new forms of social and economic relationships that build comprehensive wealth
- The future of food is social – building durable relationships and social spaces



Source: Cornelia Flora and Jan Flora, Iowa State University



Comprehensive Wealth

Comprehensive Rural Wealth
USDA-ERS Report
Rural Wealth Creation: Concepts, Strategies, and Measures



Creating wealth that is “rooted in place through local ownership and control and building more self-reliant and resilient economy.”

Build lasting livelihoods – the capabilities, the assets - both material and social resources - and the activities required for a means of living

THANK YOU

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<https://maryhendrickson.wordpress.com/>



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