

INTRODUCTION TO ORGANIC AGRICULTURE: PRODUCTION, MARKETS, AND POLICY

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Learning Goals

- To learn some 'stylized facts" about US organic agriculture
 Production and Sales, "Typical" organic farm, Where WI fits in
- To learn the major parts of the US food system and the flow of goods
 - Where (organic) farms fit into the US food system
- Let's talk about Organic Ag in the US based on data

Organic Farms and Acres in the US



https://downloads.usda.library.cornell.edu/usdaesmis/files/zg64tk92g/2z10z137s/0c484v77r/cenorg22.zip

All Organic, Cropped, and Pasture Acres by State

	State	All Acres	State	Crop Acres	State	Pasture Acres
	US	4,895,279	US	3,630,594	US	1,264,685
1	California	813,710	California	411,175	California	402,535
2	New York	331,438	Montana	262,139	Oregon	87,848
3	Montana	319,722	New York	256,920	New York	74,518
4	Wisconsin	245,333	Texas	198,990	Wisconsin	60,518
5	Texas	240,806	Wisconsin	184,815	Montana	57,583
6	Oregon	228,152	Idaho	177,132	South Dakota	56,978
7	Idaho	215,668	Vermont	163,608	Texas	41,816
8	Vermont	203,083	lowa	156,885	Colorado	41,082
9	Colorado	190,809	Colorado	149,727	Vermont	39,475
10	lowa	169,361	Oregon	140,304	Idaho	38,536

https://downloads.usda.library.cornell.edu/usda-esmis/files/zg64tk92g/2z10z137s/0c484v77r/cenorg22.zip

Organic Farms in US

Organic Acres in US



USDA NASS https://www.nass.usda.gov/Surveys/Guide_to_NASS_Surveys/Organic_Production/index.php (Dropped 2011 Survey)

Average Total Organic Acres per Farm by State



https://downloads.usda.library.cornell.edu/usda-esmis/files/zg64tk92g/2z10z137s/0c484v77r/cenorg22.zip

Average Organic Crop Acres per Farm by State



https://downloads.usda.library.cornell.edu/usda-esmis/files/zg64tk92g/2z10z137s/0c484v77r/cenorg22.zip

Average Organic Acres per Organic Farm



Summary: Stylized Facts for 2021

- 17,445 organic farms in the US
 - Top States were CA, WI, NY, PA
 - CA had more than twice as many as 2nd place WI
 - Total number of organic farms is still increasing
- 4.9 million organic acres in the US, 3.6 million crops, 1.3 million pasture
 - CA dominates, then NY, MT, WI, TX
 - Total organic acres has been flat to decreasing
- US averaged 281 organic acres per organic farm
 - Largest averages in west: WY, NV, UT, MT average > 1,500 acres
 - WI was 28th with 169 acres on average per farm, 133 cropped acres

Organic Products Sales by Farms

Value of Organic Sales

54% Crops 46% Livestock \$ million Milk 1,633 **Broiler chickens** 1,509 Eggs 1,221 Apples 629 Corn for grain 424 **Strawberries** 336 Cattle 316 Grapes 309 Lettuce 276 Soybeans 242

Top States: Certified	l Organic Sales
\$11.2 Billion Total Sales, +13% from 2019	\$ million
1 California	3,550
2 Washington	1,140
3 Pennsylvania	1,094
4 Texas	572
5 Oregon	386
6 New York	328
7 Wisconsin	313
8 North Carolina	308
9 Michigan	272
10 Colorado	253

https://www.nass.usda.gov/Publications/Highlights/2022/2022_Organic_Highlights.pdf

Total Organic Sales (\$ Billion) from Organic Farms



Cash Receipts 2018-2022F by Commodity \$436.8 B in 2021, organic = 2.56%



https://www.ers.usda.gov/topics/farm-economy/farm-sector-income-finances/farm-sector-income-forecast/

University of Wisconsin-Madis

2021 Top Organic Livestock and Livestock Products

Livestock	Farms	Head	Sales \$M	\$/Farm	Head/Farm	\$/Unit
Broilers	419	234,815,234	\$1,509	\$3,601,003	560,418	\$6.43
Beef Cows	312	7,616	\$10.3	\$32,928	24	\$1,349
Other cattle	2,455	228,351	\$239	\$97,495	93	\$1,048
Milk Cows	2,023	73,531	\$66.1	\$32,655	36	\$898

		Quantity	_			
Product	Farms	(cwt, doz)	Sales \$M	\$/Farm	Quantity/Farm	\$/Unit
Milk	2,478	51,964,918	\$1,632,652	\$658,859	20,971	\$31.42
Eggs	1,105	544,530,285	\$1,220,933	\$1,104,916	492,788	\$2.24

Livestock Product Units: cwt for Milk; doz for Eggs @16,730 lbs/yr = 125 head/farm
@300 eggs/layer = 19,712 layers/farm

2021 Top Organic Crops

Crop	Farms	Acres	Quantity	Sales \$M	\$/Farm	Ac/Farm
Corn	3,962	374,977	49,467,464	\$423,875	\$106,985	94.6
Soybeans	2,591	250,495	9,505,846	\$241,968	\$93,388	96.7
Apples	756	31,002	9,839,059	\$628,773	\$831,710	41.0
Strawberries	546	5,301	1,495,299	\$335,964	\$615,319	9.7
Grapes	774	42,283	211,477	\$309,221	\$399,511	54.6
Lettuce	1,140	45,964	3,925,855	\$275,586	\$241,742	40.3

Units: bu (Corn, Soybean); cwt (Apples, Lettuce, Strawberries); tons (Grapes)

2021 Top Organic Crops: Yields and Prices

		Yield		Price			
Crop	Unit/Ac	US Avg	% Diff	\$/Unit	US Avg	% Diff	
Corn	131.9	176.7	-25%	\$8.57	\$6.00	43%	
Soybeans	37.9	51.7	-27%	\$25.45	\$13.30	91%	
Apples	317	339	-6%	\$63.91	\$31.70	102%	
Strawberries	282	540	-48%	\$224	\$128	76%	
Grapes	5.0	6.7	-25%	\$1,462	\$914	60%	
Lettuce	85.4	289	-70%	\$70.20	\$43.18	63%	

Units: bu (Corn, Soybean); cwt (Apples, Lettuce, Strawberries); tons (Grapes)

2021 Select Production Expenses

ltem	Expense \$ million	% of Sales
Certification	\$43.6	0.4%
Livestock Feed	\$1,943	17.3%
Food Safety	\$42.9	0.4%
Hired Labor	\$2,630	23.5%
Seed/Plants	\$672	6.0%
Organic	\$320	2.9%
Non-organic	\$353	3.1%
Total	\$5,332	48.7%

WI Farm Cash Re	ceipts 2021
Category	Sales \$1,000
Dairy, Milk	5,912,788
Corn	2,111,200
Beef	1,581,642
Soybeans	1,210,861
Vegetables	568,544
Other Crops	558,745
Hogs	187,527
Broilers & Turkeys	171,727
Fruit	170,841
Eggs	129,357
Other Livestock	125,194
Нау	112,113
Small grains	97,940
Total	12,938,479



https://www.nass.usda.gov/Statistics_by_State/Wisconsin/Publications/Annual_Statistical_Bulletin/2022AgStats-WI.pdf



Average Sales (\$1,000) per Farm

Average Sales \$ per Acre



USDA NASS https://www.nass.usda.gov/Surveys/Guide_to_NASS_Surveys/Organic_Production/index.php (Dropped 2011 Survey)

Summary: Stylized Facts for 2021

- \$11.2 billion in organic sales from farms, ~2.5% of all US farm cash receipts
- · Livestock and Crops each about half of sales, similar to US farms
- Top Commodities: Milk, Broilers, Eggs, then Apples and Corn
 - CA top state in organic sales, 32% of total sales
 - WI ranked 7th with \$313 million
- Average sales per farm and per acre steadily increasing
 - WI ranked 40th, lowest of the top 10 states
- Average organic chicken farm (Broilers, Eggs) seems quite large
- Average organic crop yields less than US average
 - Average organic apple yield only 6% below US average
 - Remaining crops 25% to 70% lower yield
 - Organic price premium was 40% to 100% across row crops and F&V

Organic Farm Size by Sales

Sales by Farm Type and State

	# Far	ms by Sale	s Type	Average	Sales (\$2	L,000/Farm)	by Type
			Livestock				Livestock
State	Crops	Livestock	Products	All Sales	Crops	Livestock	Products
US	14,138	3,777	3,588	\$643	\$435	\$582	\$797
California	2,890	182	134	\$1,162	\$935	\$2,696	\$2,666
Washington	667	80	69	\$1,561	\$1,407	\$905	\$1 <i>,</i> 867
Pennsylvania	610	567	458	\$974	\$246	\$1,288	\$468
Texas	238	27	20	\$2,218	\$753	\$1,694	\$17,358
Oregon	458	50	38	\$787	\$544	\$431	\$3,042
New York	1,003	518	564	\$233	\$115	\$60	\$321
Wisconsin	1,077	559	542	\$215	\$95	\$63	\$322
North Carolina	228	99	25	\$920	\$243	\$2,163	\$1,537
Michigan	525	57	64	\$475	\$198		
Colorado	241	23	17	\$954	\$441	\$1,001	\$7,251

Share of Farms and Sales by Farm "Size"

% Farms	US	CA	CO	MI	NY	NC	OR	PA	ТХ	WA	WI
<\$10	11%	19%	16%	10%	8%	9%	20%	4%	2%	8%	8%
\$10-\$25	12%	14%	5%	12%	13%	7%	12%	9%	7%	10%	14%
\$25-\$50	12%	10%	12%	15%	14%	10%	9%	11%	7%	10%	17%
\$50-\$100	14%	12%	12%	23%	16%	16%	9%	13%	9%	13%	17%
\$100-\$250	20%	14%	12%	16%	27%	13%	19%	26%	12%	16%	26%
\$250-\$500	12%	9%	18%	12%	13%	6%	10%	17%	17%	10%	9%
>\$500	18%	22%	24%	12%	8%	39%	21%	21%	46%	32%	9%
% Sales	US	CA	CO	MI	NY	NC	OR	PA	ТХ	WA	WI
% Sales <\$10	US 0%	CA 0%	CO 0%	MI 0%	NY 0%	NC 0%	OR 0%	PA 0%	TX 0%	WA 0%	WI 0%
% Sales <\$10 \$10-\$25	US 0% 0%	CA 0% 0%	CO 0% 0%	MI 0% 0%	NY 0% 1%	NC 0% 0%	OR 0% 0%	PA 0% 0%	TX 0% 0%	WA 0% 0%	WI 0% 1%
% Sales <\$10 \$10-\$25 \$25-\$50	US 0% 0% 1%	CA 0% 0%	CO 0% 0% 0%	MI 0% 0% 1%	NY 0% 1% 2%	NC 0% 0% 0%	OR 0% 0%	PA 0% 0%	TX 0% 0% 0%	WA 0% 0%	WI 0% 1% 3%
<pre>% Sales <\$10 \$10-\$25 \$25-\$50 \$50-\$100</pre>	US 0% 0% 1% 2%	CA 0% 0% 0% 1%	CO 0% 0% 0% 1%	MI 0% 0% 1% 3%	NY 0% 1% 2% 5%	NC 0% 0% 0% 1%	OR 0% 0% 0% 1%	PA 0% 0% 0% 1%	TX 0% 0% 0%	WA 0% 0% 0% 1%	WI 0% 1% 3% 5%
<pre>% Sales <\$10 \$10-\$25 \$25-\$50 \$50-\$100 \$100-\$250</pre>	US 0% 0% 1% 2% 5%	CA 0% 0% 0% 1% 2%	CO 0% 0% 0% 1% 2%	MI 0% 0% 1% 3% 6%	NY 0% 1% 2% 5% 20%	NC 0% 0% 1% 2%	OR 0% 0% 1% 4%	PA 0% 0% 0% 1% 5%	TX 0% 0% 0% 0% 1%	WA 0% 0% 0% 1% 2%	WI 0% 1% 3% 5% 20%
% Sales<\$10	US 0% 0% 1% 2% 5%	CA 0% 0% 0% 1% 2% 3%	CO 0% 0% 0% 1% 2% 6%	MI 0% 0% 1% 3% 6% 9%	NY 0% 1% 2% 5% 20%	NC 0% 0% 0% 1% 2% 3%	OR 0% 0% 1% 4%	PA 0% 0% 0% 1% 5% 6%	TX 0% 0% 0% 0% 1% 3%	WA 0% 0% 0% 1% 2% 2%	WI 0% 1% 3% 5% 20% 14%

Farms with Sales > \$500,000 per Year

State	Farms	Sales \$1,000	% Org Farms	% Org Sales	\$1,000/Farm
US	3,109	\$9,616,458	18%	86%	\$3,093
CA	681	\$3,334,097	22%	94%	\$4,896
СО	64	\$227,550	24%	90%	\$3,555
MI	70	\$218,644	12%	80%	\$3,123
NY	117	\$172,262	8%	53%	\$1,472
NC	129	\$287,804	39%	93%	\$2,231
OR	103	\$348,554	21%	90%	\$3,384
PA	234	\$963,057	21%	88%	\$4,116
ТХ	119	\$547,997	46%	96%	\$4,605
WA	235	\$1,082,339	32%	95%	\$4,606
WI	133	\$174,588	9%	56%	\$1,313

All US Farms in 2016

89.9% of Farms

Small Midsize		Large	Large-scale			
005	GCFI	Large	Very large	Famil		
GCFI < \$350,000	\$350,000- \$999,999	GCFI \$1,000,000 - \$4,999,999	GCFI ≥ \$5,000,000	25,00 1.2%		
123 mall Family	3,000 6.0 % y Farms (G	% 53,800 2.6% CFI less than \$350,00	6,500 0.3%			
• Retire	ment farms	. Small farms whose p	principal operators rep	ort		
they ar	e retired, alt	hough they continue t	o farm on a small scal	le		
(366,8	12 farms; 17	.9% of U.S. farms in 2	2016).			
• Off-fai	m occupat	ion farms Small farm	s whose principal one	ara-		
tors rei	nort a major	occupation other than	farming (860-739 far	ms:		
41.9%	of U.S. farm		r lanning (000,700 lai	1110,		
41.070	01 0.0.1411					
• Farmir	ng-occupat	ion farms. Small farm	s whose principal ope	era-		
tors rep	oort farming	as their major occupa	ition.	Sec.		
中国的"百姓"	Low-sale	s. GCFI less than \$15	0,000 (506,001 farms	;		
And sheet	24.7% of	U.S. farms).				
16 Kanker	Moderate	-sales. GCEL betwee	n \$150,000 and \$349	999		
PRINCIPAL CONTRACT	(110 504	formor 5 40% of U.S. fo	rmo)			

https://www.ers.usda.gov/webdocs/publications/86198/eib-185.pdf

% of Farms by Farm Type (All US Farms)

Farm Type	% Farms	Category	Gross Revenue
Retirement	17.9%	Small	< \$350k
Off Farm Job	41.9%	Small	< \$350k
Low Sales	24.7%	Small	< \$150k
Moderate Sales	5.4%	Small	\$150k - \$350k
Mid-Sized	6.0%	Mid-Sized	\$350k - \$1 million
Large	2.6%	Large	\$1 - \$5 million
Very Large	0.3%	Large	> \$5 million
Non-Family	1.2%	Non-Family	Non-Family

Source: https://www.ers.usda.gov/webdocs/publications/86198/eib-185.pdf

All US Farms in 2016

Farm Size	% of Farms	% of Land	% of Production \$
Small	89.9%	50.6%	22.6%
Mid-Sized	6.0%	21.2%	22.7%
Large Scale	2.9%	18.0%	45.2%
Non-Family	1.2%	10.3%	9.6%

- Most of the Farms and Land are small family farms
- Large scale family farms use 18.0% of the land to produce 45.2% of the production value
- Small family farms use 50.6% of the land to produce 22.6% of the production value

Source: https://www.ers.usda.gov/webdocs/publications/86198/eib-185.pdr



Farms by operating profit margin (OPM) and farm type, 2016

Percent of farms in each group





Source: https://www.ers.usda.gov/webdocs/publications/86198/eib-185.pdf

Summary: Stylized Facts

- Average sales by farms selling Livestock Products are above average
 - A few states have livestock product farms with very large average sales
 - WI, NY, PA: lots livestock product farms with relatively low average sales
- About 3,100 Farms (18%) have Annual Sales >\$500,000 (Full-time farmers)
 - 50% of farms have <\$100,000 in sales (part-time farmers)
 - WI: 9% >\$500,000: much smaller than US average, 2nd lowest of top 10
- 86% of organic sales from farms with >\$500,000 in sales
 - Top 10 states, TX, WA, CA, NC: >92% of sales from farms with >\$500,000
 - WI: 56% >\$500,000: much smaller than US average, 2nd lowest of top 10
- My guess: $\sim \frac{1}{3}$ of the >\$500,000 sales farms likely have profit margins <10%

US Food System and Organic Ag

Conceptual Model of the U.S. Food Supply Chain



https://www.ncbi.nlm.nih.gov/books/NBK305173/

Source: Nesheim et al. (2015) Figure 2.1

US Consumer Spending on Food



https://www.ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials/food-prices-and-spending/

US Consumer Spending on Organic Food

- \$52 Billion in 2021
- 2.45% of the \$2.12 Trillion spent on food by US
- Fruits & Vegetables
 \$21 Billion (40%)
- Dairy & Eggs \$6.8 Billion (13%)
- Breads and Grains
 \$4.9 Billion (9.4%)
- Meat \$2.1 Billion (4.0%)



somewhat lower than Organic Trade Association estimates.

Source: USDA, Economic Research Service using data from Nutrition Business Journal, 2022. Values are adjusted for inflation (to 2021 dollars) using the CPI-U.

https://www.ers.usda.gov/data-products/chart-gallery/gallery/chart-detail/?chartId=55444

What Do We Eat? Calories by Source (2011)



Source: https://www.nationalgeographic.com/what-the-world-eats/

Where is the Value Generated?

Estimated value added to GDP by sectors of the US food supply chain 2005-2012



Source: Nesheim et al. (2015) Figure 2.4

Where is the Value Generated?



Distribution of value added across subsectors of food supply chain 1993-2012

Source: Nesheim et al. (2015) Figure 2.6

How is the Value Generated – By Capital or Labor?

Distribution of value added by factor of production across US subsectors, 2012



How Much of Food Expenditures Do Farmers Keep?

Farmer's share larger for Food At Home



Source: USDA, Economic Research Service, Food Dollar Series.

Source: Nesheim et al. (2015) Figure 2.5

1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012



Different way to allocate food dollar: by industry group

Food dollar differences explained: https://www.ers.usda.g ov/webdocs/publication s/44825/7759_err114.p df?v=1106.2

Note: Other includes Agribusiness (2.2 cents) and Legal and accounting (1.8 cents). Source: USDA, Economic Research Service, Food Dollar Series.

Farmer's Share of Food Spending for Specific Foods

Did you know that farmers and ranchers receive only 14.6* cents of every food dollar that consumers spend? According to the USDA, off farm costs including marketing, processing, wholesaling, distribution and retailing account for more than 80 cents of every food dollar spent in the United States.

Bread

2 lbs.





\$9.99 \$1.75

Cereal 18 oz. box





Lettuce 1 lb.

Farmer:







Retail:

Farmer

Eggs

Retail: Farmer:





\$1.59

\$0.85





Farmer: \$0.04

Boneless Ham





Share Food 43.5% Milk 53.5% Eggs **Top Sirloin** 17.5% 10.7% Bacon 17.5% Potatoes Apples 23.7% 10.0% Lettuce Carrots 49.5% Beer 0.4%

\$3.99 \$0.11 Farmer: \$2.42 Flour King Arthur, 5 lbs.

> Retail: Farmer:

> > Source: https://nfu.org/farmers-share/



Retail: Farmer:

Retail:

Farmer:



\$6.99

\$1.22

\$3.79



\$8.99 \$0.57



1 lb.

Farmer: Milk 1 gallon, fat free

Retail:

Farmer:

1 lb.

Tomatoes

\$1.56 Farmer: Farmer's share derived from USDA, NASS "Agricultural Prices," 2020. | Prices based on June 2020 data.

Retail prices based on Safeway (SE) brand except where noted. | *Figure according to U.S. Department of Agriculture Economic Research Service

\$3.59

August 3, 2020

Organic vs Conventional Farmer's Share

43.5%

53.5%

17.5%

23.7%

10.0%

49.5%

	Total (\$ m	Sales illion)	
Livestock and poultry products	2,858	1633	Organic
Eggs		1,221	Organic
Vegetables in the open	1,914	276	Fruits & V
Spinach		215	
Potatoes		183	Dairy & F
Onion all		140	
Broccoli		135	Tatal
Fruits, tree nuts, and berries	2,199		Total
Apples		629	
Strawberries		336	Food 2020
Grapes		309	1000 2020
Blueberries		224	
All Citrus Rasnherries		108 94	
Blackberries		71	Faas
Livestock and poultry	2,197		сууз
Broiler chickens		1,509	Potatoes
Cattle		316	1 0101065
Field crops	1,498		Annles
Corn for grain		424	Apples
Soybeans		242	Lattuca
Alfalfa Dry Hay		179	Lelluce
Wheat		139	Carrote
Total	11,205		Canols

Sector

https://www.nass.usda.gov/Publications/Highlights/2022/2022_Organic_Highlights.pdf

Commodity

ganic Category	Farm Sales	Consumer Spending	Farmer's Share
uits & Vegetables	\$4.113	\$20.897	19.7%
airy & Eggs	\$2.858	\$6.770	42.2%
tal	\$11.205	\$52.013	21.5%
od 2020 Share		1.	

- Organic vs conventional Fruit & Vegetables and Dairy & Eggs have about same farmer's share
- Aggregate organic share of 21.5% beats the 14.5% or 7.4% conventional average by a lot

Summary: Stylized Facts

- Consumers spend over \$2.12 Trillion on food
 - 55% on food away from home (FAFH), 45% on food at home (FAH)
- Consumer spending on organic food just over \$50 billion, about 2.5% of total
- Most of the value in the food system is generated after the farmgate
 - Food Services, plus Food Processing, Retail and Wholesale Trade
 - Post-farmgate is where the jobs are and the economic impact is generated
- Farmer's share of food dollar is small, 14.5% or 7.4% on average
 - Larger share for milk and eggs than for most fruits and vegetables
 - Organic farmer's share of the food dollar is larger, 21.5% on average
- Farming is more capital intensive on average than rest of supply chain

Organic Direct Marketing

Organic Marketing: 2021 Census of Agriculture

			Sales \$	
Market Channel	Farms	% Farms	million	% Sales
Direct to Consumer	3,261	18.7%	310	2.8%
Direct to Retailer, Institution, or Food Hub as Local/Regional	3,309	19.0%	2,021	18.0%
Direct Total			2,330	20.8%
Community Supported Agriculture (CSA)	1,432	8.2%		
Value Added Products Sold	1,455	8.3%	697	6.2%

Direct Farm Sales of Food

Results from the 2020 Local Food Marketing Practices Survey

	Sales \$ Billion		
Buyer	2020	2015	
Consumer	\$2.9	\$3.0	
Retailer	\$1.9	\$2.3	
Intermediary	\$4.1	\$3.4	
Total	\$9.0	\$8.7	

State	Sales	State	Sales
CA	\$1,432	WA	\$323
PA	\$600	ТΧ	\$273
NY	\$584	OR	\$255
MI	\$555	MA	\$254
ME	\$342	FL	\$247

Highlights

Where do Farms Direct Sell?

Direct-to-Consumer Sales by Marketing Practice, 2020 (\$ million)



Farmers Markets Selling Vegetables by State in 2020





Farmers Markets Selling Vegetables per Million People



Farmers Markets National Trend



Notes: Data from 1994 to 2008 are available only for even-numbered years. Odd-numbered years were estimated by taking the average of the prior and following year, denoted by the lighter green color.

Source: USDA, Economic Research Service using data from USDA, Agricultural Marketing Service, National Agricultural Statistics Service, Farmers Market Surveys and National Farmers Market Directory, accessed July 6, 2022.

- Nationally farmers markets are saturating
- Wisconsin has a farmers market culture
- Wisconsin farmers markets getting more competitive?
- Caveat: these data are all from before the pandemic



Summary: Stylized Facts

- Most (79%) organic food is sold through the conventional food system
 - < <3% direct to consumers
 - 18% direct marketed as "local foods" direct to retailers and intermediaries
- Of all the food direct marketed to consumers, about $\frac{1}{4}$ is organic
- Farmers markets and direct consumer marketing seem to be slowing
- Growth in organic sales coming from the conventional food system

Let's Talk about Organic Food Systems

 On next three pages, look at the figures of the US Food Supply Chain and the pie chart of US farmer production expenditures

Discussion Questions

- How is Organic Ag different from and similar to conventional ag?
 - What needs does it have that are different from conventional ag?
 - What needs does it have that are similar to conventional ag?
 - What jobs does it have that are different from conventional ag?
 - What jobs does it have that are similar to conventional ag?

Conceptual Model of the U.S. Food Supply Chain



https://www.ncbi.nlm.nih.gov/books/NBK305173/

Food Systems and Environmental & Social Systems



Source: Nesheim et al. (2015) Figure 2.8

US Farm Production Expenditures in 2019



\$358 Billion Farm services

Labor

Feed

- Supplies, repairs & construction
- Fertilizers & chemicals
- Machinery, vehicles & fuel
- Interest, taxes & misc capital
- Seeds & plants
- Livestock & related expenses

Rent

Source: USDA NASS Farm Production Expenditures 2019 Summary

Discussion Questions

- What is the Organic Ag Value Proposition?
 - What values or benefits does it bring to consumers and society?
 - Are its values "real" or "perceived" by consumers and so subject to change?

What is Climate Smart Agriculture?



Climate Smart Agriculture Outcomes

- Increased Productivity and Farm Returns
- Improved Input Use Efficiency
- Reduced Greenhouse Gas Emissions
- More Resilient Systems
- Improved Equity and Social Inclusion

Short Answer

 Rebranding of BMP adoption and adding climate change mitigation and adaptation



USDA Partnerships for Climate Smart Commodities



What are they supposed to do?

- Pay farmers to implement <u>climate-smart</u> production practices on working lands
- Measure, monitor and verify carbon and greenhouse gas benefits from these
- <u>Develop markets</u> and promote the resulting climate-smart commodities

Re-Energize Ag Conservation & Jump Start Carbon Markets

\$3.1 Billion on 141 Projects

- Edge Dairy Farmer Coop: \$50 M
- Organic Valley (CROPP): \$25 M
- Carbon A List (Danone) \$70 M
- The DeLong Co: \$40 M
- Fox-Wolf Watershed Alliance \$5 M
- Dairy Grazing Apprenticeship \$4.8 M

https://www.usda.gov/climate-solutions/climate-smartcommodities/projects Division of Extension





Our Goal Today

- Hear from academics and practioners to get us talking to each other about the future and Climate Smart Dairy
 - What are people doing?
 - What's coming?
 - Where does Wisconsin fit in?
 - What are we good at?
 - Where are we behind?

<u>Academics</u>

- Michel Wattiaux, ADS
- John Lucey, Food Sci/CDR
- Frank Mitloehner, UC-Davis

Practioners

- Wade Miller, Organic Valley
- Jamie Fisher, Edge Dairy Coop
- Mark Crave, Crave Brothers

Presentations and Videos: <u>https://renk.aae.wisc.edu/2023-agricultural-outlook-forum/</u>

Re-Energization of Agricultural Conservation

Inflation Reduction Act

- \$18 Billion for ag conservation on working lands over 4 years
- EQIP \$8.45 Billion
- Regional Conservation
 Partnerships \$5 Billion
- Conservation Stewardship
 Program \$3.25 Billion
- Ag Conservation Easement
 Program: \$1.4 Billion

Wisconsin Initiatives

- Dairy Innovation Hub: Stewarding Land & Water Resources Priority
- New Extension specialist funding
- Producer-Led Watershed Groups
- Commercial Nitrogen
 Optimization Pilot Grants
- Crop Insurance Rebates for Planting Cover Crops



Discussion Questions

- Will climate smart agriculture become more interesting to consumers than organics?
- Will climate smart commodities erode the value of organics?
- How can organic agriculture respond to this?