New England Feeding New England

The 30 x 30 Goal and Dairy's Role in Regional Food Resilience

Northeast Dairy Innovation Summit | April 2, 2024

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NEW ENGLAND
FOOD SYSTEM
PLANNERS PARTNERSHIP

A Regional Approach to Food System Resilience

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Project Goal

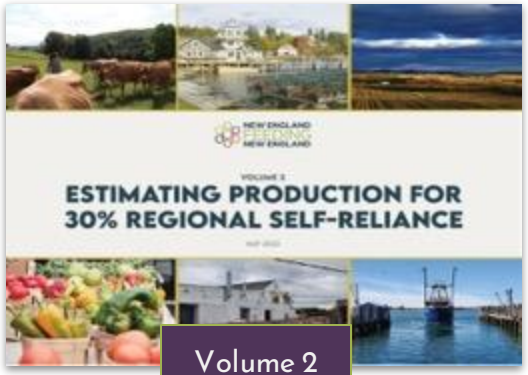
By 2030, 30% of the food consumed in New England is produced/harvested/caught within New England.

Our collective effort will focus on expanding and fortifying the region's food supply and distribution systems in an equitable and inclusive way that ensures the availability of adequate, affordable, socially and culturally appropriate products under a variety of rapidly changing climate, environmental, and public health conditions.

Reports

Volume 1

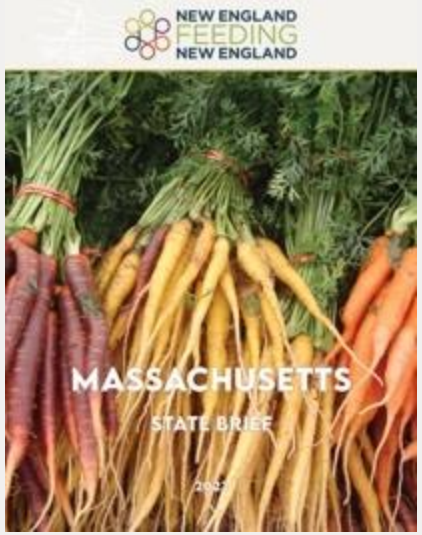
Volume 3

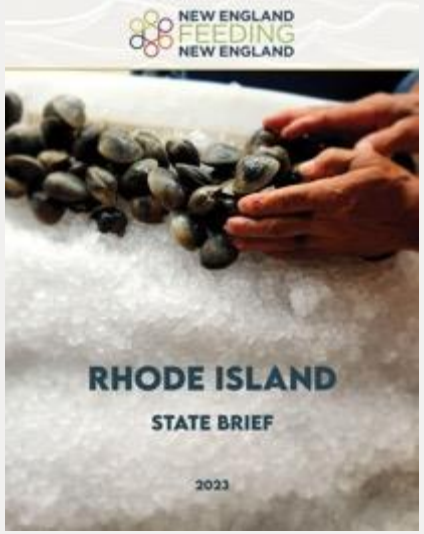


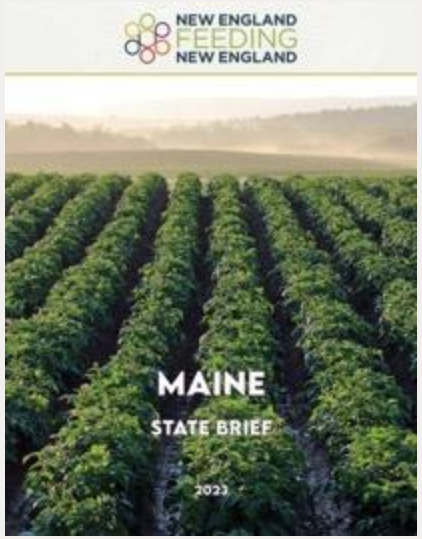
Volume 2

Volume 4

Plus Six State Briefs







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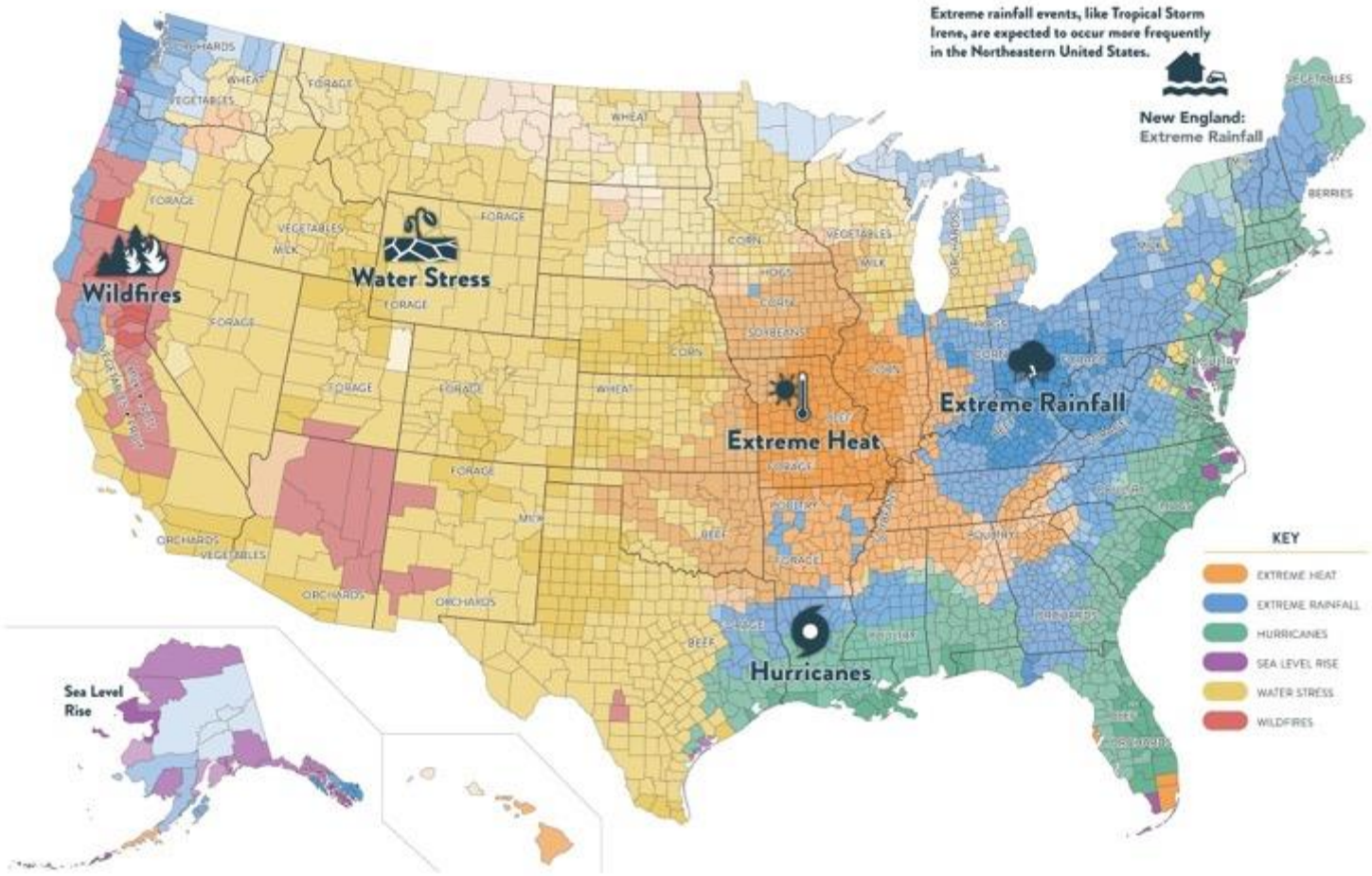
Major Climate Risk by US County

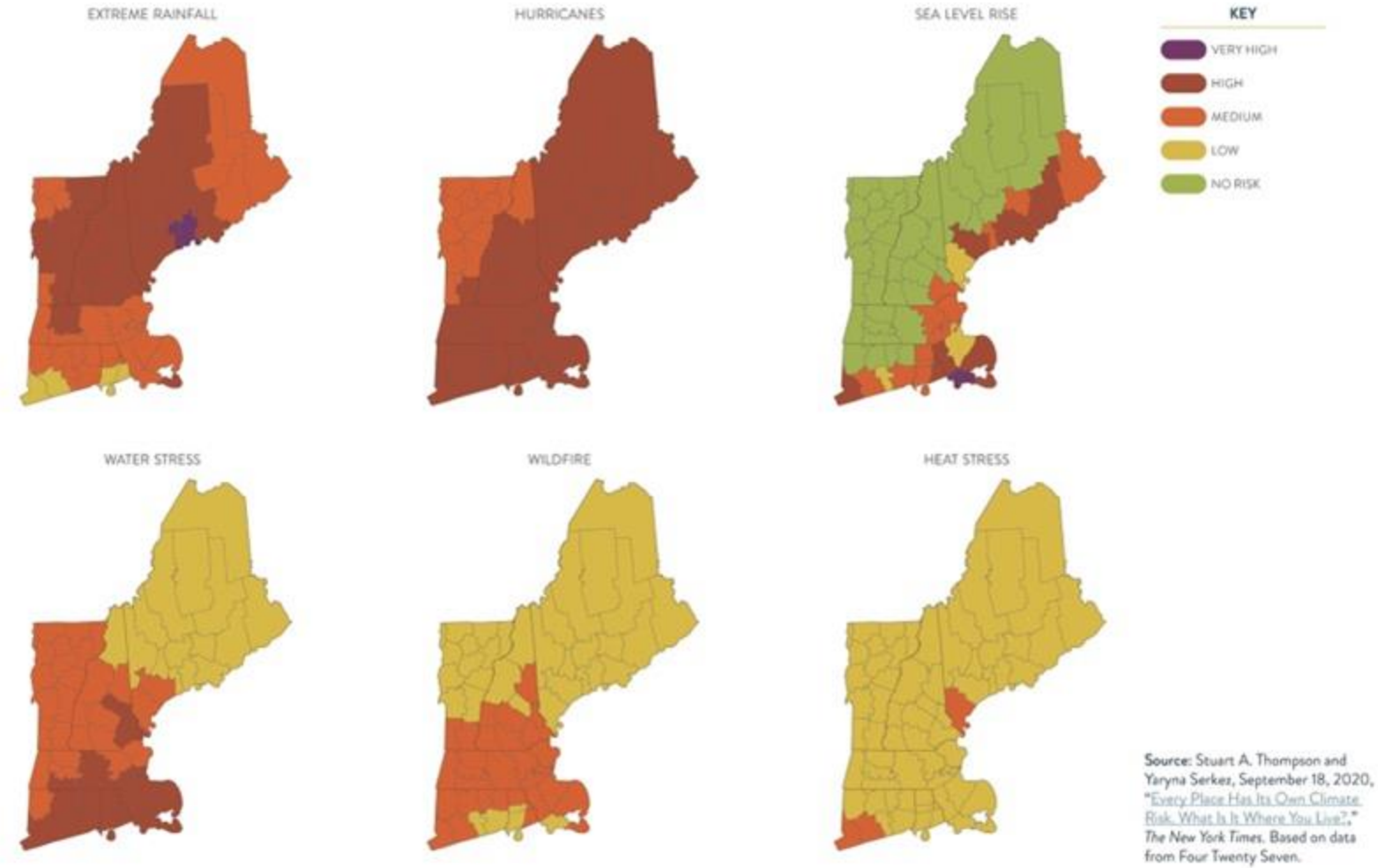
FIGURE 3: Major Climate Risk by U.S. County



Sources: Stuart A. Thompson and Yaryna Serkez, "Every Place Has Its Own Climate Risk. What Is It Where You Live?," *The New York Times*, https://www.nytimes.com/interactive/2020/09/18/opinion/wildfire-hurricane-climate.html. Based on data from Four Twenty Seven. Major agricultural products data based on USDA Ag Atlas Maps.

Preparing Our Food Supply for Climate Change

FIGURE 2: Projected Climate Change Risks by County



Source: Stuart A. Thompson and Yaryna Serkez, September 18, 2020, "Every Place Has Its Own Climate Risk. What Is It Where You Live?," *The New York Times*. Based on data from Four Twenty Seven.

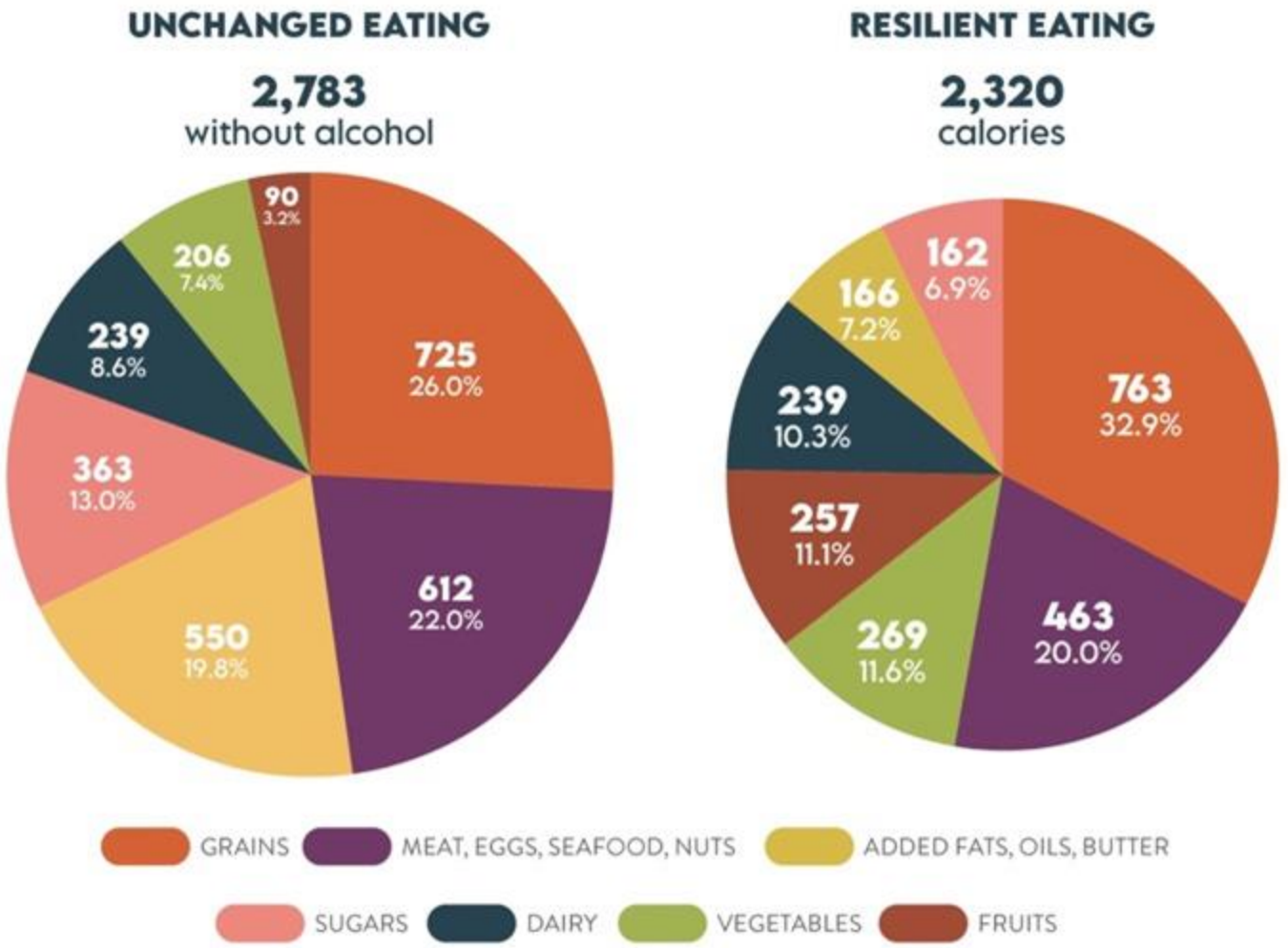
NEW ENGLAND FEEDING NEW ENGLAND

VOLUME 1

ESTIMATING RESILIENT EATING PATTERNS

MAY 2023

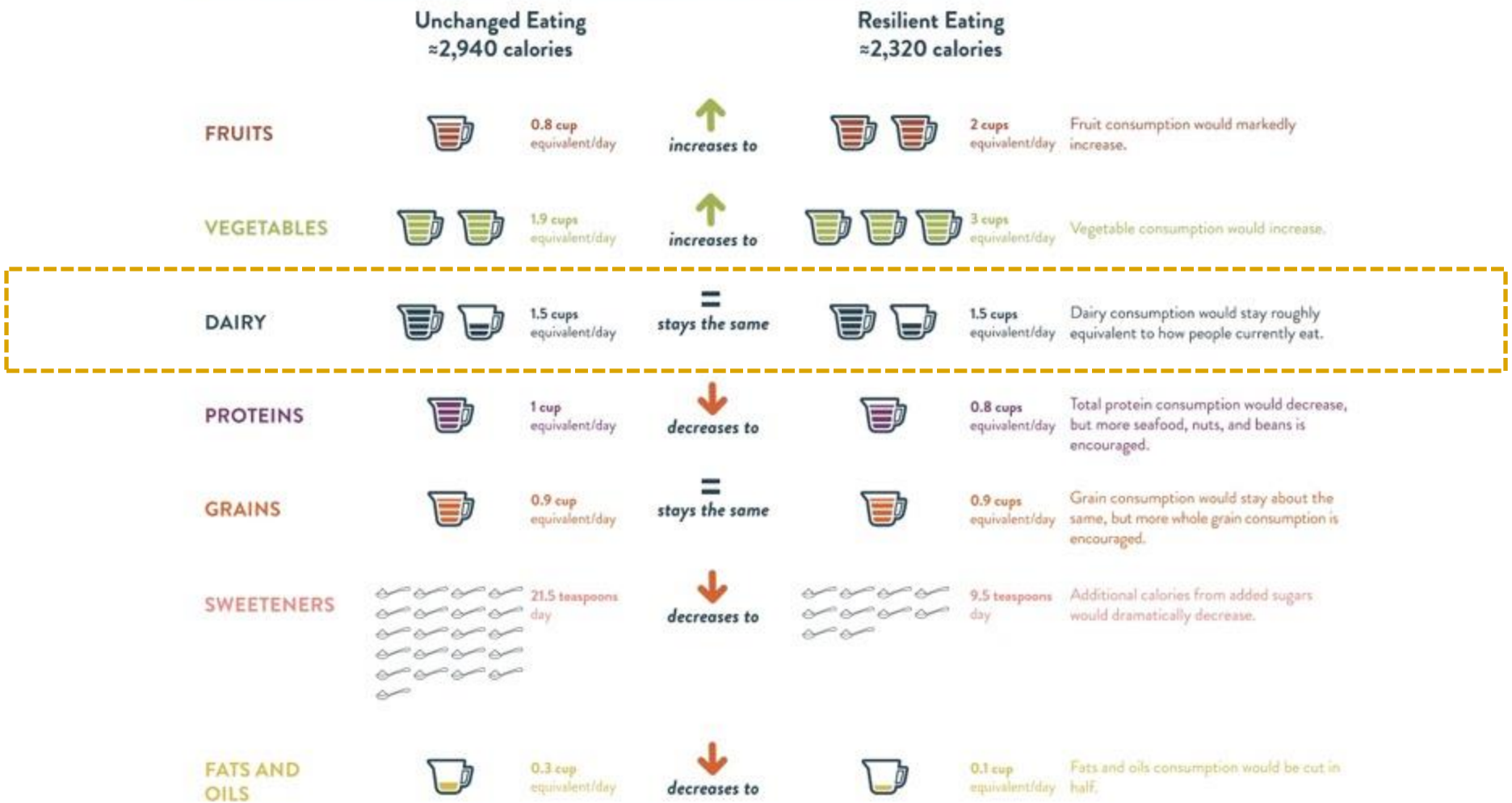
Dietary Patterns Scenarios: Unchanged & Resilient Eating



Unchanged Eating Source: USDA Loss-Adjusted Food Availability Data System.

Estimates of Shifts in Servings: Unchanged to Resilient Eating by 2030

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

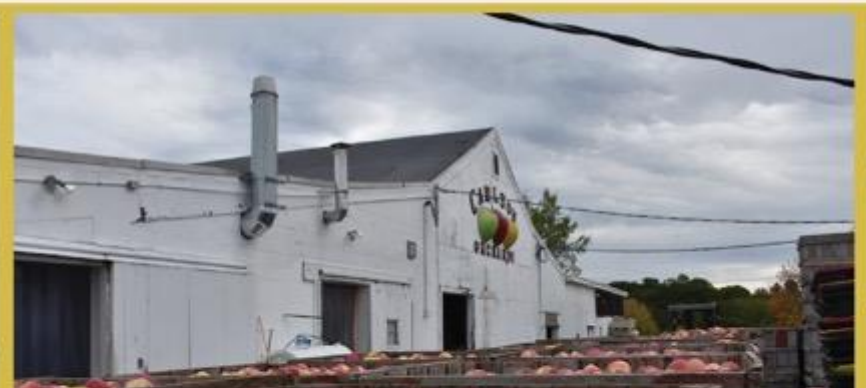
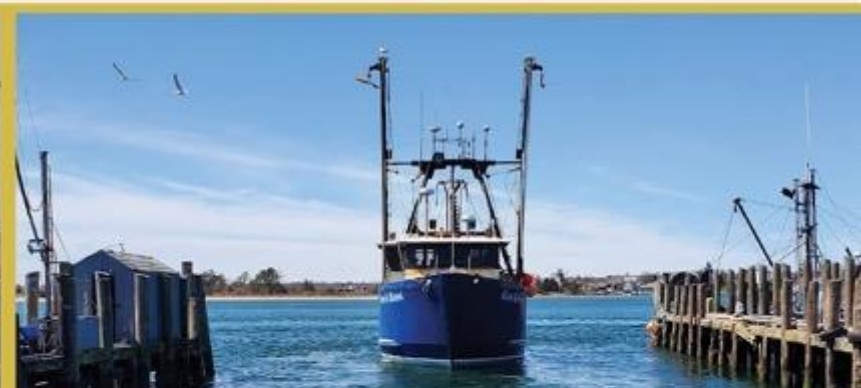


NEW ENGLAND FEEDING NEW ENGLAND

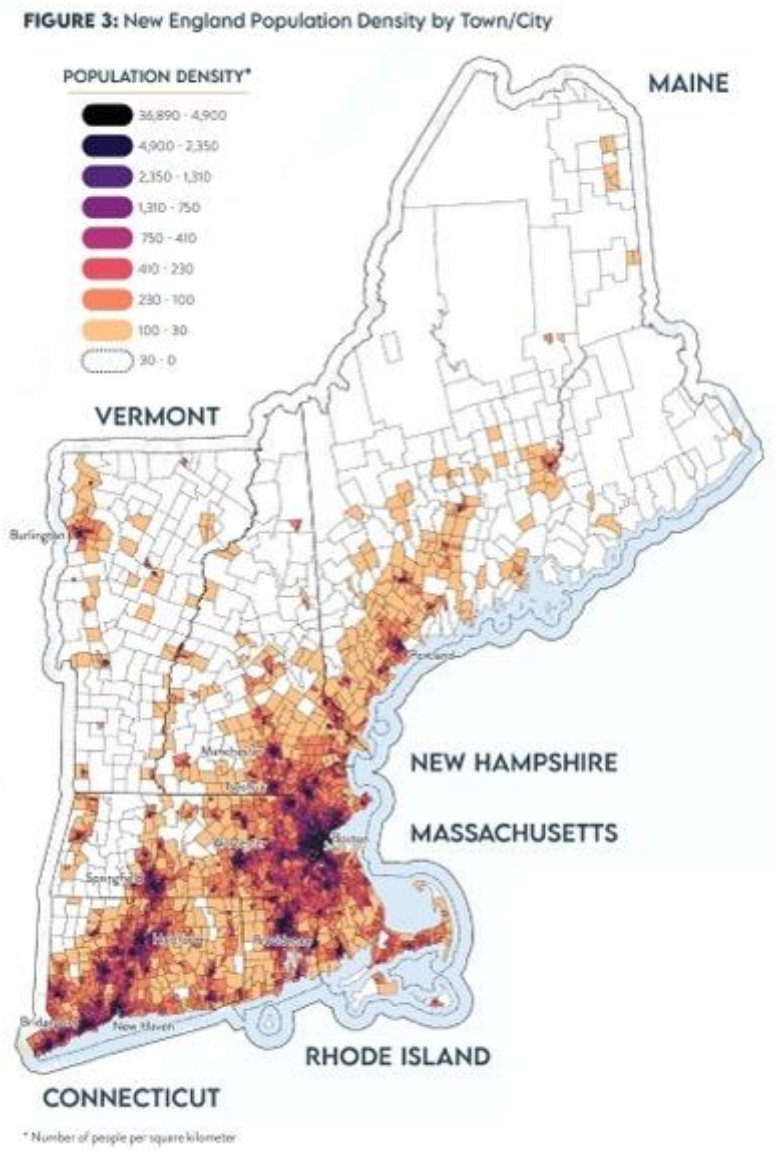
VOLUME 2

ESTIMATING PRODUCTION FOR 30% REGIONAL SELF-RELIANCE

MAY 2023

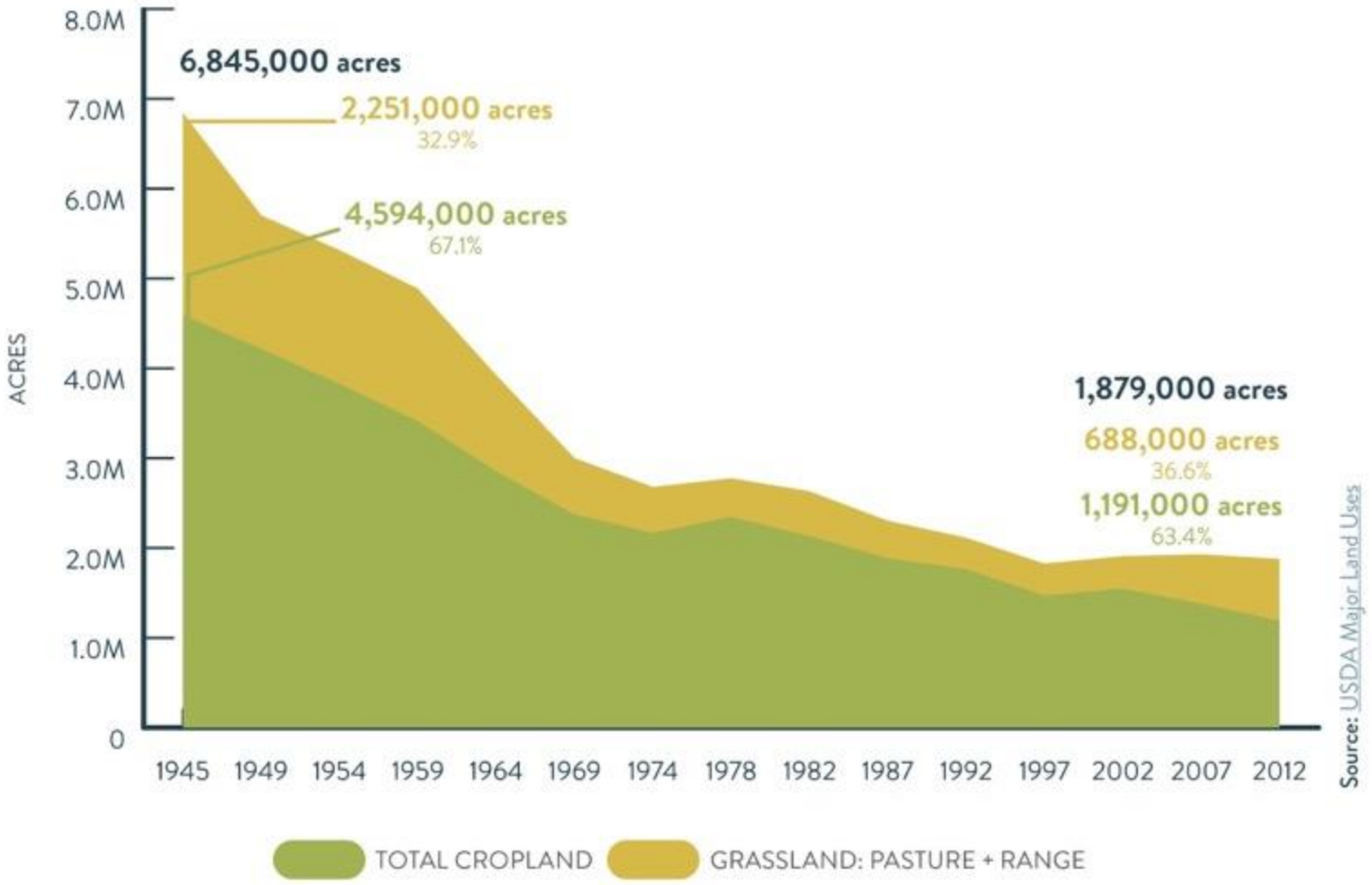



Population Density in New England



The Decline of Land in Agricultural Production in New England

FIGURE 4: Agricultural Land Use in New England, 1945-2012



Regional Self Reliance by Food Group in New England

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%**

RSR by Scenario, Servings, and Calories - 2020 (reference diet)

New England Regional Self-Reliance for Major Food Groups

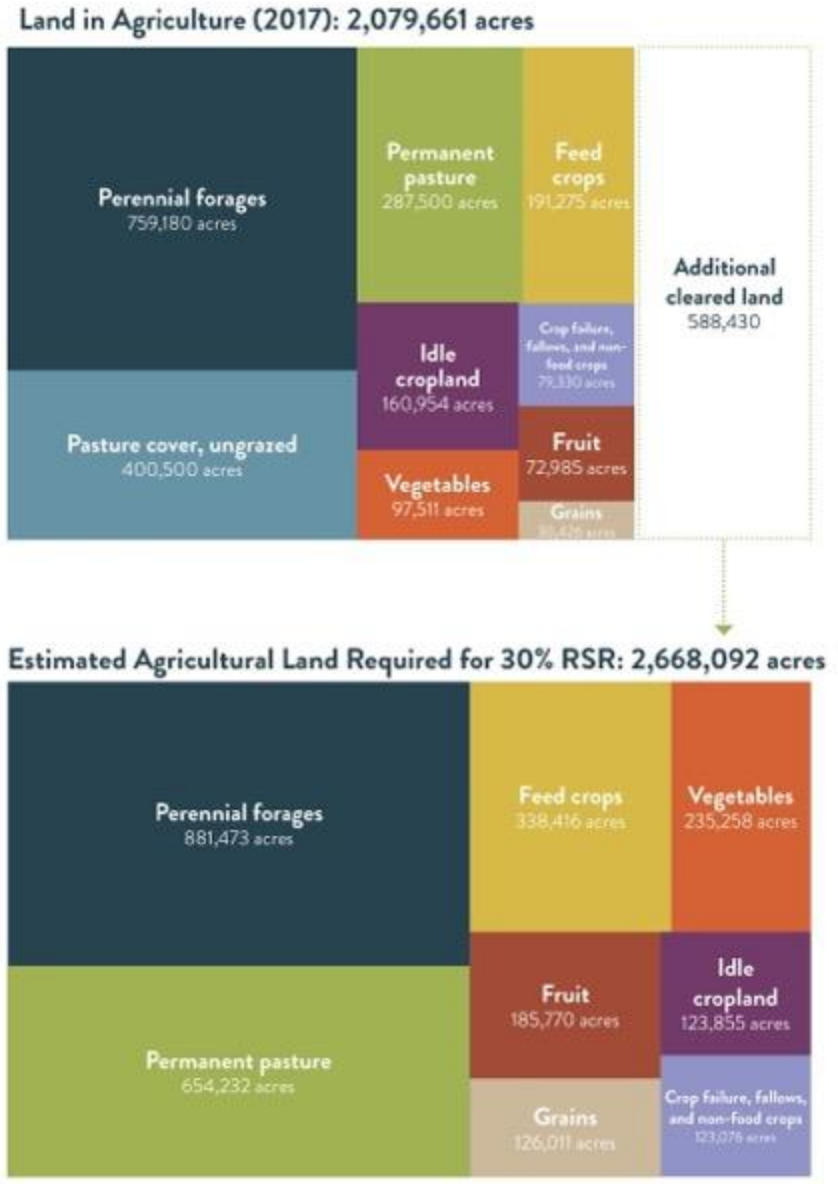
	GRAINS	VEGETABLES	FRUITS	DAIRY	PROTEINS
Servings	1.6%	28.3%	8.7%	50.0%	3.2%
Calories	1.7%	41.0%	6.9%	47.4%	2.6%

Source: Volume 2: Estimating Production for 30% Regional Self-Reliance. *Note: vegetables consists of a significant amount of calorie-dense potatoes grown in Maine; dairy includes a significant amount of production in Vermont.*

Additional Land Needed in Agricultural Production to Achieve 30% RSR

To achieve 30% regional production available for consumption (in servings) –

- **400,000** in existing underutilized cropland and
- **590,000** in new cropland would need to be brought into production.



What Does 2030 Resilient Eating Mean for New England Farms Production?

TABLE 3: Projected 2030 Farm Production and Employment Change

Sector	2017 Farm Production Sales*	2030 Projected Farm Production Sales		2030 Projected Change in Farm Sales		2030 Projected Change in Employment (Jobs)**	
		Unchanged Eating	Resilient Eating	Unchanged Eating	Resilient Eating	Unchanged Eating	Resilient Eating
Grain and Oilseed Farming	$56,195,000	$255,046,000	$265,036,000	454%	472%	607	631
Vegetable and Melon Farming	$468,142,000	$820,789,000	$1,131,506,000	175%	242%	348	480
Fruit Farming	$213,049,000	$316,914,000	$542,276,000	149%	255%	415	710
All Other Crop Farming	$232,768,000	$277,709,000	$290,948,000	119%	125%	964	1,010
Cattle Ranching	$110,329,000	$593,300,000	$649,170,000	538%	588%	1,007	1,102
Dairy Cattle and Milk Production	$652,362,000	$676,882,000	$682,224,000	104%	105%	83	84
All Other Animal Production	$199,019,000	$607,977,000	$864,806,000	305%	435%	677	962
Poultry and Egg Production	$71,975,000	$358,467,000	$519,524,000	498%	722%	278	403
Support for Crop Production	$50,693,000	$87,286,000	$200,615,000	172%	396%	685	1,574
Support for Animal Production	$68,345,000	$147,881,000	$388,516,000	216%	568%	861	2,262
TOTAL	**$2,122,876,000**	**$4,142,252,000**	**$5,534,621,000**	**195%**	**261%**	**5,924**	**9,217**

* Table A1, page 57.

** Table 7, page 22.

Projected Agricultural Land Conversion in New England

Business as Usual Scenario

AFT Business as Usual scenario, across all 6 states, -267,100 in ag land conversion by 2040 is projected based on current trends.

At a time when we need to bring almost 1 million more acres into production to achieve the 30% goal.

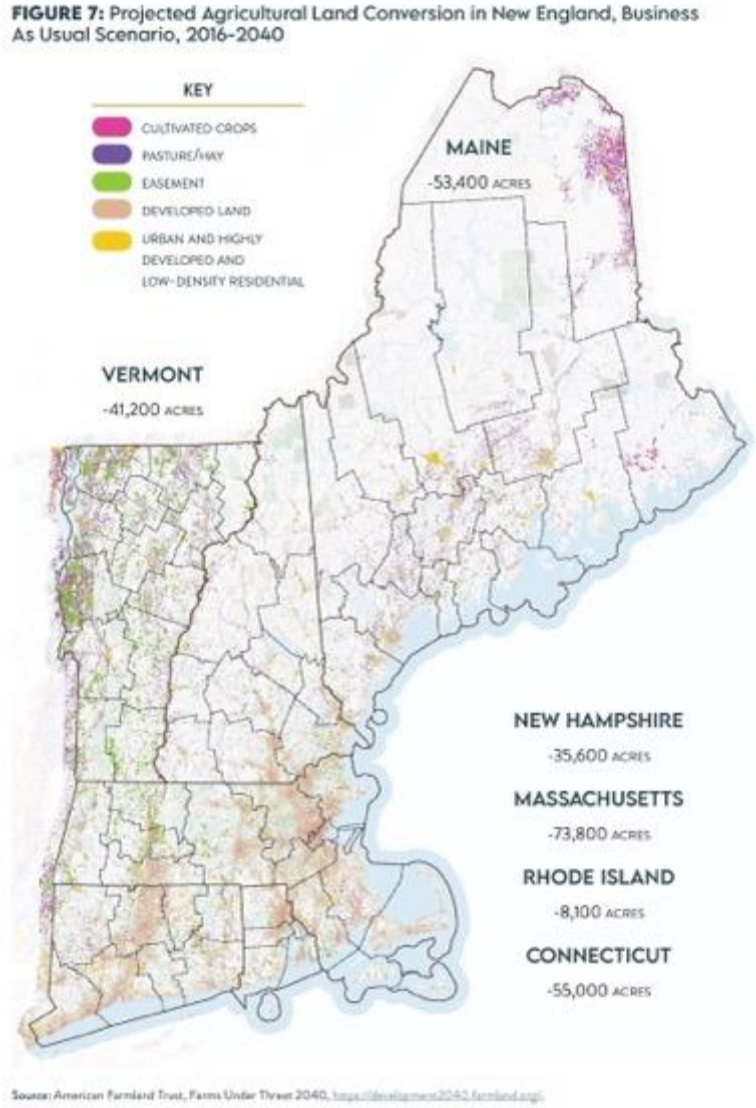
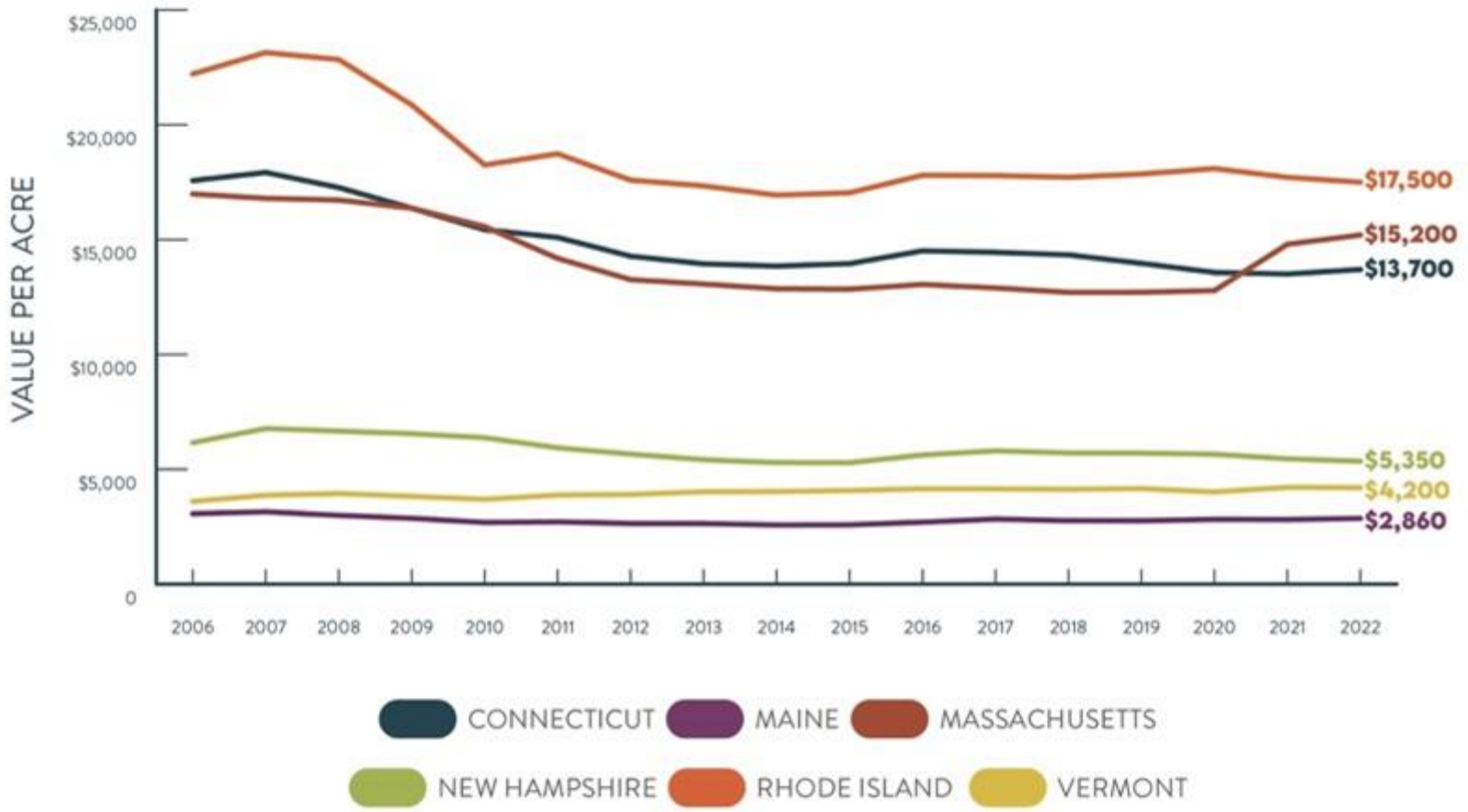


FIGURE 7: Projected Agricultural Land Conversion in New England, Business As Usual Scenario, 2016-2040

Source: American Farmland Trust, Farms Under Threat 2040,

New England Farm Land Values

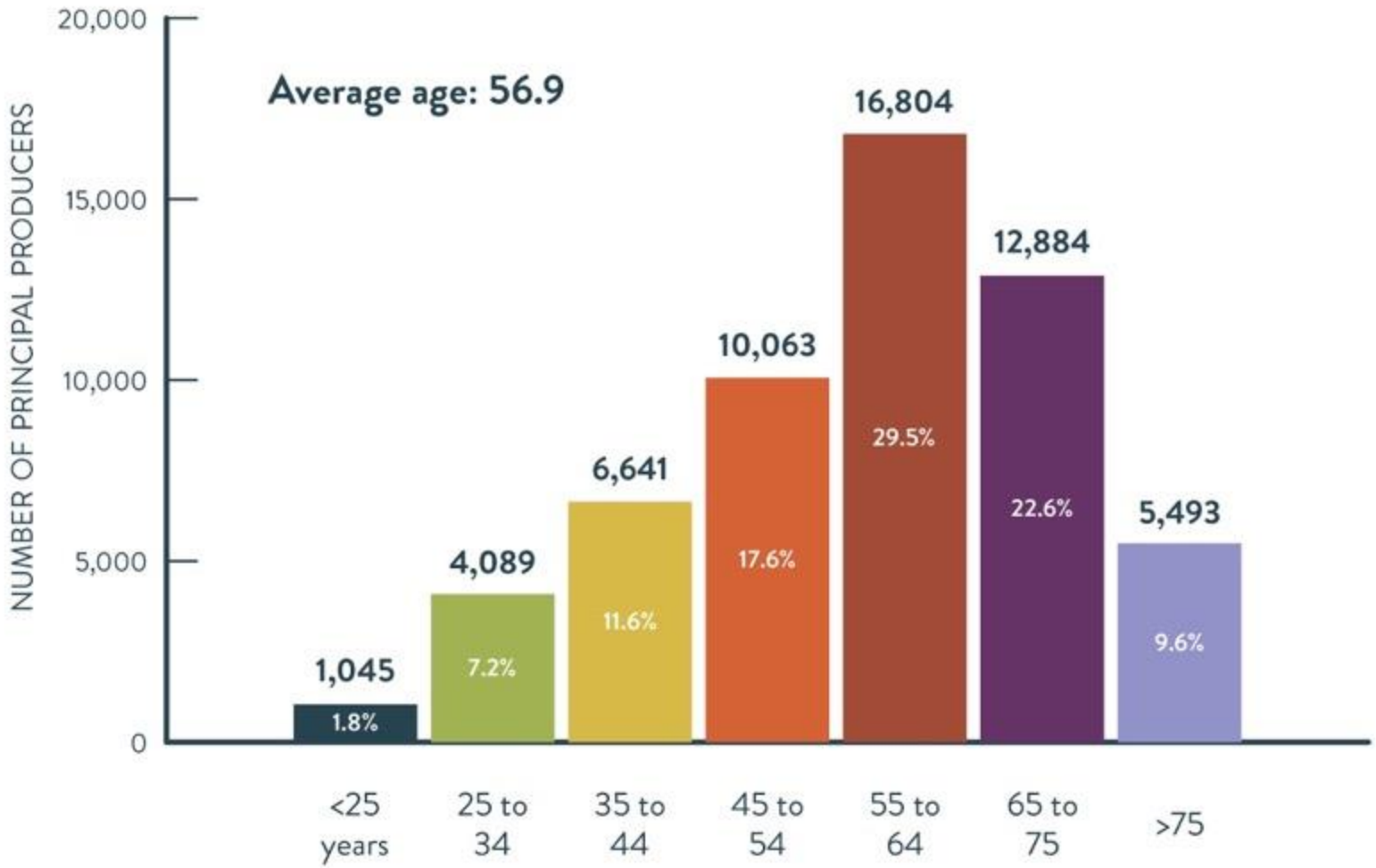
FIGURE 9: New England Farm Land Values



Source: USDA National Agricultural Statistics Service, August 2022, Land Values 2022 Summary, https://www.nass.usda.gov/Publications/Todays_Reports/reports/land0822.pdf. Reported in 2022 dollars.

New England Farmer Age Demographics

FIGURE 10: New England Farmer Age Demographics, 2017



NEW ENGLAND FEEDING NEW ENGLAND

VOLUME 4

UNDERSTANDING MARKET CHANNELS AND FOOD EXPENDITURES

MAY 2023

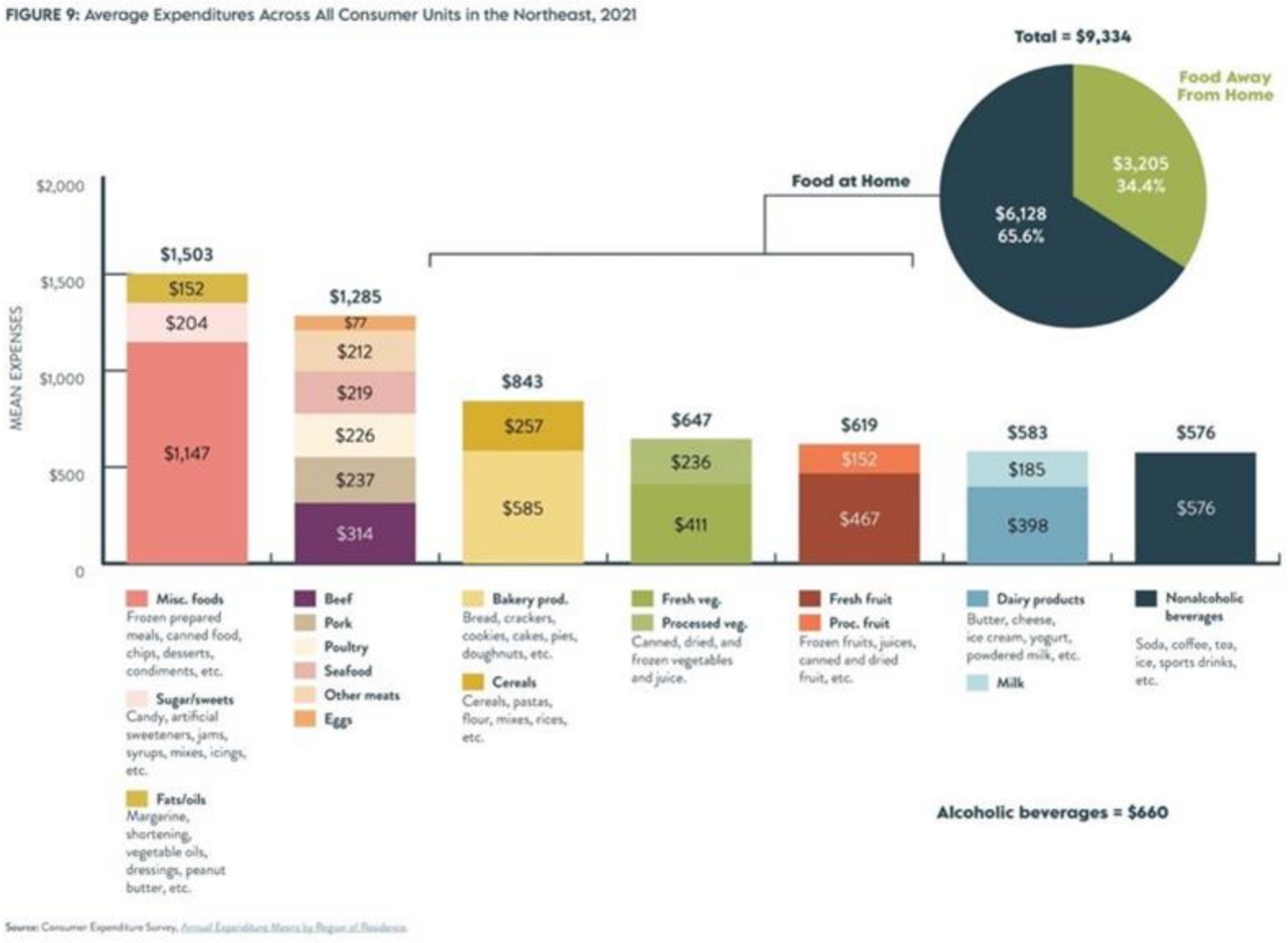
Consumer Spending: Total Annual Expenditures by Category (%)

TABLE 7: Percent Distribution of Total Annual Expenditures by Major Category for All Consumer Units, 2018-2021

Category	2018	2019	2020	2021
Average annual expenditures	100%	100%	100%	100%
Housing	32.8%	32.8%	34.9%	33.8%
Transportation	15.9%	17.0%	16.0%	16.4%
Food	**12.9%**	**13.0%**	**11.9%**	**12.4%**
Personal Insurance and Pensions	11.9%	11.4%	11.8%	11.8%
Healthcare	8.1%	8.2%	8.4%	8.1%
Entertainment	5.3%	4.9%	4.7%	5.3%
Cash Contributions	3.1%	3.2%	3.7%	3.6%
Apparel and Services	3.0%	3.0%	2.3%	2.6%
Education	2.3%	2.3%	2.1%	1.8%
Miscellaneous	1.6%	1.4%	1.5%	1.5%
Personal Care Products and Services	1.3%	1.2%	1.1%	1.2%
Alcoholic Beverages	**1.0%**	**0.9%**	**0.8%**	**0.8%**
Tobacco Products and Supplies	0.6%	0.5%	0.5%	0.5%
Reading	0.2%	0.1%	0.2%	0.2%

Source: U.S. Bureau of Labor Statistics, Consumer Expenditure Surveys, multiple years, https://www.bls.gov/cex/tables.htm.

Average Expenditures Across All Consumers in Northeast



Dairy Detail

Estimates of New England Food Expenditures

Currently, total food and beverage expenditures in New England range between $55.2 billion and $87.1 billion. By 2030, food and beverage expenditures are estimated to reach $98.4 billion.

New England would have to spend between $16.6 billion and $26.1 billion to reach 30% of expenditures, depending on the data source, and $29.5 billion by 2030.

Estimating 30% Regional Food Expenditures

*On a **per capita basis**, the average New Englander would currently have to spend between $1,152 and $1,760 on regional food and beverage products per year to reach 30%. By 2030, that amount would increase to $1,890.*

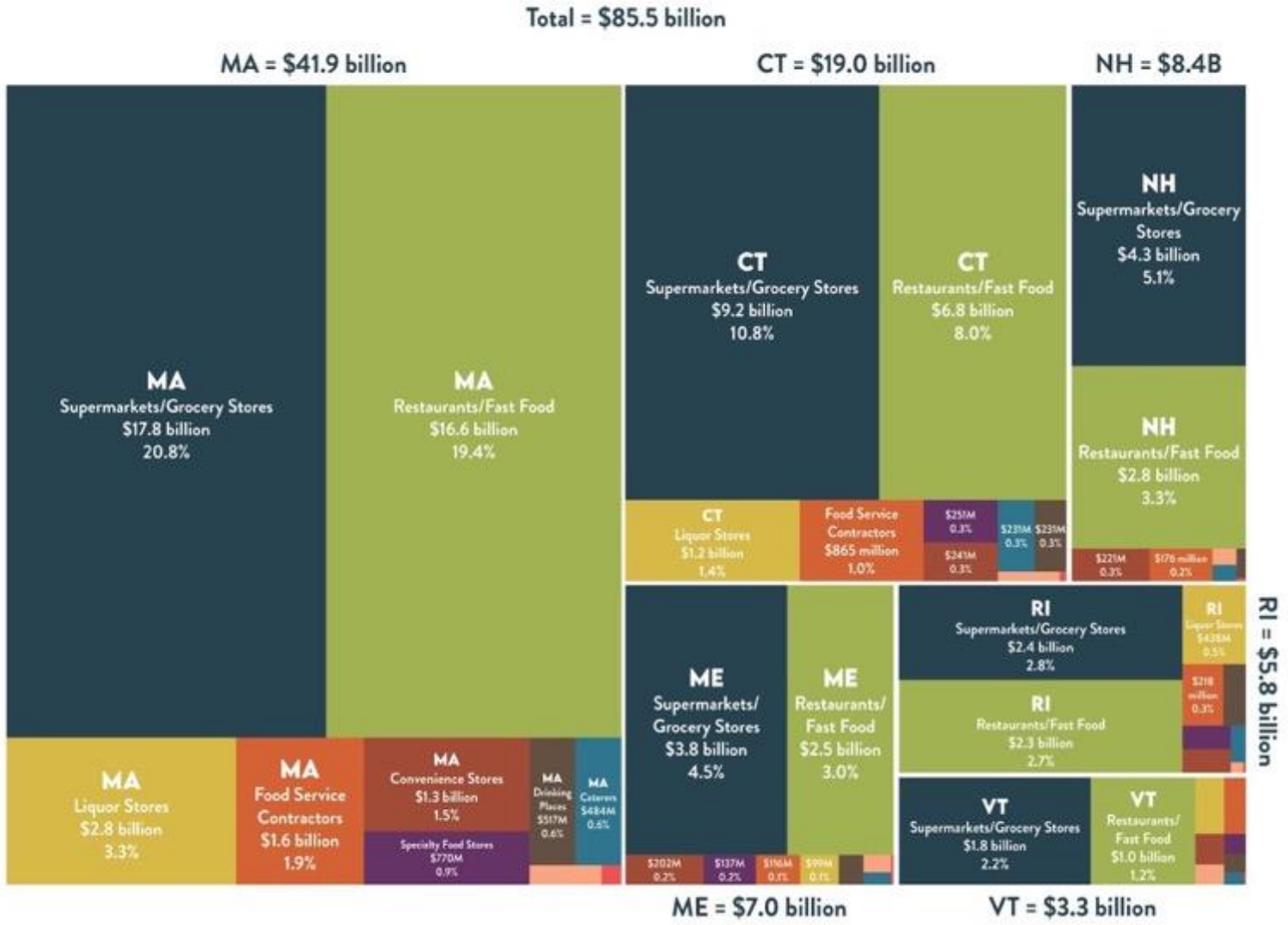
	LOW ESTIMATE		HIGH ESTIMATE		2030 ESTIMATE
30% PER CAPITA	$1,152	——	$1,760	→	$1,890

*Given the relative size of its population, **Massachusetts** would have to do the heavy lifting for the region, spending between $7.6 billion and $12.1 billion to reach 30% currently, and $13.2 billion by 2030.*

	LOW ESTIMATE		HIGH ESTIMATE		2030 ESTIMATE
30% OF TOTAL	$7.6 billion	——	$12.1 billion	→	$13.2 billion

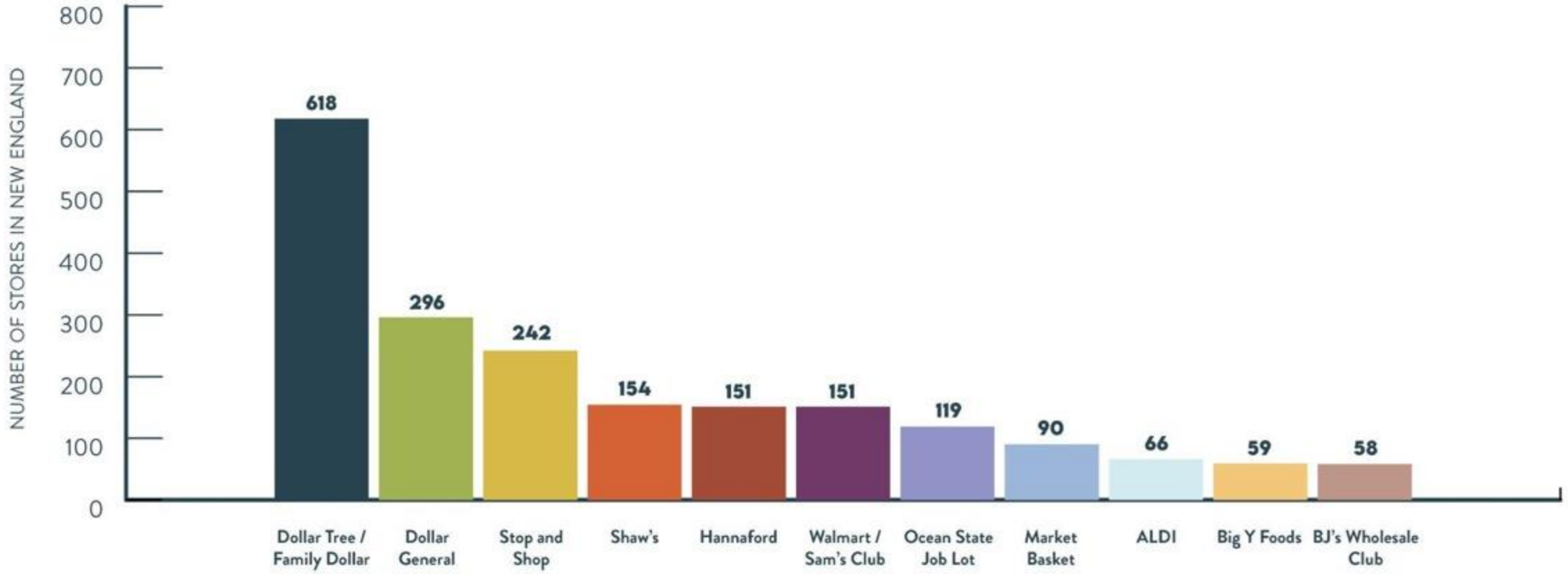
Retail Food Sales by State in New England

FIGURE 2: New England Retail Food Sales by State, 2017



Top 10 Grocery Stores in New England by Number of Stores

FIGURE 16: Top 10 Grocery Stores in New England by Number of Stores



Market Channels for Food and Alcohol

TABLE 1: Food and Alcohol Expenditures, Without Taxes and Tips, For All Purchasers, 2019-2021

	Market Channel	2019	2020	2021	2021 % of Total	2021 % of FAH
Food at Home (FAH)	Grocery Stores	$461,212,629,764	$501,885,406,250	$492,298,903,613	22.7%	46.4%
	Warehouse Clubs and Supercenters	$195,427,087,639	$200,630,093,750	$209,981,341,050	9.7%	19.8%
	Other Stores and Food Service	$79,605,724,459	$73,734,429,688	$86,059,155,555	4.0%	8.1%
	Home Delivery	$58,090,889,411	$70,857,726,563	$79,925,272,115	3.7%	7.5%
	Other Food Stores	$18,153,720,532	$18,315,419,922	$19,520,414,731	0.9%	1.8%
	Convenience Stores	$13,627,849,209	$12,816,013,672	$14,014,409,410	0.7%	1.3%
	Direct Sales	$7,633,686,112	$7,631,449,219	$8,183,316,429	0.4%	0.8%
	Home Production and Donations	$2,160,322,619	$2,297,550,781	$2,693,022,682	0.1%	0.3%
FAH - Alcohol	Liquor Stores	$52,673,384,619	$60,573,074,219	$61,218,809,151	2.7%	5.5%
	Food Stores	$35,213,943,279	$37,629,699,219	$37,372,821,751	1.6%	3.3%
	Other Alcohol Sales (Not Elsewhere Classified)	$47,594,546,045	$49,195,609,375	$56,859,400,331	2.5%	5.1%
	TOTAL FAH	**$971,393,779,981**	**$1,035,566,437,500**	**$1,068,126,873,814**	**47.3%**	**100.0%**
Food Away From Home (FAFH)	Limited-Service Restaurants	$363,964,547,353	$347,489,843,750	$395,526,033,924	17.3%	33.8%
	Full-Service Restaurants	$362,997,987,117	$270,811,093,750	$390,862,353,450	14.7%	28.8%
	Retail Stores and Vending	$123,584,136,079	$126,640,218,750	$132,282,270,537	5.8%	11.3%
	Food Donated	$48,033,686,695	$45,880,082,031	$60,063,973,739	2.8%	5.5%
	Schools and Colleges	$70,393,111,206	$66,510,289,063	$43,105,092,575	2.0%	4.0%
	Hotels and Motels	$39,113,322,435	$22,822,457,031	$35,022,069,236	1.3%	2.6%
	Other FAFH (Not Elsewhere Classified)	$24,963,955,643	$18,830,357,422	$26,449,929,017	1.2%	2.2%
	Recreational Places	$33,213,917,625	$19,381,875,000	$26,219,815,953	1.1%	2.2%
	Drinking Places	$6,375,154,189	$3,786,534,668	$5,399,179,772	0.2%	0.4%
FAFH - Alcohol	Eating and Drinking Places	$100,941,553,835	$72,113,632,813	$102,805,688,661	3.9%	7.6%
	Hotels and Motels	$11,121,512,773	$6,483,643,066	$9,935,467,734	0.4%	0.7%
	Other Alchol (Not Elsewhere Classified)	$10,412,870,064	$7,453,177,734	$9,694,834,272	0.4%	0.8%
	TOTAL FAFH	**$1,195,115,785,167**	**$1,008,203,203,125**	**$1,237,366,668,295**	**51.2%**	**100.0%**
	TOTAL FOOD AND ALCOHOL EXPENDITURES	**$2,166,509,565,148**	**$2,043,769,640,625**	**$2,305,493,542,109**	**100.0%**	

Source: USDA Economic Research Service, *Food Expenditure Series*, https://www.ers.usda.gov/data-products/food-expenditure-series/.

Institutions in New England

TABLE 16: Number of Institutions in New England

State	K-12 Public	K-12 Private	Early Childhood Sites	Colleges/ Universities	Hospitals	Jails	Prisons	Total
Connecticut	1,022	315	3,219	28	41	Unified system	14	4,639
Maine	599	152	1,566	24	40	13	7	2,401
Massachusetts	1,852	657	7,577	84	120	17	17	10,324
New Hampshire	494	209	unclear	20	32	10	4	769
Rhode Island	320	112	549	11	14	Unified system	7	1,013
Vermont	312	112	1111	15	23	Unified system	6	1,579
New England	**4,599**	**1,557**	**14,022**	**182**	**270**	**40**	**55**	**20,725**

Top 20 Local Items Purchased in School Nutrition Programs

TABLE 24: Top 20 Local Items Purchased in School Nutrition Programs by Reported Spending Level[a]

Program Metrics	New England	MA	CT	ME	NH	RI	VT
Apples	87%	85%	88%	92%	81%	87%	92%
Fluid milk	30%	26%	27%	39%	19%	33%	38%
Tomatoes	28%	32%	29%	27%	15%	31%	14%
Lettuce	22%	27%	18%	19%	31%	8%	19%
Potatoes[b]	22%	15%	13%	29%	15%	36%	22%
Carrots	19%	20%	11%	29%	35%	3%	19%
Cucumbers	19%	23%	22%	13%	19%	13%	11%
Squash	16%	16%	19%	11%	15%	28%	8%
Corn	14%	11%	17%	14%	8%	33%	8%
Other	11%	7%	9%	14%	23%	13%	24%
Bell peppers	11%	11%	16%	9%	4%	10%	11%
Broccoli	11%	10%	10%	12%	12%	13%	8%
Pears	10%	12%	24%	3%	–	3%	–
Kale	8%	14%	3%	1%	4%	8%	5%
Blueberries	7%	3%	1%	27%	4%	3%	–
Peaches	6%	6%	11%	2%	4%	15%	–
Salad mix	6%	8%	3%	4%	12%	8%	5%
Strawberries	6%	7%	8%	7%	4%	3%	–
Beef	5%	3%	–	8%	12%	–	30%
Zucchini	5%	5%	1%	4%	–	5%	5%

USDA Child Nutrition Program Data by State (2022)

Table 4. Estimated K-12 FY22 fluid milk volume served (95% CI[a]) in millions of gallons

STATE	NSLP	SBP	CACFP	SFSP	SMP[b]	TOTAL[c]
CT	1.70 (±0.01)	0.81 (±0.01)	0.27 (±0.00)	0.04 (±0.00)	0.014	2.83 (±0.01)
ME	0.54 (±0.00)	0.32 (±0.00)	0.15 (±0.00)	0.02 (±0.00)	0.0003	1.04 (±0.00)
MA	2.99 (±0.02)	1.33 (±0.01)	0.88 (±0.01)	0.10 (±0.00)	0.013	5.32 (±0.02)
NH	0.48 (±0.00)	0.23 (±0.00)	0.09 (±0.00)	0.01 (±0.00)	0.013	0.82 (±0.00)
RI	0.42 (±0.00)	0.21 (±0.00)	0.12 (±0.00)	0.01 (±0.00)	0.005	0.76 (±0.00)
VT	0.26 (±0.00)	0.17 (±0.00)	0.08 (±0.00)	0.02 (±0.00)	0.004	0.54 (±0.00)
TOTAL[c]	6.39 (±0.02)	3.07 (±0.01)	1.59 (±0.01)	0.21 (±0.00)	0.05	11.31 (±0.02)

Table 5. Reported K-12 spending on local foods in 2019 Farm to School Census

	VT	MA	ME	RI	NH	CT	NE
Total Local Food Spending (000s)	$1,440	$11,470	$3,620	$3,530	$520	$8,890	$29,470
Local Fluid Milk Spending (000s)	$470	$6,570	$2,480	$1,710	$200	$5,080	$16,520
Fluid Milk % of Total	33%	57%	69%	49%	39%	57%	56%

New England Farms with Direct and Intermediary Sales

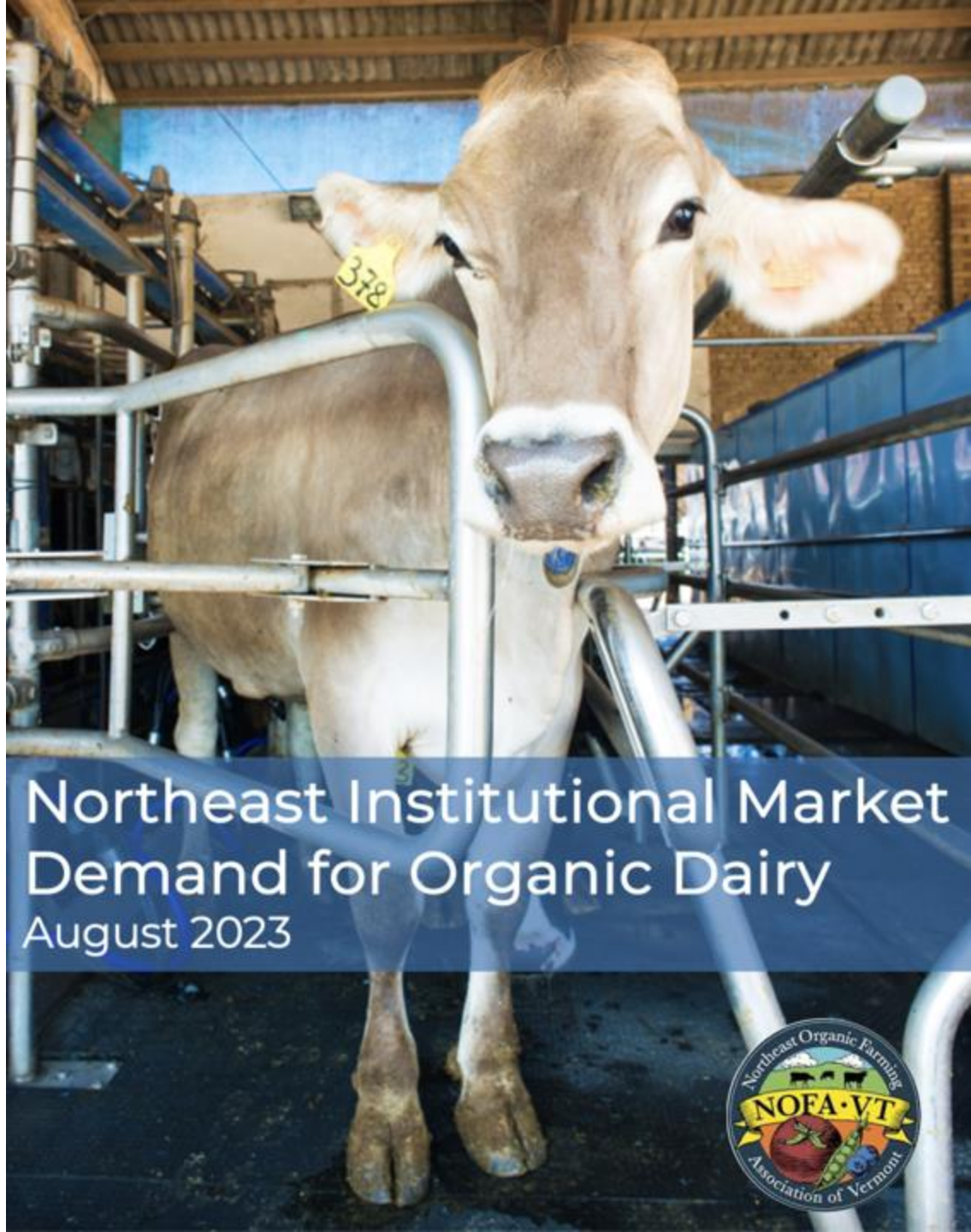
TABLE 29: Number of New England Farming Operations With Direct and Intermediated Sales by Category

NAICS Code	Category	Total Operations with Sales	Operations with DTC Sales	Percent of Total Operations	DTC Sales	Percent of Total Sales	Operations with Inter. Sales	Percent of Total Operations	Intermed. Sales	Percent of Total Sales
	TOTAL AGRICULTURE	32,336	8,422	26%	$277,673,000	10%	2,798	9%	$218,215,000	8%
1112	Vegetables and melons	3,295	1,989	60%	$100,160,000	24%	836	25%	$88,296,000	21%
1113	Fruits and Tree Nuts	2,669	1,078	40%	$64,870,000	33%	356	13%	$19,689,000	10%
11212	Dairy Cattle and Milk Production	1,421	231	16%	$26,345,000	3%	127	9%	$33,670,000	4%
1114	Greenhouse and Nursery	3,494	665	19%	$13,979,000	2%	213	6%	$12,870,000	2%
1125	Aquaculture + Other Animal Prod.	5,922	726	12%	$11,097,000	6%	266	4%	$14,699,000	8%
1123	Poultry and Egg Prod.	962	454	47%	$7,112,000	16%	112	12%	$13,803,000	32%
112111	Beef Cattle	3,474	745	21%	$8,075,000	20%	118	3%	$2,873,000	7%
1124	Sheep + Goat	2,217	575	26%	$4,020,000	28%	141	6%	$6,599,000	45%
1122	Hogs + Pigs	520	217	42%	$1,354,000	45%	45	9%	$190,000	6%
1111	Oilseed + Grain	264	39	15%	$76,000	0.6%	10	4%	not disclosed	n/a

Source: USDA 2017 Census of Agriculture, https://www.nass.usda.gov/AgCensus/.

Northeast Institutional Demand for Organic Dairy

- Project funded by the Northeast Dairy Business Innovation Center
- Northeast Organic Farming Association of Vermont (NOFA-VT) and the Northeast Organic Dairy Producers Alliance (NODPA)
- To determine how to increase and meet demand for organic dairy products across the region including a pilot project
- K-12 private/public, higher education and healthcare
- 114 survey responses and 20+ interviews with industry, orgs, buyers, government and others



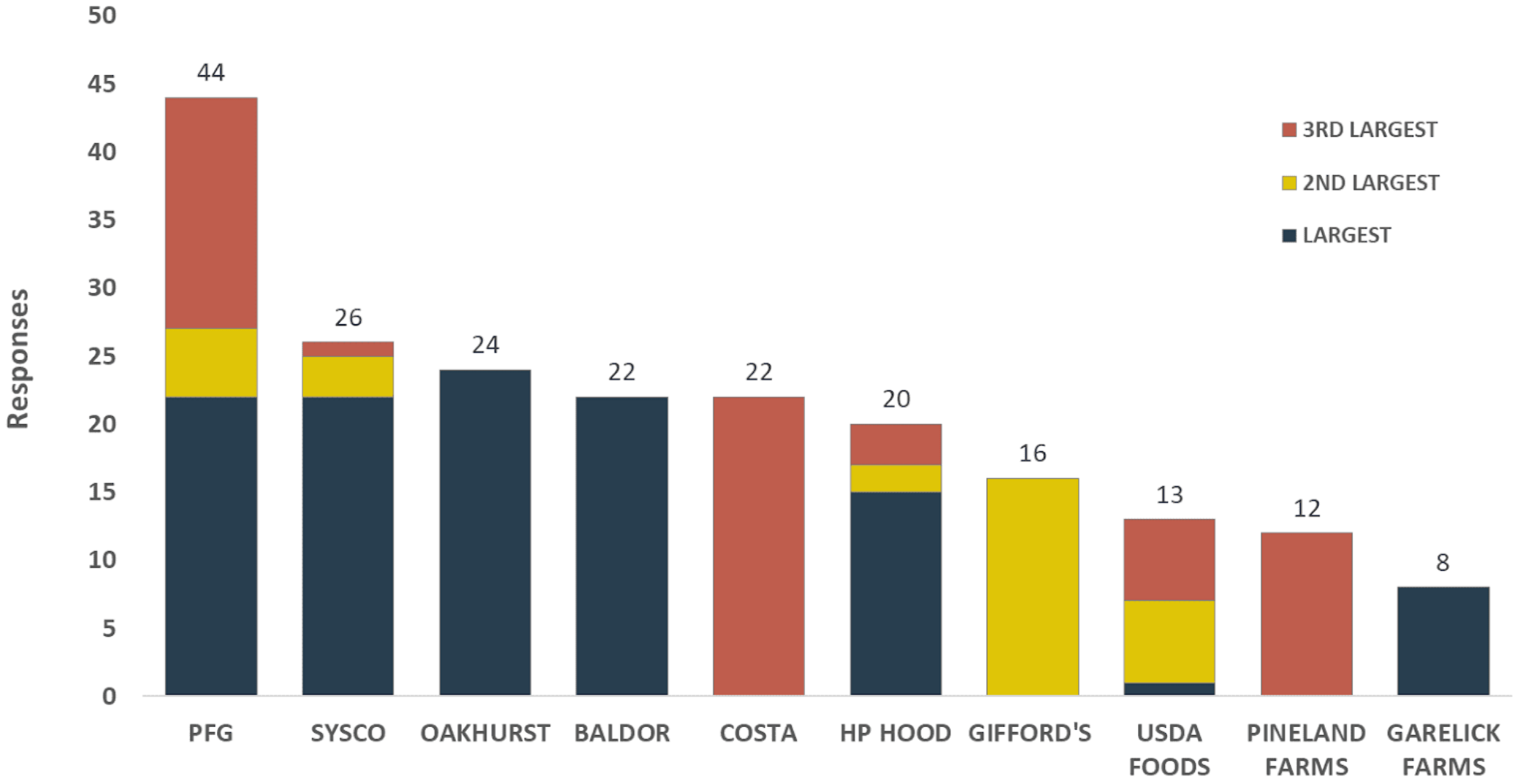
Research Overview

- Fluid milk, yogurt and cheese
- Pricing
- Volume demand (including seasonality)
- Product specifications (including packaging)
- Distribution and vendors
- Service-equipment (e.g., bulk fluid milk dispensers)
- Values-based procurement criteria (e.g., environmental sustainability, fair labor practices)

Current Annual Purchasing

Institution	Fluid Milk	Cheese	Yogurt
K-12 Schools *per student*	6.1 (±0.9) gallons	5.5 pounds	6.7 pounds
Colleges & Universities *per student*	12.6 (±9.8) gallons	7.8 pounds	3.3 pounds
Healthcare *per staffed bed*	51.1 (±0.7) gallons	79.6 pounds	56.1 pounds

Top Ten Vendors by Volume



Future Opportunities

- Decision Drivers: Taste (83% - "very important"), followed closely by price (67%), animal welfare practices (61%) and local production (53%).
- Barriers: Availability of organic dairy through the institution's current vendor, then product price point or organizational budget.
- Future Likelihood to Purchase Organic Dairy: All sectors expressed strong likelihood for purchasing organic **yogurt**, followed by cheese, and then fluid milk.
- Funding: Private philanthropy, federal and state incentives

Food Vision Prize

Hanging by a Shred: Supporting Regional Dairy Farms through Cheese Production

→

Pilot Project: Miller Farm

Thank you.

Want to learn more from these studies?

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