



**NEW ENGLAND  
FEEDING  
NEW ENGLAND**



# **VERMONT**

## **STATE BRIEF**

**2023**



**As more frequent and intense climate change disasters imperil food supplies around the world, where our food comes from matters more than ever.**

A [regional approach to food system resilience](#) is both an *investment* in our shared future and an *insurance policy* against future risks. A regional approach to food system resilience means that we work collectively to adapt, expand, and fortify New England’s food production and distribution systems to ensure the availability of adequate, affordable, and culturally appropriate food for all who call New England home.

**Can the six New England states provide 30% of their food from regional farms and fisheries by 2030?**

New England Feeding New England explores this question and what it will really take to grow, raise, produce, harvest, and catch more regional food and move it through a complex supply chain to our homes and other places where we eat. Our research presents an opportunity for the region: [significant changes in diet](#) (e.g., dramatically reducing consumption of ultra-processed foods and increasing fruit and vegetable consumption), a [significant increase in land in agriculture](#), [stopping the decrease in farmers and fishermen](#), and finding a way to [actually get local/regional food in the places people shop](#) are daunting challenges, but addressing them will leave our food system stronger and more resilient.








Through 7 research Volumes, New England Feeding New England lays out the case for a regional approach to food system resilience.

» <https://nefoodsystemplanners.org/>

## How self-reliant is our region?

[New England Feeding New England Volume 2](#) estimates regional food self-reliance (RSR)—how much food we produce compared to how much food we consume—for the five major food groups. RSR percentages varied widely from food product to food product, showing a rather lopsided capacity for self-reliance. A small number of foods were produced in large quantities relative to consumption and had self-reliance ratios near or exceeding 100% (e.g., dairy, maple syrup, potatoes, lobster, clams). Most foods, however, had self-reliance ratios of less than 10% (e.g., beef, lettuce, wheat).

### » 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.

## What can each New England state do to increase food security and access while building resilience for the whole region?

What strengths does Vermont’s food system possess and what opportunities can be pursued? What weaknesses persist and what threats loom?

This State Brief contextualizes important characteristics of Vermont’s food system for consideration.

For example, Vermont’s food system strategic plan, [Farm to Plate](#), has led the way for food system planning efforts *across the country*. Farm to Plate has a laser focus on the power of networks to transform systems. The [Farm to Plate Network](#) has committed to building a strong business services, technical assistance, and financing support system for small and midsize producers, processors, and food system businesses. Vermont has already made significant investments in long-term food production, increasing the viability of local farms and food businesses, and protecting and preserving agricultural land.

At the same time, Vermont’s food system is small by national standards and heavily dependent on dairy production. Vermont, along with Maine, will have to both increase the total amount of land in agriculture and increase vegetable, produce, livestock, and grain production to meet a 30% by 2030 goal.

Dollar stores are by far the most common type of major grocery chain in Vermont, but the state also has a significant number of independent grocery stores, like Healthy Living, 11 food co-ops, and many country stores. These smaller stores may also facilitate access to regional food.



Since 2009, [Farm to Plate](#) has been Vermont’s food system plan to increase economic development and jobs across the food system, improve the resiliency of the working landscape in the face of climate change, and improve access to healthy local foods for all Vermonters. The 15 goals and 34 priority strategies contained in the [Vermont Agriculture and Food System Strategic Plan 2021-2030](#) are being implemented by over 350 organizations who comprise the Farm to Plate Network. The Strategic Plan also informs the work of the [Vermont Agency of Agriculture, Food & Markets](#), the [Governor’s Commission on the Future of Agriculture](#), the [Vermont Climate Council](#), and the [Working Lands](#)



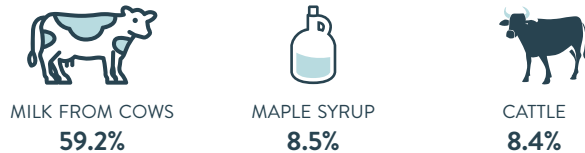
Farm to Plate’s Steering Committee serves as a governing and advisory body for the Farm to Plate Network.

[Enterprise Board](#). To have all these entities aligned around the same food system development plan means we have a greater ability to achieve the plan’s goals by 2030, and contribute to the regions 30% x 2030 goal.

## State Snapshot

### Top Agricultural Products by Sales, 2017

Milk from cows and cattle/calf sales made up the majority (\$405 million out of \$684 million) of agricultural sales in Vermont.

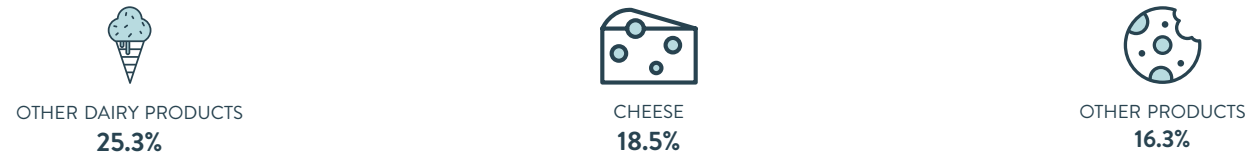


### Top Retail Food Sales by Market Channel, 2017

Grocery stores and restaurants accounted for 86.8% of total retail food sales (\$3.3 billion).

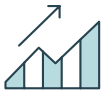


### Top Manufactured Products by Sales, 2017



Vermont had the highest percentage of food and beverage processing and manufacturing employment and sales of any state in New England. Food and beverage processing and manufacturing accounted for **9.2% of food system jobs and 21.3% of sales.**

Source: [Volume 3: Economic Impact of New England’s Food System](#)



# Food System Economy

## How big is Vermont's food system? What sectors are growing? What sectors are contracting?

Vermont's food system employs over **61,000** people and generates over **\$14.2 billion** in sales. Agricultural employment increased slightly and sales decreased slightly from 2007 to 2017. Employment and sales in every other category, except grocery store sales, increased from 2007 to 2017.

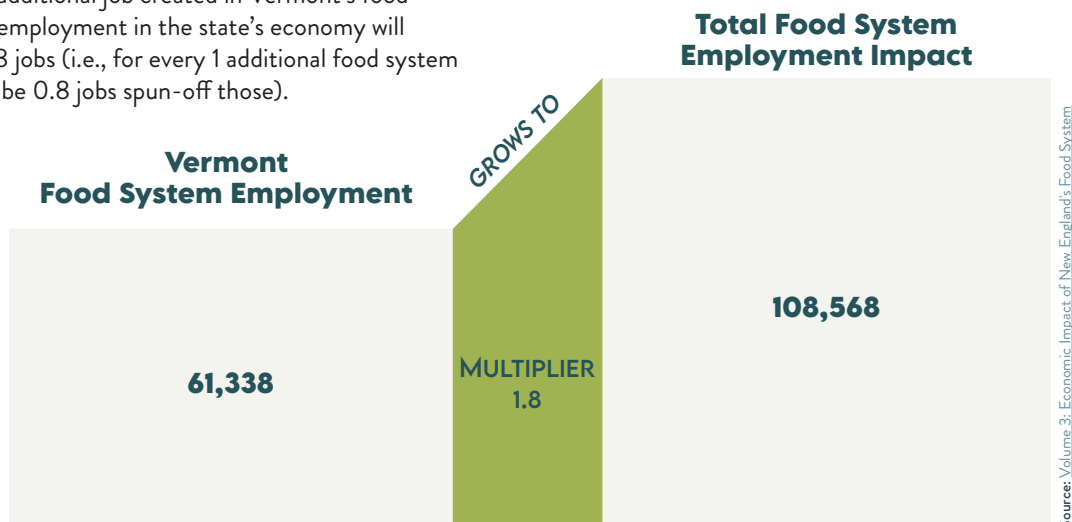
### » Economic Impact of Vermont's Food System, 2017

	2017 Employment	% of Total	Growth from 2007- 2017	2017 Sales	% of Total	Growth from 2007- 2017
Agriculture	21,700	35.4%	0.6%	\$704,405,500	4.9%	1.5%
Fisheries	0	0.0%	0.0%	\$0.00	0.0%	0.0%
Food Manufacturing	4,806	7.8%	2.3%	\$2,788,294,100	19.6%	0.2%
Beverage Manufacturing	867	1.4%	11.8%	\$240,740,000	1.7%	0.7%
Wholesaling + Distributing	3,530	5.7%	1.2%	\$7,132,355,700	50.1%	11.7%
Stores	9,871	16.1%	0.4%	\$2,178,873,100	15.3%	-0.7%
Food Services + Drinking Places	20,555	33.5%	0.4%	\$1,206,743,600	8.5%	1.4%
<b>TOTAL</b>	<b>61,338</b>	<b>100.0%</b>	<b>0.7%</b>	<b>\$14,251,411,900</b>	<b>100.0%</b>	<b>4.3%</b>

Source: Volume 3: Economic Impact of New England's Food System. Note: Agriculture sales in this table includes support activities. Sales values are adjusted for inflation to 2020 dollars. Agricultural sales are adjusted using producer price indices for crops and livestock.

### » Food System Employment Multiplier

The employment multiplier calculated in Volume 3 shows that for each additional job created in Vermont's food system, total employment in the state's economy will increase by 1.8 jobs (i.e., for every 1 additional food system job, there will be 0.8 jobs spun-off those).



The additional 0.8 job (in aggregate) is actually a set of fractional jobs spread over the entire economy, the result of linked activity in other food system and nonfood system sectors. These include jobs in transportation, utilities, finance, trade, and government.

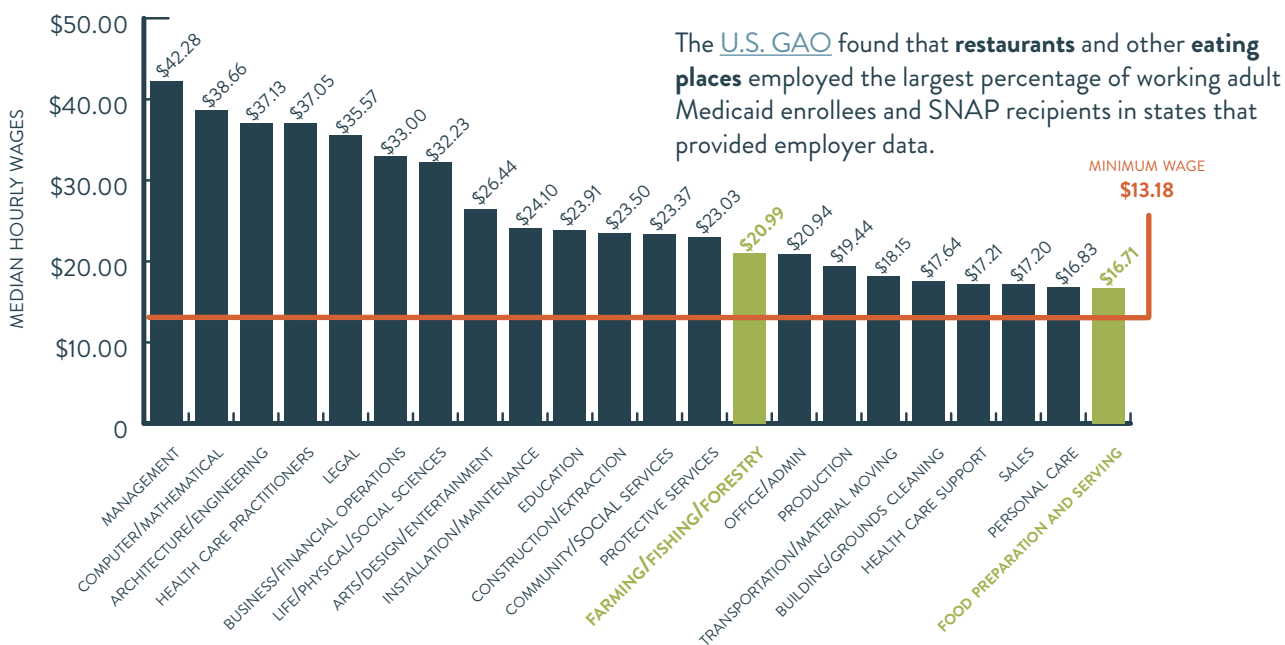


# Food System Wages

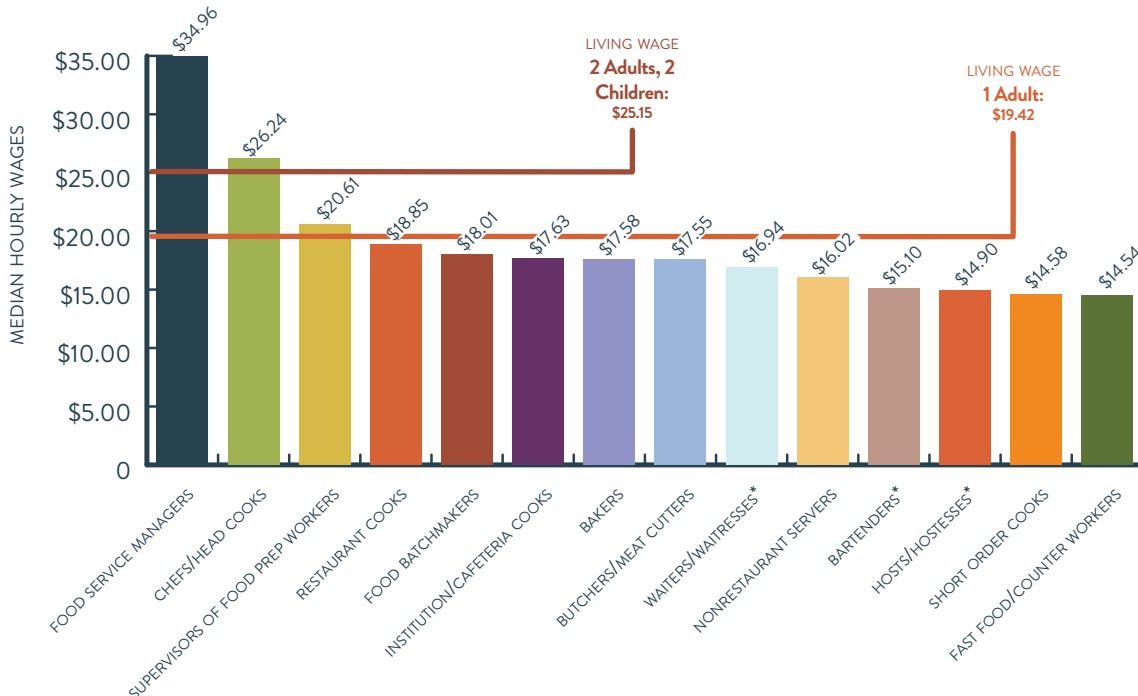
## How much do food system workers in Vermont earn?

[Wages/salaries](#) are the most common source of income for the majority of Americans. Unfortunately, Vermont's food system workers, particularly food service workers, receive some of the *lowest* wages of any occupational category in the state. Vermont has the third lowest minimum wage of the New England states, and median hourly wages for many food system jobs are below living wage levels.

### » Median Hourly Wages by Major Occupational Category, 2022



### » Median Hourly Wages by Selected Food System Occupations, 2022



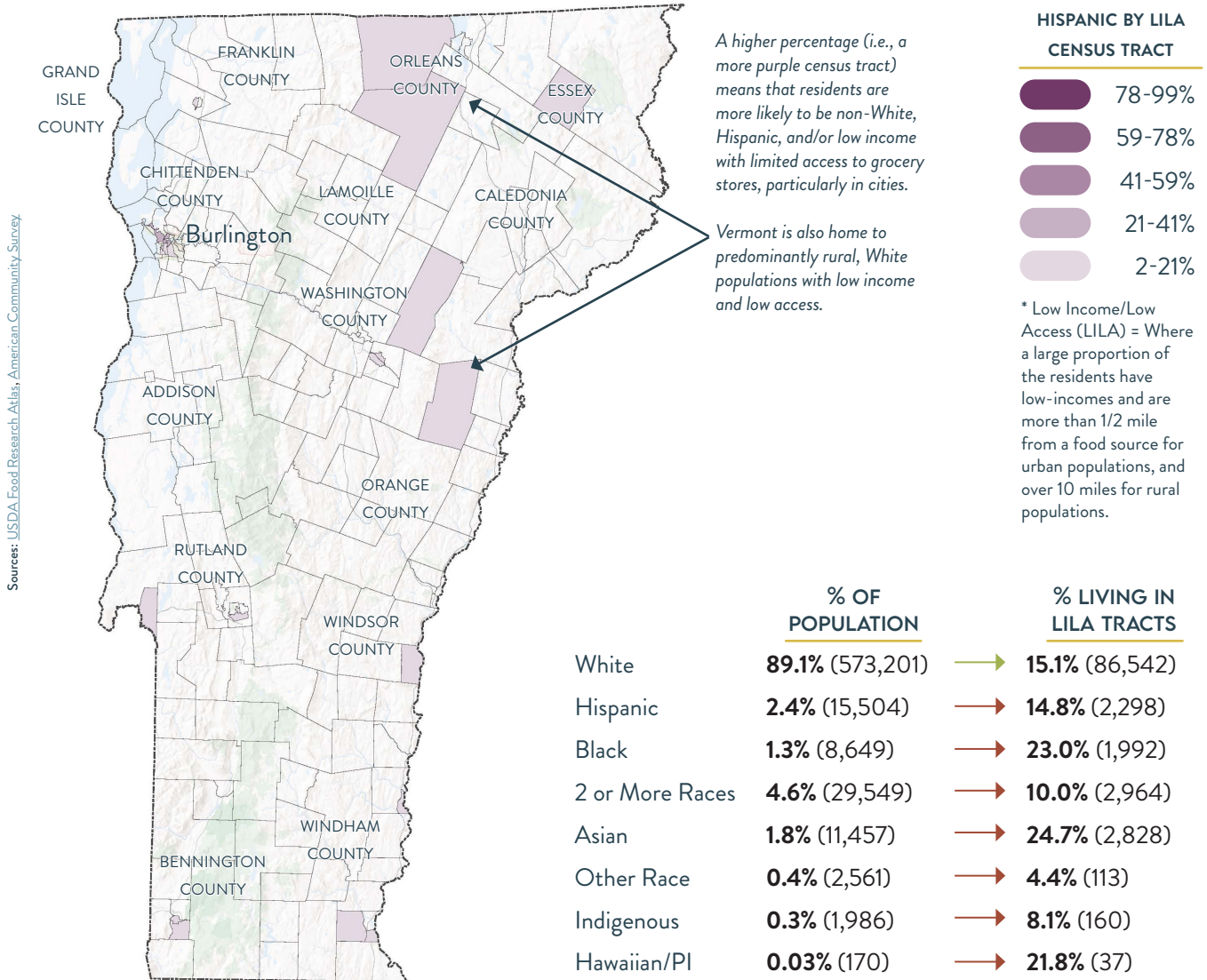
Source: U.S. Bureau of Labor Statistics, Occupational Employment and Wage Statistics, Vermont Legislative Joint Fiscal Office, 2022 Vermont Basic Needs Budget and Livable Wage Report. Note: the average between rural and urban was used. \* wage data includes tips.



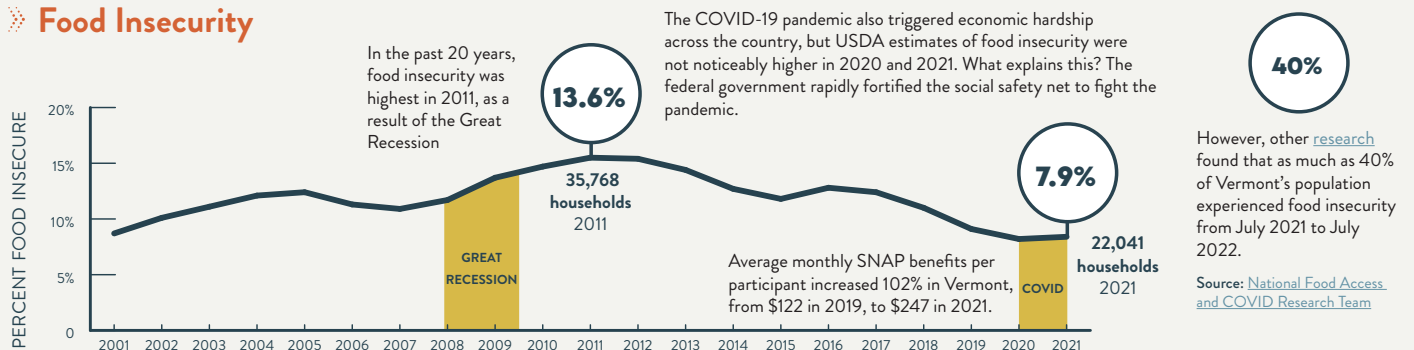
# Food Access

## Do Vermonters have equitable access to food stores?

Vermont's biracial, Hispanic, Asian, Black, and other non-White populations disproportionately live in low income/low access (LILA)\* census tracts.



## Food Insecurity



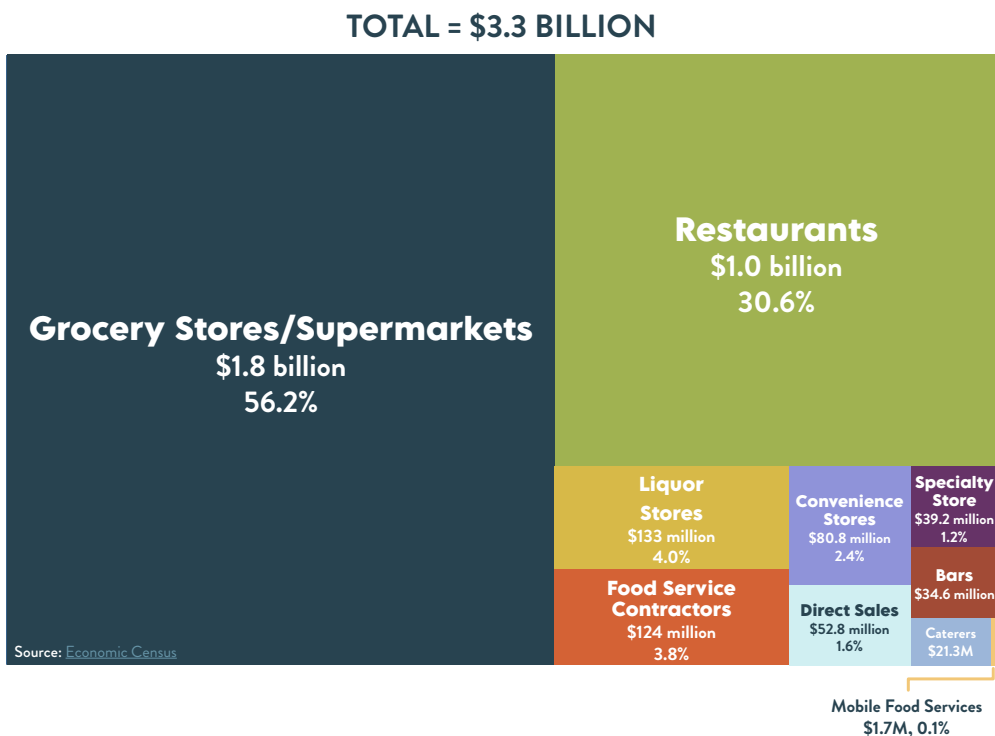


# Food Expenditures

## How much do Vermonters spend on food? Where do they shop?

Vermonters spent over **\$3.3 billion** at stores and restaurants in 2017. Grocery stores (56.2%) and restaurants (30.6%)—which includes full-service and fast food restaurants—accounted for 86.8% of total sales. Direct sales from farmer to customer made up 1.6% of total retail sales, the *highest* percent in New England.

### » Food Stores and Services Sales, 2017



### » Count of Food Stores in Vermont

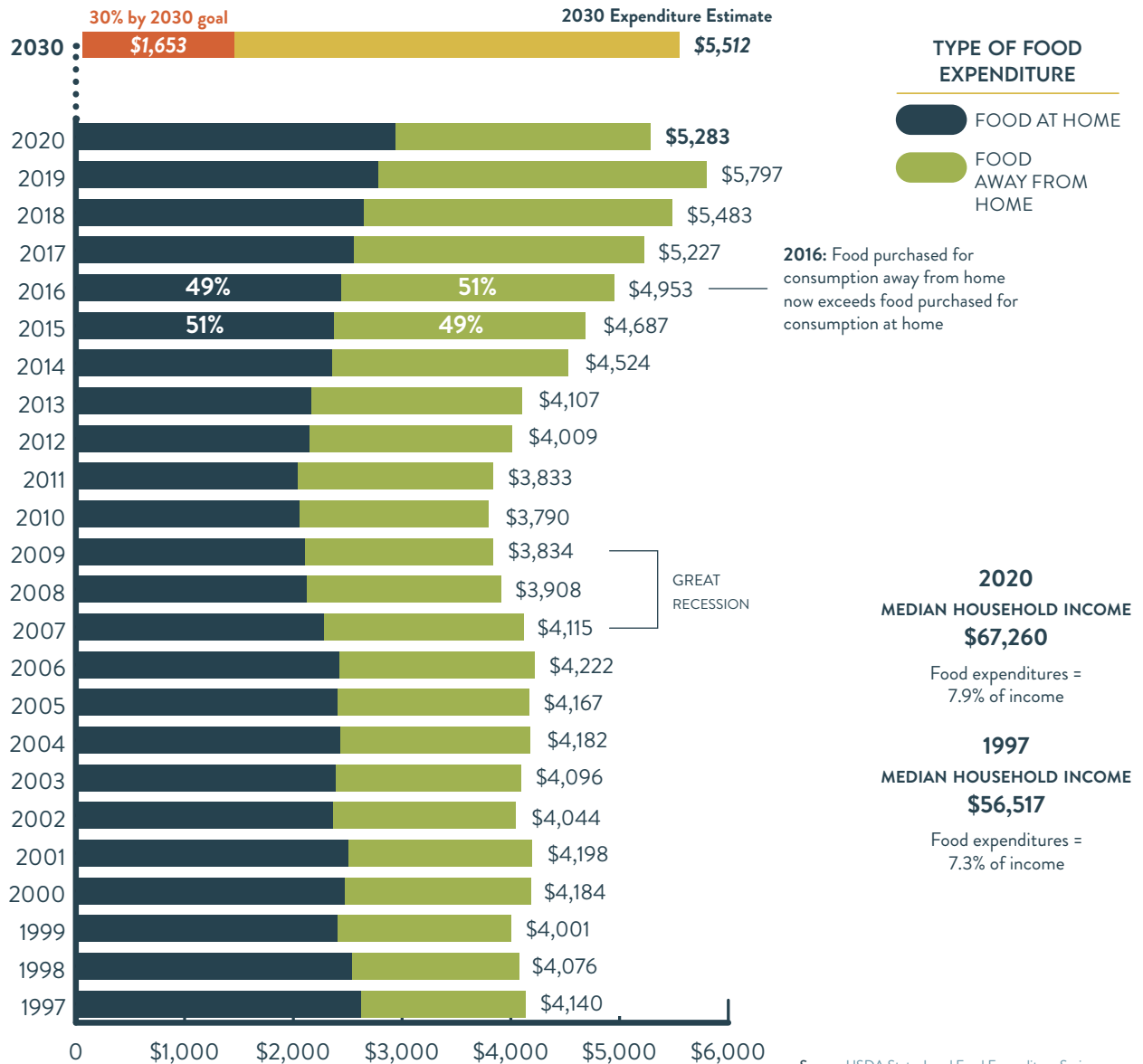




## What would it take to meet a 30% food expenditure goal?

#13

Vermont had the thirteenth highest per capita food expenditures (**\$5,283**) of any state in the country in 2020. With an average annual food expenditure growth rate of 1.5% from 1997 to 2020—and population increase to 711,870 by 2030—per capita food expenditures may reach **\$5,512** by 2030. About **\$1,653** per capita would then have to be spent on regional food to meet our 30% goal.



Northeast consumer expenditure data indicates that ultraprocessed food and beverage products make up the top 3 food expenditure categories, followed by fresh fruit.



MISCELLANEOUS FOODS  
**\$1,147 (18.7%)**

Frozen prepared meals,  
canned food, chips,  
desserts, etc.



BAKERY PRODUCTS  
**\$585 (9.5%)**

Bread, crackers, cookies,  
cakes, pies, doughnuts,  
etc.



NONALCOHOLIC BEVERAGES  
**\$576 (9.4%)**

Soda, coffee, tea, ice, sports  
drinks, etc.



FRESH FRUIT  
**\$467 (7.6%)**

Source: Consumer Expenditure Survey



# Climate Change

## How will climate change impact Vermont's food system?

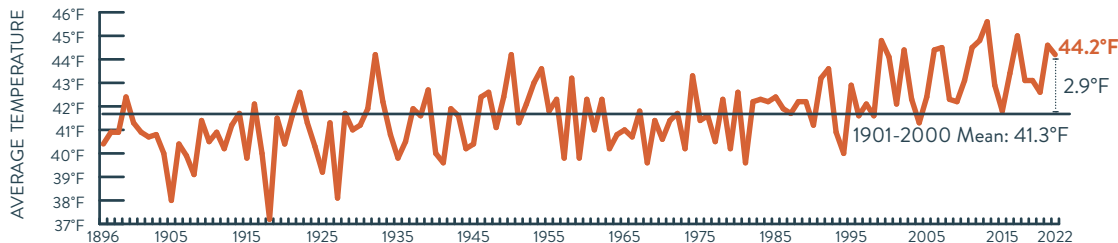
Food system activities like cultivating crops, raising livestock, and land use changes, are major drivers of climate change *and* food systems are particularly vulnerable to a changing climate. [July 2023](#) was the warmest month on record and major changes are already underway across Vermont and New England:

- » **Benefits to Agriculture:** longer growing periods and milder temperatures should allow farmers to [experiment with new crops or practices](#) that were previously not viable in Vermont.
- » **Loss of Seasonality:** at the same time, less distinct seasons, milder winters, earlier spring conditions, and more unpredictable and extreme weather are expected to impact agricultural production. For example, a [late frost event](#) in May 2023 led to a USDA Secretarial Disaster Designation for every county in Vermont. An iconic Vermont agricultural activity—maple syrup production—is expected to decrease as climate change impacts the range in which tree species can survive, shortens the length of the sugaring season, and aids in the expansion of invasive tree pests.



The average temperature in Vermont in 2022, 44.2°F, was 2.9°F higher than the average temperature during the previous century.

### » Air Temperature Anomaly



Source: NOAA [National Centers for Environmental Information](#)

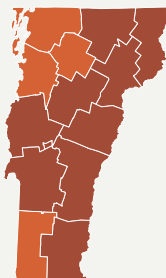
### » Projected Climate Risks

HIGH 
  MEDIUM 
  LOW 
  NO RISK

#### EXTREME RAIN



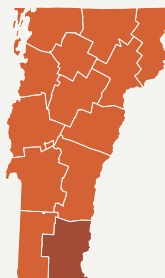
Annual precipitation and extreme precipitation events in Vermont have been [above average](#) in recent years.



#### HURRICANES



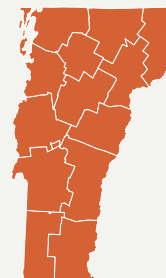
Hurricanes Irene (2011), Floyd (1999), and Gloria (1985), were all [billion-dollar disasters](#) that impacted Vermont.



#### WATER STRESS



Vermont has experienced more [abnormally dry days](#) during the past 10 years than it did in the early 2000s.



- » **Risks to Cities:** the Northeastern U.S. is home to densely populated cities, rural communities, critical transportation corridors and infrastructure, and culturally and historically significant sites. Climate change impacts, including from flooding and hurricanes can damage infrastructure, displace populations, strain our emergency response system, and disproportionately affect historically marginalized and low-income communities.



Photo credit: The Intervale Center



Photo credit: Paul Costello

In July, 2023, Vermont was inundated with extreme rainfall. Restaurants, stores, homes, and other businesses in the capital, Montpelier, were flooded. Farms across the state were again submerged, about 12 years after Tropical Storm Irene devastated the state.

- » **Threats to Health:** increases in heat and humidity, ground-level ozone pollution, air pollution from wildfires, mold, pollen season, vector-borne diseases (e.g., Lyme disease), and gastrointestinal illnesses from waterborne and foodborne contaminants can lead to more illness and death.

Source: Fourth National Climate Assessment, [Chapter 18: Northeast](#)

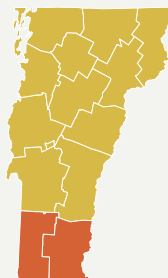
### » Projected Climate Risks

HIGH 
  MEDIUM 
  LOW 
  NO RISK

#### WILDFIRE

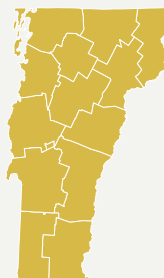


Large wildfires are not very common in Vermont, but 200-400 [small fires](#) (1.5-2 acres) occur per year.



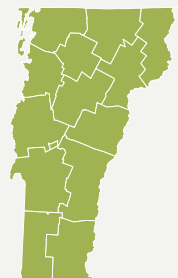
Temperatures have risen about 3.0°F since the beginning of the 20th century, resulting in warmer nights, shorter freeze-free seasons, and longer growing seasons.

#### HEAT STRESS



With no ocean coastline, Vermont is spared the direct impacts of sea level rise.

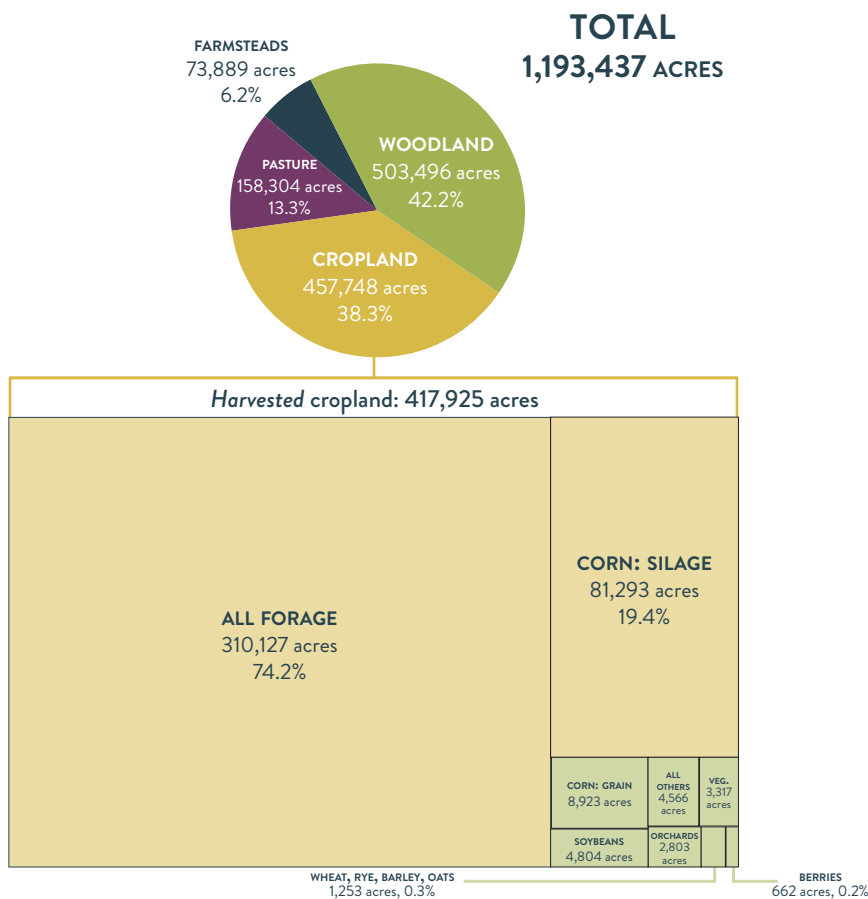
#### SEA LEVEL RISE



# Agriculture

## What kinds of agricultural products does Vermont grow/raise? How have land uses changed over time?

### Land in Agriculture



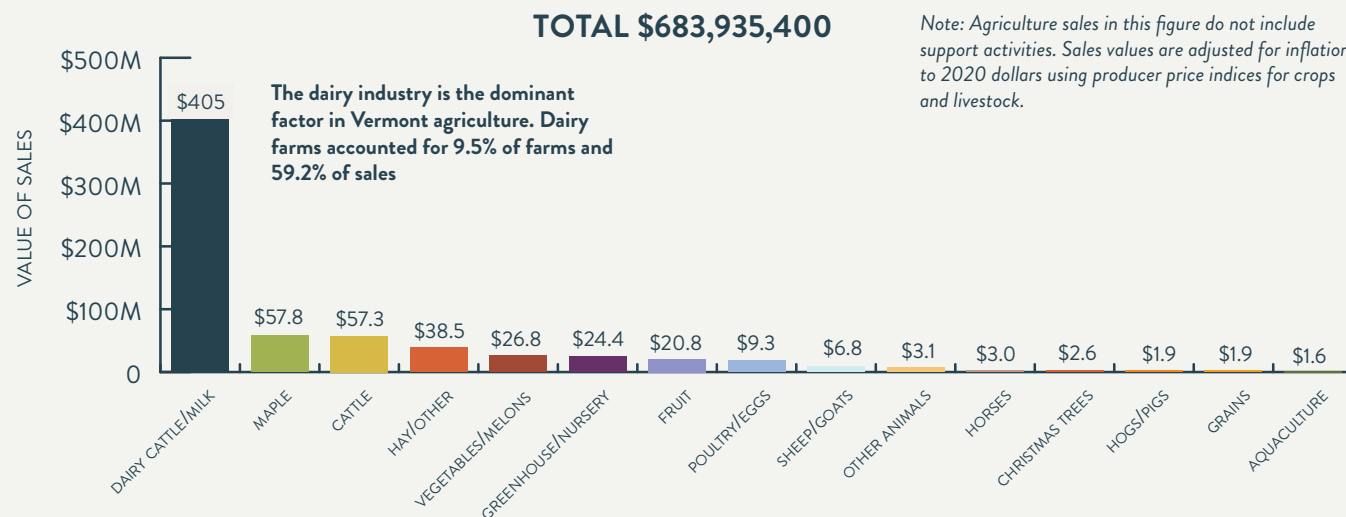
- #1** Vermont had the highest agricultural sales of any New England state, largely due to milk production.
- 47%** In 2021, Vermont produced almost half of the country's maple syrup (1.75 million gallons)
- 64%** Cropland decreased from 1.3 million acres in 1945 to 458,000 acres in 2017
- 85%** Pastureland decreased from 1.0 million acres in 1945 to 158,000 acres in 2017

#### END USES

- ANIMAL FEED
- EDIBLE

Acres for animal feed equaled **93.6% (391,420 acres)** of harvested cropland and 32.8% of total land in agriculture. Boosting vegetable, fruit, and grain production—whether in the open or indoors—is one way Vermont could help the region.

### Agricultural Sales



## » Projected Changes in Land in Agriculture, Business as Usual Scenario

### TOTAL

**1,193,437 ACRES** EXISTING ACREAGE  
**-41,200 ACRES** BUSINESS AS USUAL SCENARIO

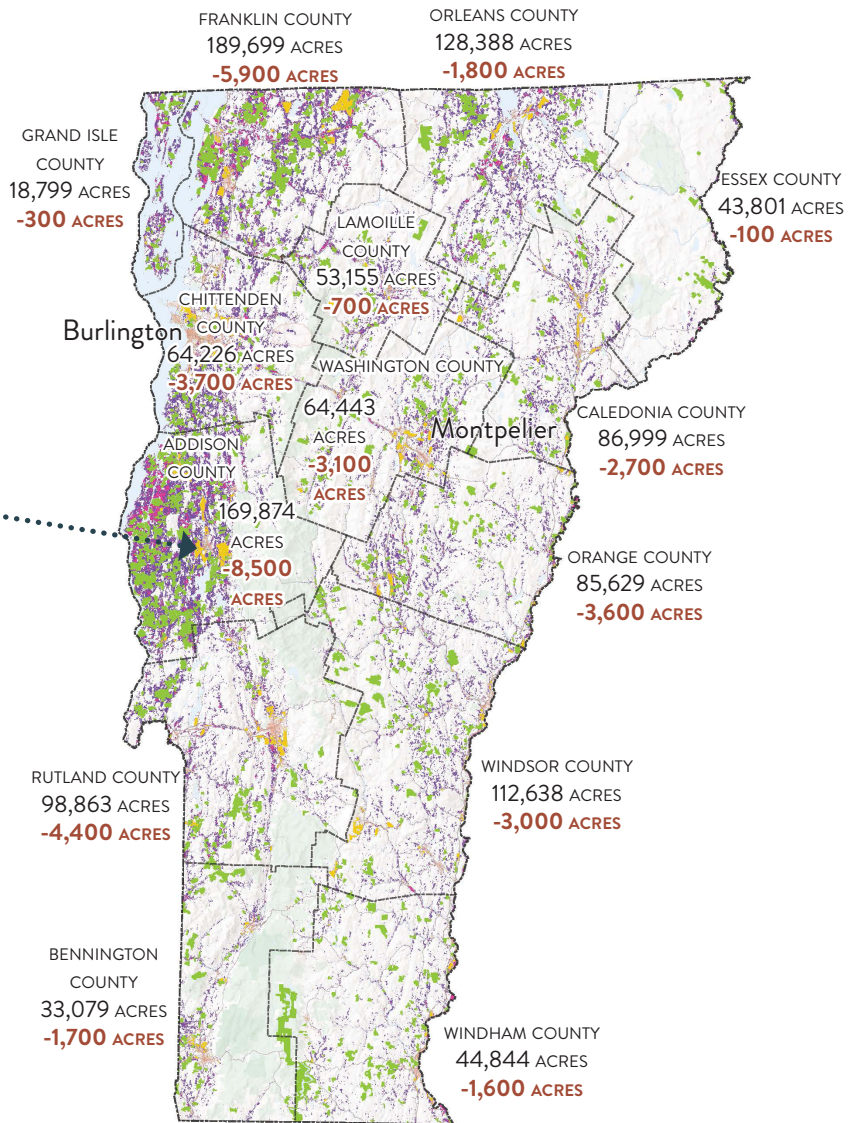
#### LAND USES

- CULTIVATED CROPS
- PASTURE/HAY
- EASEMENT
- DEVELOPED LAND
- PROJECTED URBAN AND HIGHLY DEVELOPED AND LOW-DENSITY RESIDENTIAL

An analysis from the American Farmland Trust (AFT) estimates that Vermont could lose an additional **41,200 acres** by 2040 under a “Business as Usual” development scenario and **61,800 acres** under a “Runaway Sprawl” scenario.

AFT projects that **Addison, Franklin,** and **Rutland** counties will experience the biggest decreases in land in agriculture.

Source: American Farmland Trust, [Farms Under Threat 2040: Choosing an Abundant Future](#)



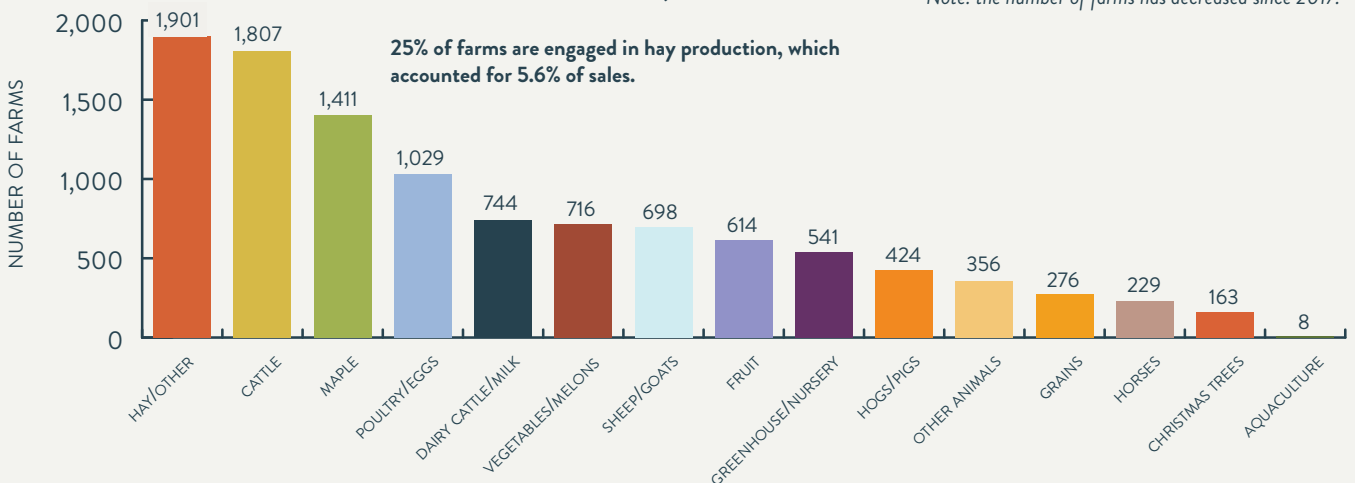
**20.5%**

Vermont has the highest percentage of agricultural land as a percentage of total land area, 20.5%, of any state in New England, but only a small percentage of agricultural land is used for crops to directly feed people.

## » Number of Farms Engaged in Each Category

**TOTAL 6,808 FARMS**

Note: the number of farms has decreased since 2017.





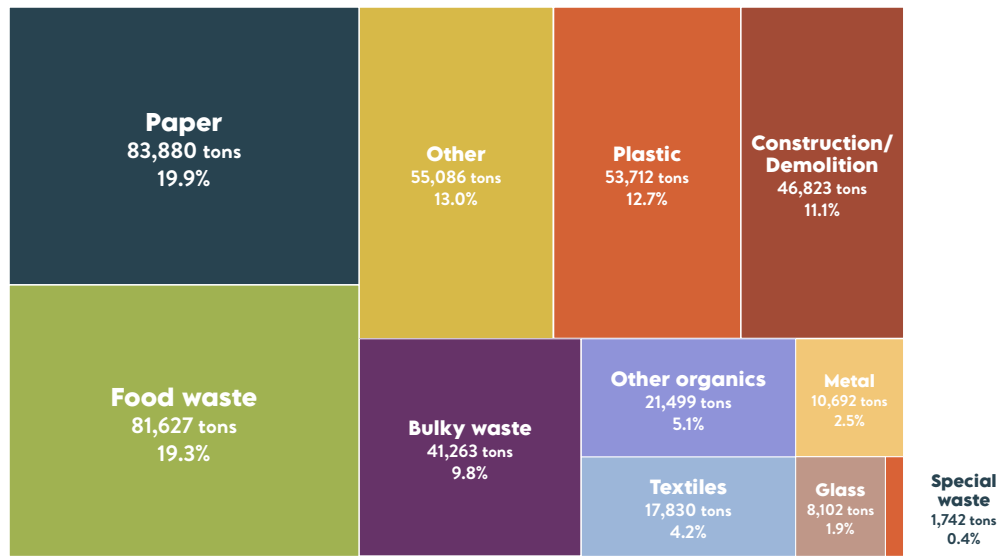
# Food Waste

## How much food waste is landfilled in Vermont?

A 2018 “Waste Characterization” study found that food waste (vegetative and protein) is the second most common material in Vermont’s municipal waste stream at 82,000 tons, or 1.6 million pounds.

### » Landfilled Food Waste

**422,258 TONS** TOTAL MSW  
**81,627 TONS** FOOD WASTE

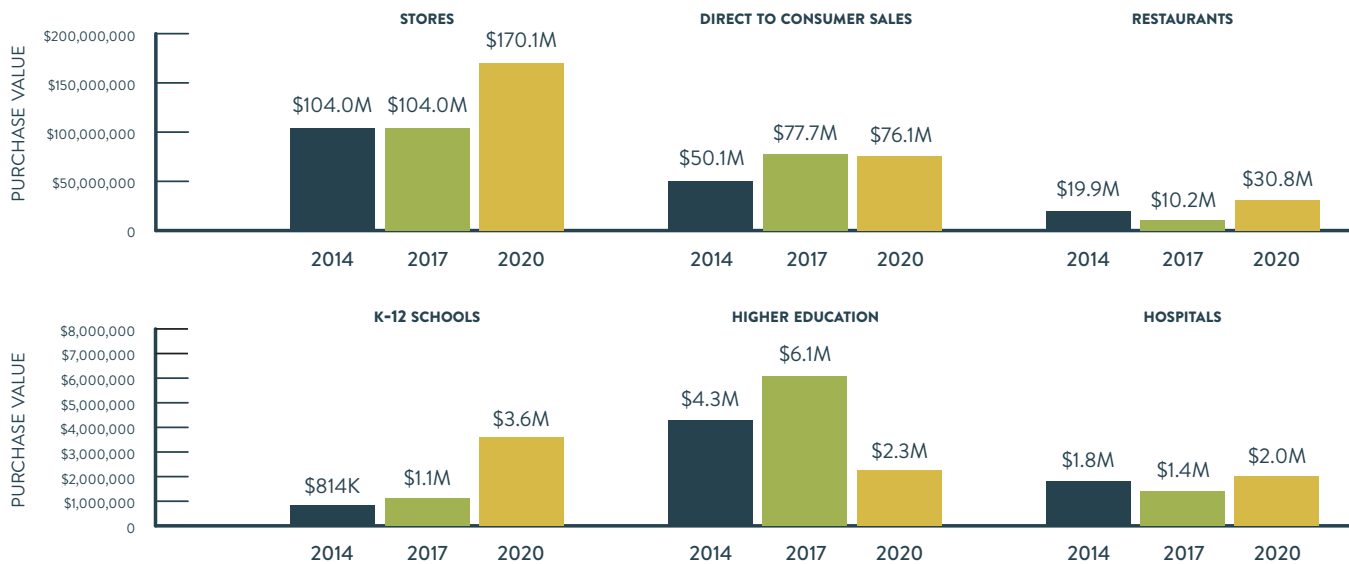


Source: DSM Environmental Services, 2018, 2018 Vermont Waste Characterization



# Local Food Count

Vermont’s Local Food Counts showcase growth in local food sales at most market outlets. **Dairy products, processed/manufactured food products, beverages, and meat were the top local products sold.** Vermont local food development efforts have led to increased local food sales, from \$114 million (5% of all food sales in 2011) to \$371 million (16.1% in 2020). Given their value to understanding actual regional food purchases, Local Food Counts will be conducted in the five other New England states in 2023.



# Key Vermont Strengths, Weaknesses, Opportunities, and Threats

## STRENGTHS

- Strong farming community and overall sense of farming as core to Vermont's identity.
- % of total land in ag production, with strong commitment to farmland conservation and access
- Strong culture and practice of local food consumption (from 5% to 16.1% over 10 years)
- Retail grocers training program has built relationships between producers, independent grocers, distributors and food hubs
- Robust support system of NGOs, producer associations, state government, academic institutions, funders and financial institutions

## WEAKNESSES

- Significant decrease in land in agriculture
- Vulnerable to the ebbs and flows of dairy industry
- Low minimum wage (\$13.13)
- Scale challenges: transportation costs are high and logistics efficiencies are difficult to attain in rural areas; geographic constraints limit sizes of farms and availability of contiguous land
- Disparities in healthy food access based on race/ethnicity
- BIPOC farmers struggle to secure sufficient land, capital and infrastructure

## OPPORTUNITIES

- Invest in long-term food production (e.g., expand vegetable, fruit, and protein production; increase indoor food production)
- Increase the viability of local farms and food businesses
- Protect and preserve active agricultural land
- Invest in food processing/manufacturing and distribution infrastructure for small and midsize operations

## THREATS

- Hurricanes and extreme rainfall are high risks for Vermont
- Aging population, including the population of farmers and food business owners
- Insufficient succession planning
- Land development pressures, including from climate migration into Vermont

## Next Steps: What Can Vermont do to Meet the 30% by 2030 Goal?

To help meet the region's 30x2030 goal, Vermont needs to aggressively implement priority strategies from its 2021-2030 Strategic Plan related to market development, climate resilience, food security, and racial equity. To accomplish its aims, and the region's, Vermont will need to closely coordinate with partnering New England states on policy innovation, consumer engagement, and financing and funding. Areas of priority include:

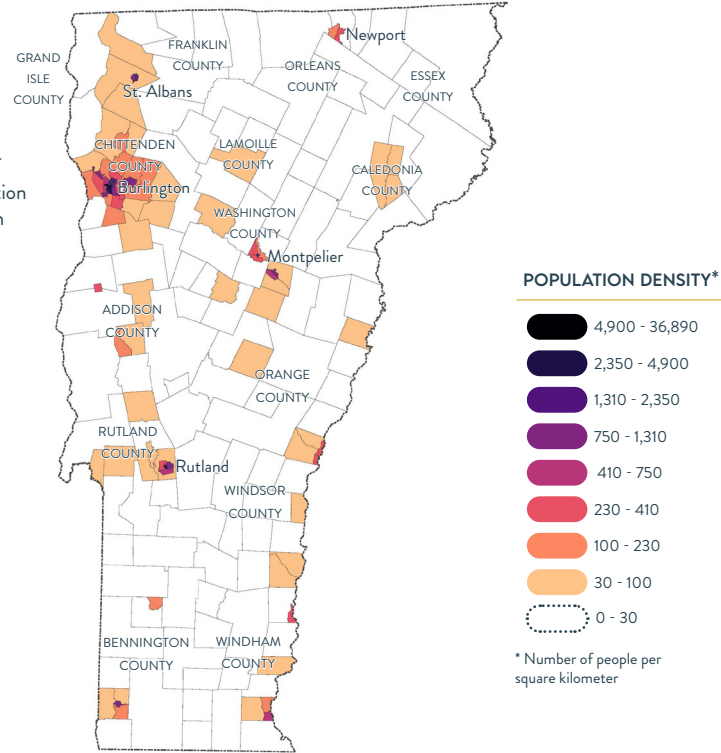
- » Production, processing, and distribution infrastructure and supply chain investment
- » Cultivating viable wholesale grocer market opportunities within the state and New England
- » Supporting and accelerating land access and land affordability with a particular focus on equitable access for beginning, socially disadvantaged, and BIPOC farmers
- » Creating synergies between climate policy and resilience and food system development
- » Leveraging cross-sector coalitions to stimulating systemic solutions to food access and security.



# Demographic Trends

## Population Density by Census Tract, 2020 5-year Average

More than 26% of Vermont's population lives in Chittenden County.



## Population by Age Cohort, 2020 Actual and 2030 Projection

AGE COHORT	2020	2030	% CHANGE
0-17	135,839	138,959	↑2.3%
18-29	96,898	89,542	↓-7.6%
30-39	97,541	86,647	↓-11.2%
40-49	81,537	100,769	↑23.6%
50-59	91,855	80,986	↓-11.8%
60-69	96,023	85,579	↓-10.9%
70-79	59,559	78,518	↑31.8%
>80	31,434	50,867	↑61.8%

Although the largest age cohort in 2030 will be 0-17, the biggest growth is expected in the cohorts 80+, 70-79, and 40-49. The number of people over the age of 60 is projected to increase by **14.9%**, from 187,016 in 2020, to 214,964 in 2030. The aging of the Vermont population will have health, labor force, food access, and food security implications.

Source: [CDC WONDER online database](#)