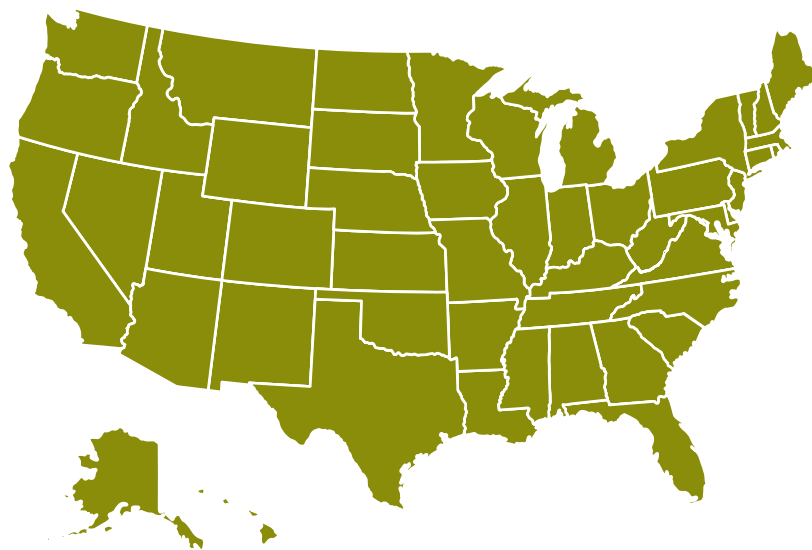




2018

STATE INDICATOR REPORT ON

FRUITS AND VEGETABLES



Centers for Disease Control and Prevention. *State Indicator Report on Fruits and Vegetables, 2018*. Atlanta, GA: Centers for Disease Control and Prevention, U.S. Department of Health and Human Services; 2018.

Executive Summary

What is This Report?

Despite the health benefits of fruits and vegetables, Americans are not consuming enough in their daily diet. States and communities can help citizens consume more fruits and vegetables by making them convenient and affordable in the places where children and adults live, work, learn, and play. This is particularly important for individuals and families that face food insecurity or lack access to stores selling quality produce at reasonable prices.

The State Indicator Report on Fruits and Vegetables, 2018, shows the status of 10 indicators of fruit and vegetable access and production by state.

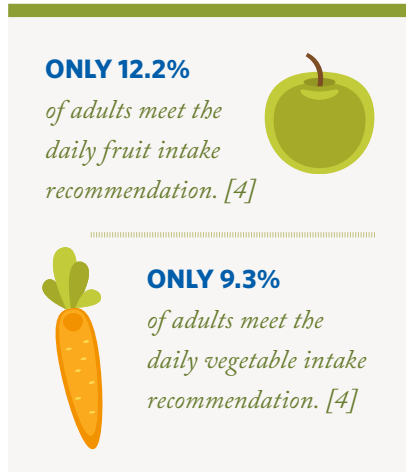
The 2018 State Indicator Report on Fruits and Vegetables can be used to:

- Describe how states can support a strong food system and promote fruit and vegetable access
- Highlight state successes
- Identify opportunities for improvement

Key findings from this report include:

- 10 states adopted a policy on food service guidelines that ensures healthy foods be sold or served in government-owned or -controlled facilities. Food service guidelines increase access to healthy food options (e.g., fruits and vegetables, lean proteins, and whole grains) in work sites, state agencies, parks and recreation centers, and other institutional settings.
- 47 states adopted a policy that supports either farm to school or farm to Early Care and Education (ECE) and increases student access to locally grown foods, including fruits and vegetables; school gardening; or other educational activities related to nutrition and agriculture.
- 32 states have an active state food policy council. Food policy councils bring together diverse stakeholders to support a strong regional food system and often work to increase access to nutritious foods, including fruits and vegetables.

THE PROBLEM



Poor diet quality is a leading risk factor associated with death and disability in the United States.^{1,2} Eating a diet rich in fruits and vegetables as part of an overall healthy diet can help protect against a number of serious and costly chronic diseases, including heart disease, type 2 diabetes, some cancers, and obesity. Fruits and vegetables also provide important vitamins and minerals that help the human body work as it should and fight off illness and disease.³

The 2015–2020 *Dietary Guidelines for Americans* recommends that adults consume 1.5–2 cups of fruits and 2–3 cups of vegetables per day.³ Despite these recommendations, recent data show low consumption.^{4,5} Only 1 in 10 US adults eat the recommended amount of fruits or vegetables

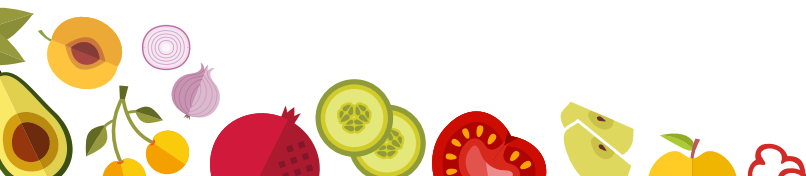
each day.⁴ Fruit and vegetable consumption among American youth is also low; just 9% of high school students meet the fruit recommendation, and only 2% meet the vegetable recommendation.⁵ Income-related disparities exist, as well, with 7% of adults who live at or below the poverty level meeting the daily vegetable recommendation, compared to 11.4% of adults with the highest household incomes.⁴

SOLUTIONS

As part of a healthy food environment, fruits and vegetables need to be accessible and affordable in the places where children and families spend time^{3,6}

Educating individuals on the benefits of a diet rich in fruits and vegetables is important; but alone, these efforts are not enough.³ To change behavior and improve population-level dietary habits, experts recommend a collective approach that improves the availability and affordability of healthy foods where Americans live, work, learn, and play. In addition to community food retailers, institutions, such as state

and local governments, work sites, schools, ECE centers, and hospitals, are important partners in improving access to healthy foods.^{3,6–9} These institutions provide frontline access to foods for millions of Americans each day. States can work with these diverse stakeholders to increase access to fruits and vegetables and strengthen the regional food system. For example, government agencies and work sites can adopt nutrition standards that make healthy foods (e.g., fruits and vegetables, whole grains, lean proteins) available in food service operations; schools can establish farm to school programs that support buying locally grown fruits and vegetables and provide educational gardening experiences; and state and local food policy councils can work to guide policies and programs that improve the production, distribution, and affordability of fruits and vegetables in underserved communities.^{6,10}






State Indicator Report on Fruits and Vegetables

This state indicator report provides national and state data on 10 indicators of fruit and vegetable access and production for all 50 states and the District of Columbia (Table 1). These data augment recently released state-specific fruit and vegetable consumption and behavior data.⁴ Data for each indicator was collected from verified, publicly available sources. Indicator definitions and data methodology are provided in Appendix I.



TABLE 1.

INDICATORS ON FRUIT AND VEGETABLE ACCESS AND PRODUCTION

 <p>IMPROVING FRUIT AND VEGETABLE ACCESS FOR INDIVIDUALS AND FAMILIES</p>	 <p>IMPROVING FRUIT AND VEGETABLE ACCESS FOR CHILDREN</p>	 <p>FOOD SYSTEM SUPPORT FOR FRUITS AND VEGETABLES</p>
<ol style="list-style-type: none"> 1. Number of Farmers Markets per 100,000 Residents, 2017 2. Percentage of Farmers Markets Accepting the Supplemental Nutrition Program for Women, Infants, and Children (WIC), Farmers Market Nutrition Program vouchers, 2017 3. State Policy on Food Service Guidelines, 2014 	<ol style="list-style-type: none"> 4. State ECE Licensing Regulations that Align with National Standards for Serving Fruits and Vegetables, 2016 5. State Farm to School or Farm to ECE Policy in Place, 2002-2017 6. Percentage of School Districts Participating in Farm to School Programs, 2014 7. Percentage of Middle and High Schools Offering Salad Bars, 2016 	<ol style="list-style-type: none"> 8. State Food Policy Council, 2018 9. Number of Local Food Policy Councils, 2018 10. Number of Food Hubs, 2017

CDC released a State Indicator Report on Fruits and Vegetables in 2009 and 2013. Because of methodological differences in data collection, some indicators may not be comparable to previous reports. See Appendix for details on which indicators are comparable.



Improving Fruit and Vegetable Access for Individuals and Families

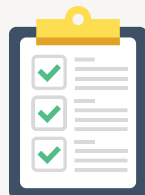
In the United States, there are
2.7 FARMERS MARKETS
per 100,000 citizens.



**30.8% OF
US FARMERS
MARKETS**

accept WIC,

*Farmers Market Nutrition
Program vouchers.*



**10 STATES
ADOPTED
A POLICY ON
FOOD SERVICE
GUIDELINES**

*that ensures healthy food
options be sold or served
in government-owned
or -controlled
facilities.*



RATIONALE

States and communities can do more to make fruits and vegetables accessible.

Although most Americans would benefit from improving their fruit and vegetable intake, for some individuals and families, this may be more difficult.³ Research shows that residents of low-income, minority, and rural neighborhoods have less access to stores that sell healthy foods, including a variety of fruits and vegetables at affordable prices.¹¹ To address these disparities, states can support strategies that make quality produce more accessible and affordable in underserved neighborhoods.⁶

A farmers market is one way to increase access to fruits and vegetables.⁶ Farmers markets help connect local farms to underserved neighborhoods or rural areas that may lack brick and mortar stores selling affordable fruits and vegetables. These markets can expand operating hours and locate near places that make it easy for

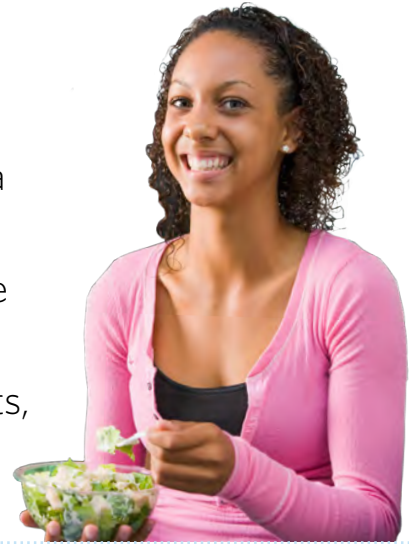
low-income individuals to shop, for example, near public transportation stops or close to community health clinics.^{12,13} Having farmers markets that accept WIC Farmers Market Nutrition Program vouchers, or that take part in incentive programs to make fresh produce more affordable, can help lower-income families address food insecurity and meet dietary recommendations for fruits and vegetables.^{14,15}

Adopting food service guidelines, or nutrition standards that align with the current *Dietary Guidelines for Americans*, is another strategy states and communities can use to improve the availability of healthy foods, including fruits and vegetables. Collectively, public facilities (e.g., state agencies, government work sites, public hospitals, senior centers, public parks, recreation centers) sell or serve food to millions of Americans each day.⁷ By adopting food service guidelines, these institutions can use their purchasing power to provide foods that support overall health and wellness, such as leaner proteins, whole grains, lower fat dairy, and fruits and vegetables.^{16,17}



Kentucky Farmers Markets Improve Access to Fresh Produce in Underserved Neighborhoods

In 2013, 46% of Kentucky adults ate fruit less than once a day, and 25% ate vegetables less than once a day. Often, residents in low-income or rural communities do not have access to full-service grocery stores that carry a wide variety of produce, including, low-sodium canned products, frozen, or fresh produce.



Community farmers markets are a good solution, but in 2014, only a small number of Kentucky markets accepted federal nutrition assistance benefits, such as WIC Farmers Market Nutrition Program vouchers or the Senior Farmers Market Nutrition Program coupons.

To address the issue, the Kentucky Department of Public Health partnered with a coalition of community organizations across the state to improve healthier food access in low-income communities. Through a collaborative effort, the Community Farm Alliance developed the Double Dollars program. The Double Dollars program provides technical assistance and funding to

farmers markets, enabling them to fully accept federal nutrition benefits. As of 2017, low-income customers are able to shop at 41 participating markets and have their federal nutrition benefits matched when purchasing fresh, local produce.

Customer surveys administered after the initial phase of the program found that:

- 64% of customers reported that Double Dollars incentives were extremely or very important to shopping at the farmers market.
- 68% said that they eat more fruits and vegetables thanks to this program.
- 71% felt more educated about nutrition and healthy eating.



Learn more about the successes of the Kentucky Farmers Market Support

Program at: <https://www.cdc.gov/nccdphp/dnpao/state-local-programs/pdf/program-highlights/HR-KY.pdf>

This project is supported by CDC's [State Public Health Actions to Prevent and Control Diabetes, Heart Disease, Obesity, and Associated Risk Factors and Promote School Health cooperative agreement \(DP13-1305\)](#).



Improving Fruit and Vegetable Access for Children



3 STATES HAVE ECE LICENSING REGULATIONS

that align with national standards for serving fruits and vegetables.



47 STATES ADOPTED A POLICY *that supports farm to school or farm to ECE (2002–2017).*

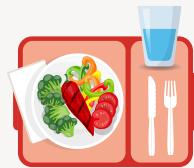


42% OF US SCHOOL DISTRICTS

participate in farm to school programs.

Across 48 states and D.C., a median of

44.8% OF MIDDLE AND HIGH SCHOOLS OFFER A SALAD BAR TO STUDENTS.



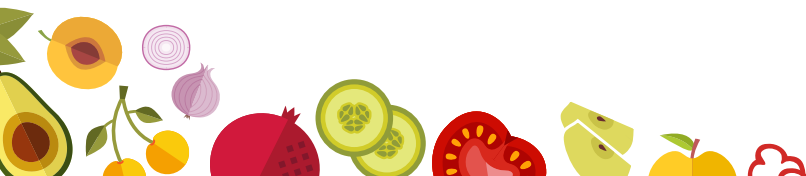
RATIONALE

Schools and ECE providers are key partners in supporting children’s fruit and vegetable intake.

Most US children do not meet national recommendations for fruit and vegetable servings.^{5,18} Helping children develop healthy eating habits early in life may lead to healthier behaviors that last a lifetime.¹⁹ States can partner with schools, ECE providers, and after-school programs to ensure that nutritious foods, including fruits and vegetables, are affordable, appealing, and accessible to the children they serve.²⁰⁻²³ Improving the nutrition environment in schools and ECE settings can also support the food system and stimulate economic development through large-scale purchasing of fruits and vegetables from local or regional farmers.^{24,25}

States can support the development of farm to school and farm to ECE programs. These programs provide fruits and vegetables and teach healthy eating behaviors through nutrition-based curriculum and hands-on learning experiences, for example, farm visits, school gardens, and healthy cooking lessons.^{26,27} Introducing a salad bar into the school lunch room may also increase the amount and variety of fruits and vegetables consumed by students.²⁸⁻³⁰

In addition to schools, ECE settings, which include childcare centers, family childcare homes, prekindergarten classrooms, and Head Start, are an important venue for obesity prevention and healthy eating promotion.^{31,32} Currently, almost 14% of preschool-aged children (2 to 5 years) have obesity.³³ ECE settings directly influence what millions of young children eat on a daily basis.³⁴ Some states and communities are adopting ECE licensing regulations that include best practices for obesity prevention and require ECE providers to increase the amount and variety of fruits and vegetables served at meals or snack times.³⁵



Increasing Access to Fruits and Vegetables in Ohio Early Care and Education Centers

In Ohio, 13% of children aged 2 to 4 years who participate in the WIC federal nutrition assistance program have obesity. In addition, approximately 41% of children are cared for outside of their homes by a nonfamily member on a part-time or full-time basis.



In 2016, Ohio childcare regulations did not fully meet the national standards for obesity prevention, including regularly providing access to fresh fruits and vegetables.

As a result, the Ohio Department of Health worked with partners across the state to improve nutrition standards in 80% of Ohio counties. Working together with the Ohio Child Care Resources & Referral Association and Children's Hunger Alliance, the Department of Health provided licensed childcare centers, preschools, and home-based childcare programs with resources, trainings, and technical assistance on reaching best practices for healthy eating.

The initiative worked with over 1,600 ECE centers across the state, serving approximately

110,000 children, to improve food menus and educate parents about healthy eating practices. Examples of menu improvements include eliminating fried foods, offering fresh fruit and vegetables at every meal, and providing milk and water instead of sugar-sweetened beverages.



To learn more about how the Ohio Department of Health is making healthy food choices easier for Ohio children, visit: <https://nccd.cdc.gov/nccdsuccessstories/showdoc.aspx?s=12608&dt=0>

This project is supported by the CDC-funded State Public Health Actions to Prevent and Control Diabetes, Heart Disease, Obesity, and Associated Risk Factors and Promote School Health cooperative agreement (DP13-1305).

“My class is going through a food revolution. My pickiest eaters are the most eager to try new foods now, and they look forward to lunch as an activity rather than just something we need to get through.”

— CHILD CARE PROVIDER,
OHIO HEALTHY PROGRAM
PARTICIPANT



Increasing Food System Support for Fruits and Vegetables

32 STATES
have an
active
state food
policy council.



There are **234 ACTIVE LOCAL FOOD POLICY COUNCILS** in the United States.



There are **212 ACTIVE FOOD HUBS** in the United States.



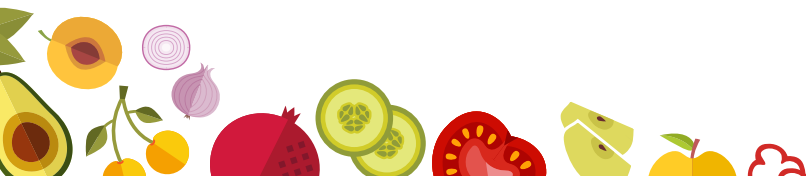
RATIONALE

Strong regional food systems are a win-win for producers and consumers.

Some states and communities are working to create strong regional food systems that enable residents to buy more locally sourced foods, including fruits and vegetables. Local produce farmers often sell fruits and vegetables in direct-to-consumer venues, such as community farmers markets, and through farm to institution programs in schools, businesses, universities, and hospitals.^{36,37} This may help keep money spent on food within the local economy, and support new jobs and economic growth. This is a win-win for citizens who want to eat a diet rich in fruits and vegetables, and for the local farmers that grow them.³⁷⁻³⁹

To build a strong food system, states can partner with a variety of stakeholders, including regional farmers, large-scale purchasers, community food banks, public health practitioners, nonprofit organizations, and interested citizens. A food policy council brings together these diverse stakeholders to discuss food system issues and plan for collective action. These councils often work to guide policies and programs that improve the food system and make nutritious foods, such as fruits and vegetables, accessible and affordable.^{40, 41}

In addition, states can support regional food hubs as a strategy for increasing access to locally grown produce. Food hubs are businesses or organizations that manage the aggregation, distribution, and marketing of products from regional farms.⁴² The majority of food hubs in the United States carry fruits and vegetables from local or regional growers.⁴³ They make it easier for small and midsize farmers to meet the volume and quality demands of large, institutional purchasers of fruits and vegetables, for example, food retailers, schools, and hospitals.^{42, 43}



CDC'S STATE INDICATOR REPORT ON FRUITS AND VEGETABLES, 2018

State	For Individuals and Families			For Children					Food System Support		
	Number of Farmers Markets per 100,000 Residents, 2017	Percentage of Farmers Markets Accepting WIC Farmers Market Nutrition Program Vouchers, 2017	State Policy on Food Service Guidelines, 2014	State ECE Licensing Regulations that Align with National Standards for Serving Fruits and Vegetables, 2016		State Farm to School or Farm to Early Care and Education Policy in Place, 2002-2017	Percentage of School Districts Participating in Farm to School Programs, 2014	Percentage of Middle and High Schools Offering Salad Bars, 2016	State Food Policy Council, 2018**	Number of Local Food Policy Councils, 2018	Number of Food Hubs, 2017
				Fruit	Vegetable						
National	2.7	30.8	10	9	3	47	41.8	44.8 *	32	234	212
Alabama (AL)	2.9	9.9	No	No	No	Yes	30.8	41.7	No	1	1
Alaska (AK)	5.3	38.5	No	No	No	Yes	76.3	26.1	Yes	0	3
Arizona (AZ)	1.3	38.0	No	Yes	No	Yes	25.3	49.5	No	3	3
Arkansas (AR)	3.6	19.6	No	No	No	Yes	22.3	40.9	No	0	2
California (CA)	1.9	48.5	Yes	Yes	No	Yes	54.9	54.8	Yes	29	14
Colorado (CO)	2.8	5.1	No	No	No	Yes	41.8	N/A	Yes	16	3
Connecticut (CT)	4.3	27.6	No	No	No	Yes	70.3	37.1	Yes	5	2
Delaware (DE)	3.8	16.2	No	Yes	No	Yes	60.0	12.8	Yes	0	0
Dist of Columbia (DC)	7.8	83.3	Yes	No	No	Yes	76.6	46.4	N/A	1	1
Florida (FL)	1.2	8.5	No	No	No	Yes	45.0	16.4	Yes	8	4
Georgia (GA)	1.5	7.6	No	No	No	Yes	61.6	28.6	No	2	7
Hawaii (HI)	6.9	0.0	No	No	No	Yes	47.4	32.3	Yes	0	3
Idaho (ID)	3.7	1.6	No	No	No	No	44.7	56.4	No	1	1
Illinois (IL)	2.6	13.5	No	Yes	No	Yes	24.4	37.6	Yes	2	7
Indiana (IN)	2.9	40.6	No	No	No	No	31.2	44.8	Yes	2	3
Iowa (IA)	7.3	34.9	No	No	No	Yes	29.2	N/A	No	5	5
Kansas (KS)	4	2.6	No	No	No	Yes	32.6	76.6	Yes	11	1
Kentucky (KY)	2.9	39.7	No	No	No	Yes	48.1	25.6	Yes	2	2
Louisiana (LA)	1.7	16.0	No	No	No	Yes	33.3	26.1	No	2	2
Maine (ME)	7.2	40.6	No	No	No	Yes	79.4	82.4	Yes	11	2
Maryland (MD)	2.7	67.9	No	No	No	Yes	68.3	27.8	No	8	8
Massachusetts (MA)	4.7	55.3	Yes	No	No	Yes	68.4	39.7	Yes	6	9
Michigan (MI)	3.4	46.0	No	No	No	Yes	43.2	54.1	Yes	15	10
Minnesota (MN)	3.5	19.8	Yes	No	No	Yes	50.6	73.4	Yes	5	5
Mississippi (MS)	2.8	15.7	Yes	Yes	Yes	Yes	50.0	15.5	Yes	0	4
Missouri (MO)	4.2	0.4	No	Yes	No	Yes	27.4	58.2	No	3	3
Montana (MT)	6.7	18.6	No	No	No	Yes	40.2	76.9	Yes	1	2
Nebraska (NE)	5.1	17.3	No	No	No	Yes	28.9	85.5	Yes	3	1
Nevada (NV)	1.3	7.5	No	No	No	Yes	22.2	23.3	Yes	2	1
New Hampshire (NH)	7.1	9.5	No	No	No	Yes	76.7	48.7	No	0	1
New Jersey (NJ)	1.7	32.0	No	No	No	Yes	48.3	27.1	No	3	0
New Mexico (NM)	3.4	70.0	No	Yes	Yes	Yes	34.5	43.4	Yes	3	1
New York (NY)	3.4	57.2	No	No	No	Yes	60.7	57.9	Yes	4	11
North Carolina (NC)	2.5	15.4	No	Yes	No	Yes	62.2	13.3	Yes	22	12
North Dakota (ND)	8.6	0.0	No	No	No	No	31.3	91.2	No	1	0
Ohio (OH)	2.9	25.7	Yes	No	No	Yes	26.6	31.6	Yes	14	10
Oklahoma (OK)	1.8	11.3	Yes	No	No	Yes	21.3	63.6	Yes	1	2
Oregon (OR)	4.1	57.4	No	No	No	Yes	54.9	74.9	No	4	5
Pennsylvania (PA)	2.4	30.9	No	Yes	Yes	Yes	44.2	39.6	No	5	12
Rhode Island (RI)	3.4	75.0	No	No	No	Yes	90.5	58.8	Yes	0	2
South Carolina (SC)	2.7	21.6	No	No	No	Yes	51.6	24.9	Yes	3	1
South Dakota (SD)	4.7	0.0	No	No	No	No	31.0	85.3	No	0	2
Tennessee (TN)	1.9	3.9	Yes	No	No	Yes	50.9	32.3	Yes	2	4
Texas (TX)	0.8	9.8	No	No	No	Yes	28.0	21.9	No	6	7
Utah (UT)	1.4	2.3	No	No	No	Yes	34.9	46.7	No	1	0
Vermont (VT)	14.9	37.6	Yes	No	No	Yes	82.5	86.2	Yes	1	7
Virginia (VA)	3	1.6	No	No	No	Yes	56.7	24.0	Yes	8	12
Washington (WA)	2.3	65.3	Yes	No	No	Yes	48.5	65.8	Yes	5	8
West Virginia (WV)	5.1	35.5	No	No	No	Yes	82.5	82.1	Yes	0	4
Wisconsin (WI)	5.3	45.8	No	No	No	Yes	48.9	63.9	Yes	7	2
Wyoming (WY)	8.3	0.0	No	No	No	Yes	31.4	77.5	No	0	0

* Median across 48 states and D.C.

**As of 2018, there are three active tribal food policy councils at various phases of development, including: Mvskoke Food Sovereignty Initiative Oklahoma, Pryor Food Policy Council Oklahoma, and Hoopa Food Policy Council California. For the purposes of this indicator, tribal food policy councils were excluded.

APPENDIX 1

STATE INDICATORS ON FRUITS AND VEGETABLES— DATA DEFINITIONS AND SOURCES

Indicators on Fruit and Vegetable Access for Individuals and Families

1) Number of Farmers Markets per 100,000 Residents, 2017

This indicator represents number of farmers markets per 100,000 state residents in 2017.

- a. Numerator: Total farmers markets per state. United States Department of Agriculture, Agriculture marketing Service. Local Food Directories: National Farmers Market Directory Data accessed January 18, 2018. Available at: <https://www.ams.usda.gov/local-food-directories/farmersmarkets>
- b. Denominator: Population Estimates United States Census Bureau. July 1, 2017. Date accessed December 31, 2017. Available at: <https://www.census.gov/data/tables/2017/demo/popest/state-detail.html>. Table Name: Estimates of the Total Resident Population and Resident Population Age 18 Years and Older for the United States, States, and Puerto Rico: July 1, 2017 (Column B, "Total Resident Population").
- c. This indicator is comparable to the indicator in both the 2009 and 2013 CDC *State Indicator Report on Fruits and Vegetables*.

2) Percentage of Farmers Markets Accepting WIC Farmers Market Nutrition Program Vouchers, 2017

This indicator represents the percentage of farmers markets accepting WIC Farmers Market Nutrition Program vouchers in 2017.

- a. Numerator: Number of farmers markets that accept WIC Farmers Market Nutrition Program vouchers.
- b. Denominator: Total number of farmers markets per state.
- c. This indicator is comparable to the indicator in both the 2009 and 2013 CDC *State Indicator Report on Fruits and Vegetables*.

Source: United States Department of Agriculture, Agriculture Marketing Service. Local Food Directories: National Farmers Market Directory (2017). Data accessed January 18, 2018. Available at <https://www.ams.usda.gov/local-food-directories/farmersmarkets>.

3) State Policy on Food Service Guidelines, 2014

This indicator represents whether a state's legislative body enacted or adopted a policy on food service guideline as of December 31, 2014.

- a. Types of policies included: state bills, statutes, regulations, and executive orders.
 1. Data Sources: WestlawNext (Thomas Reuters, New York, NY); The CDC's Chronic Disease State Policy Tracking System; Lexis-Nexis an online commercial legal database.
- b. The following inclusion and exclusion criteria were used to identify relevant state Food Service Guidelines Policies:
 2. Inclusion Criteria:
 - i. The policy had to specify the development or reference nutritional guidelines that apply to foods and beverages served or sold to adult populations in government-owned or -controlled facilities, including conferences and on-site or off-site events **OR** the policy had to specify the development of task forces or other committees delegated to develop food service guidelines.
 3. Exclusion Criteria:
 - i. Policies that dealt with only children and adolescents.
 - ii. Policies that dealt with only food insecurity.
 - iii. Policies that were defined as "standards of care," or policies that maintain care that is expected of the average, prudent provider, but do not operationalize nutritional guidelines.
- c. This indicator was not included in CDC's *State Indicator Report on Fruits and Vegetables, 2009, or the State Indicator Report on Fruits and Vegetables, 2013*.

Source: Zaganjor H, Kendrick KB, Warnock AL, et al. Food Service Guideline Policies on State Government-Controlled Properties. *Am J Health Promot*. Available at <http://journals.sagepub.com/doi/abs/10.1177/0890117116667117>.

Indicators on Fruit and Vegetable Access for Children

4) State ECE Licensing Regulations that Align with National Standards for Serving Fruits and Vegetables, 2016

This indicator represents whether a state adopted ECE licensing regulations that align with the national standards for serving fruits and vegetables.

- a. Data for this indicator were derived from the National Resource Center for Health and Safety in Child Care and Early Education's (NRC) analysis of the degree to which state ECE regulations for licensed childcare centers, large or group family childcare homes, and small family childcare homes align with national standards for serving fruits and vegetables.
- b. The national standards are defined by the *3rd Caring for Our Children: National Health and Safety Performance Standards for Early Care and Education Programs*. The fruit and vegetable standard specifies that children be served:
 - A variety of fruits, especially whole fruits (NB3) **AND** a variety of vegetables, specifically dark green, orange, deep yellow, and root vegetables (NB2)
- c. States whose ECE licensing regulations were given a score of 4, meaning the licensing regulation fully addresses the NB3 and NB2 standards across all 3 childcare types, are designated as "yes." States that received a score of 1, 2, or 3 in any childcare type were designated as "no." States that received a score of "0" for a childcare type do not regulate that childcare type, and that childcare type was not included in the analysis.
- d. Because of methodological differences, this indicator is not comparable to CDC's State Indicator Report on Fruits and Vegetables, 2009, or CDC's *State Indicator Report on Fruits and Vegetables, 2013*.

Source: National Resource Center for Health and Safety in Child Care and Early Education. *Achieving a State of Healthy Weight: 2016 Update*. Aurora, CO: University of Colorado Denver; 2017. Available at: <http://nrckids.org/HealthyWeight/Archives>.

5) State Farm to School or Farm to ECE Policy in Place, 2002-2017

This indicator represents whether a state adopted or enacted a farm to school or farm to ECE policy during January 1, 2002–March 31, 2017. Data for this indicator is accurate as of March 31, 2017; enacted policies may no longer be in effect because of repeal, sunset, or loss of appropriated funding.

- a. State policies included in this indicator support any of the 3 core elements of farm to school programs that target K-12 or ECE settings. The 3 core elements of farm to school programs, include: local procurement, agricultural and food education, and school gardens.
- b. Policy types included state legislative bills or resolutions.
- c. Policy Inclusion Criteria:
 1. For a policy to be included in this indicator, the status had to be one of the following:
 - i. Adopted or enacted.
 - ii. Codified in state code.
 - iii. Enacted; yet to be codified in state code.
 - iv. Appropriated funding in annual state budget documents.
 - v. Codified in state statute, but repealed. These policies were enacted by the state legislative body and demonstrate support for farm to school programs and activities for a period of time.
- d. Policy Exclusion Criteria:
 1. Policies coded as "pending" or "dead."
 2. Policies coded as adopted or enacted, but with farm to school provisions removed from bill language before its adoption.
- e. Because of methodological differences, this indicator is not comparable to CDC's *State Indicator Report on Fruits and Vegetables, 2009*, or CDC's *State Indicator Report on Fruits and Vegetables, 2013*.

Source: National Farm to School Network, State Farm to School Legislative Survey: 2002–2017. Data accessed December 31, 2017. Available at: <http://www.farmtoschool.org/Resources/State%20Farm%20to%20School%20Legislative%20Survey%202002-2017.pdf>.

6) Percentage of School Districts Participating in Farm to School Programs, 2014

This indicator represents the number of school districts that report participating in farm to school programs relative to the total number of school districts in the state in 2014.

- a. Data were derived from USDA's 2015 Farm to School Census survey, Question #2:

Farm to school activities generally center around the procurement of local or regional foods, agriculture or nutrition-based educational activities, such as:

- *Serving local food products in school (meals and snacks).*
- *Serving local food products in classrooms (snacks, taste tests, educational tools).*
- *Conducting educational activities related to local foods, such as farmers in the classroom and culinary education focused on local foods, field trips to farms, farmers markets or food processing facilities, and educational sessions for parents and community members.*
- *Creating and tending school gardens (growing edible fruits and vegetables).*

Based on the definition above, did your district or any schools in your district participate in farm to school activities during the 2013–2014 school year? (Please check one) Response options included:

- a. Yes.
 - b. No, but started activities in the 2014–2015 school year.
 - c. No, but plan to start activities in the future.
 - d. No activities currently and no plans.
 - e. I don't know.
- b. For the purposes of this indicator, answer options (a) and (b) were counted as participating in farm to school programs. Access the calculated percentages for answer options from the following source: <https://farmtoschoolcensus.fns.usda.gov/about>. (Use Excel file, [2015 Farm to School Census State-National Data_1.11.17_web.xlsx](#).)
- c. Use Excel sheet: 2015 F2S Census State. Column B denotes variable "pctf2s2013," which is the percentage of responding districts that had farm to school activities in school year 2013–2014. Column C denotes variable "pctf2s2014," which is the percentage of responding districts that started activities in school year 2014–2015.
- d. This indicator was not included in CDC's *State Indicator Report on Fruits and Vegetables, 2009*, or CDC's *State Indicator Report on Fruits and Vegetables, 2013*.

Source: United States Department of Agriculture. Farm to School Census (2015). Data accessed December 31, 2017. <https://farmtoschoolcensus.fns.usda.gov/about>. Document Name: [2015 Farm to School Census State-National Data_1.11.17_web.xlsx](#).

7) Percentage of Middle and High Schools Offering Salad Bars, 2016

This indicator represents the number of middle and high schools that offer a self-serve salad bar relative to total schools surveyed. The data were weighted to reflect the likelihood of principals or teachers being selected, and to adjust for differing patterns of nonresponse.

- a. Numerator: Number of middle and high schools that responded (via principal survey) "(j) Offered a self-serve salad bar to students" to Q.35 "During this school year, has your school done any of the following? (Mark yes or no for each.)" States with estimates are those with weighted data; (at least 70% of the principals in the sampled schools completed the survey).
- b. Denominator: Total number of all middle and high schools surveyed.
- c. The national data for this indicator represents the median percentage among 48 states and the District of Columbia.
- d. This indicator was not included in CDC's *State Indicator Report on Fruits and Vegetables, 2009*, or CDC's *State Indicator Report on Fruits and Vegetables, 2013*.

Source: CDC 2016 School Health Profiles, School Principal Survey. Data accessed December 31, 2017. Available at Table 31b. Percentage of Secondary Schools That Implemented Strategies to Promote Healthy Eating During the Current School Year, Selected US Sites: School Health Profiles, Principal Surveys, 2016. https://www.cdc.gov/healthyyouth/data/profiles/pdf/2016/2016_Profiles_Report.pdf.

Indicators on Food System Support for Fruit and Vegetables

8) State Food Policy Council, 2018

This indicator represents whether an active state food policy council exists (yes/no).

- a. Active state food policy councils were identified by using the online Food Policy Council Directory maintained on the Johns Hopkins Center for a Livable Future website, as of the accessed date. State food policy councils included in this national directory are identified by ongoing self-registration and verified via the annual survey of food policy councils conducted by John Hopkins Center for a Livable Future. This national directory is a continuation of the Community Food Security Coalition's tracking of active state and local food policy councils beginning in 2012.
- b. For this indicator, states with a food policy council are indicated with a yes or no and may be at different phases of development.
- c. This indicator is comparable to the indicator in both the 2009 and 2013 CDC *State Indicator Report on Fruits and Vegetables*.

Source: John Hopkins Center for a Livable Future. Food Policy Council Directory. Data accessed, January, 23rd, 2018. Retrieved from: <http://www.foodpolicynetworks.org/directory/online/>.

9) Number of Local Food Policy Councils, 2018

This indicator represents the number of active local food policy councils within each state.

- a. Active local food policy councils were identified by using the online Food Policy Council Directory maintained on the Johns Hopkins Center for a Livable Future website, as of the accessed date. Local food policy councils included in this national directory are identified by ongoing self-registration and verified via the annual survey of food policy councils conducted by John Hopkins Center for a Livable Future. This national directory is a continuation of the Community Food Security Coalition's tracking of active state and local food policy councils beginning in 2012.
- b. For this indicator, active local food policy councils are enumerated and may operate at the city, municipal, county, district, or regional level. Food policy councils included in this indicator may be at different phases of development.
- c. This indicator is comparable to the indicator in both the 2009 and 2013 CDC *State Indicator Report on Fruits and Vegetables*.

Source: John Hopkins Center for a Livable Future. Food Policy Council Directory. Data accessed, January, 23rd, 2018. Retrieved from: <http://www.foodpolicynetworks.org/directory/online/>.

10) Number of Food Hubs, 2017

This indicator represents the total number of food hubs within a state.

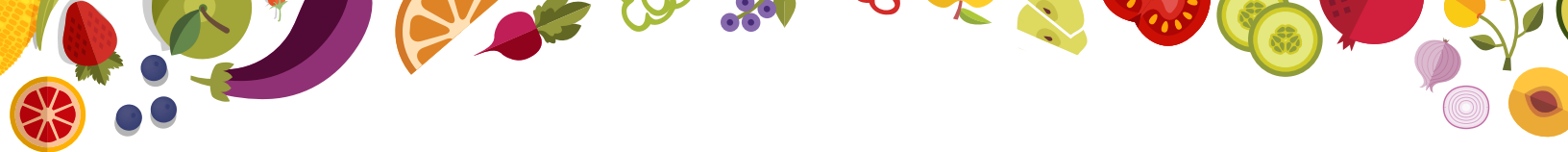
- a. USDA defines a food hub as a business or organization that actively manages the aggregation, distribution, and marketing of source-identified food products primarily from local and regional producers to strengthen their ability to satisfy wholesale, retail, and institutional demand.
- b. The number of active food hubs by state was based on the list available on the USDA, Agricultural Marketing Service, food hubs directory, as of the accessed date. The online directory is maintained by USDA, Agriculture Marketing Service. It provides a listing of active US food hubs collected through ongoing self-registration. It does not represent a census of active hubs.
- c. This indicator is comparable to the indicator in CDC's *State Indicator Report on Fruits and Vegetables, 2013*.

Source: United States Department of Agriculture. Agriculture Marketing Services, Food Hub Directory (2017). Data accessed December 31, 2017. Retrieved from <https://www.ams.usda.gov/local-food-directories/foodhubs>.

REFERENCES

- 1) Lim SS, Vos T, Flaxman AD, et al. A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010. *Lancet*. 2012;380(9859):2224–60.
- 2) Murray CJ, Abraham J, Ali MK, et al. The state of US health, 1990–2010: burden of diseases, injuries, and risk factors. *JAMA*. 2013;310(6):591–606.
- 3) US Department of Health and Human Services and US Department of Agriculture. 2015–2020 *Dietary Guidelines for Americans*. 8th Edition. December 2015. Available at <http://health.gov/dietaryguidelines/2015/guidelines/>
- 4) Lee-Kwan SH, Moore LV, Blanck HM, et al. Disparities in state-specific adult fruit and vegetable consumption — United States, 2015. *MMWR*. 2017;66:1241–1247.
- 5) Moore, LV, Thompson FE, Demissie Z. Percentage of youth meeting federal fruit and vegetable intake recommendations, Youth Risk Behavior Surveillance System, United States and 33 states, 2013. *Journal of the Academy of Nutrition and Dietetics*. 2017;117(4):545–553.
- 6) Centers for Disease Control and Prevention (CDC). Strategies to Prevent Obesity and Other Chronic Diseases: The CDC Guide to Strategies to Increase the Consumption of Fruits and Vegetables. Atlanta: U.S. Department of Health and Human Services; 2011. <http://www.cdc.gov/obesity/resources/recommendations.html>
- 7) Committee on Accelerating Progress in Obesity Prevention. Accelerating progress in obesity prevention: solving the weight of the nation. National Academies Press; 2012. <http://www.nationalacademies.org/hmd/Reports/2012/Accelerating-Progress-in-Obesity-Prevention.aspx>
- 8) Afshin A, Penalvo J, Del Gobbo L, et al. CVD prevention through policy: a review of mass media, food/menu labeling, taxation/subsidies, built environment, school procurement, worksite wellness, and marketing standards to improve diet. *Current Cardiology Reports*. 2015; 17(11):98.
- 9) Mozaffarian D. Dietary and policy priorities for cardiovascular disease, diabetes, and obesity: a comprehensive review. *Circulation*. 2016;133(2):187–225.
- 10) Centers for Disease Control and Prevention. National Center for Chronic Disease Prevention and Health Promotion, Division of Nutrition, Physical Activity, and Obesity. Healthy Food Environments [online]. Accessed February 6, 2018. URL: <https://www.cdc.gov/obesity/strategies/healthy-food-env.html>
- 11) Larson NI, Story MT, Nelson MC. Neighborhood environments: disparities in access to healthy foods in the U.S. *Am J Prev Med*. 2009;36:74–81.
- 12) Freedman DA, Vaudrin N, Schneider C, et al. Systematic review of factors influencing farmers' market use overall and among low-income populations. *Journal of the Academy of Nutrition and Dietetics*. 2016;116(7):1136–1155.
- 13) Freedman DA, Choi SK, Hurley T, et al. A farmers market at a federally qualified health center improves fruit and vegetable intake among low-income diabetics. *Preventive Medicine*. 2013;56(5):288–292.
- 14) McCormack LA, Laska MN, Larson NI et al. Review of the nutritional implications of farmers markets and community gardens: a call for evaluation and research efforts. *Journal of the American Dietetic Association*. 2010;110(3):399–408.
- 15) Olsho LE, Payne GH, Walker DK, et al. Impacts of a farmers market incentive program on fruit and vegetable access, purchase and consumption. *Public health nutrition*. 2015;18(15):2712–2721.
- 16) Centers for Disease Control and Prevention. Smart Food Choices: How to Implement Food Service Guidelines in Public Facilities. Atlanta, GA: US Dept. of Health and Human Services; 2014. <https://www.cdc.gov/obesity/downloads/smart-food-choices-how-to-implement-food-service-guidelines.pdf>
- 17) Food Service Guidelines Federal Workgroup. *Food Service Guidelines for Federal Facilities*. Washington, DC: U.S. Department of Health and Human Services; 2017. https://www.cdc.gov/obesity/downloads/guidelines_for_federal_concessions_and_vending_operations.pdf
- 18) National Cancer Institute. Usual dietary intakes: food intakes, US population, 2007–10. <http://appliedresearch.cancer.gov/diet/usualintakes/pop/2007-10/#findings>
- 19) Maynard M, Gunnell D, Ness AR, et al. What influences diet in early old age? Prospective and cross-sectional analyses of the Boyd Orr cohort. *Eu J Public Health* 2006;16(3):315–323.
- 20) Centers for Disease Control and Prevention. School health guidelines to promote healthy eating and physical activity. *MMWR*. 2011;60(RR-5).

- 21) Institute of Medicine. Early childhood obesity prevention policies. Washington, DC: The National Academies Press; 2011. <https://www.nap.edu/catalog/13124/early-childhood-obesity-prevention-policies>
- 22) Institute of Medicine. Child and Adult Care Food Program: aligning dietary guidance for all. Washington, DC: The National Academies Press; 2011. <https://www.nap.edu/catalog/12959/child-and-adult-care-food-program-aligning-dietary-guidance-for>
- 23) American Academy of Pediatrics; American Public Health Association; National Resource Center for Health and Safety in Child Care and Early Education. Preventing childhood obesity in early care and education. Aurora, CO: National Resource Center for Health and Safety in Child Care and Early; 2012.
- 24) Hoffman JA, Schmidt EM, Wirth C, et al. Farm to preschool: The state of the research literature and a snapshot of national practice. *Journal of Hunger & Environmental Nutrition*. 2017 Oct 2;12(4):443-465.
- 25) Harris D, Lott M, Lakins V, et al. Farm to institution: Creating access to healthy local and regional foods. *Advances in Nutrition*. 2012 May 4;3(3):343-9.
- 26) National Farm to School Network. About Farm to School. <http://www.farmtoschool.org/about/what-is-farm-to-school>. Accessed November, 21 2017.
- 27) U.S. Department of Agriculture, Food and Nutrition Service. Farm to School Program. <https://www.fns.usda.gov/farmtoschool/farm-school>. Accessed on February 14, 2018.
- 28) Harris D, Seymour J, Grummer-Strawn L, et al. Let's move salad bars to schools: a public-private partnership to increase student fruit and vegetable consumption. *Childhood Obesity (Formerly Obesity and Weight Management)*. 2012 Aug;8(4):294-297.
- 29) Terry-McElrath YM, O'Malley PM, Johnston LD. Accessibility over availability: associations between the school food environment and student fruit and green vegetable consumption. *Childhood Obesity*. 2014;10(3):241-50.
- 30) Centers for Disease Control and Prevention. National Center for Chronic Disease Prevention and Health Promotion, Overweight and Obesity, Salad Bars to School. <https://www.cdc.gov/obesity/strategies/saladbars2schools.html>. Accessed February 6, 2018.
- 31) U.S. Department of Health and Human Services. The Surgeon General's Vision for a Healthy and Fit Nation. Rockville, MD: U.S. Department of Health and Human Services, Office of the Surgeon General, January 2010.
- 32) Centers for Disease Control and Prevention. Spectrum of Opportunities for Obesity Prevention in the Early Care and Education Setting. Atlanta, GA: US Department of Health and Human Services; 2012. <https://www.cdc.gov/obesity/downloads/spectrum-of-opportunities-obesity-prevention.pdf>. Accessed February 8, 2018.
- 33) Hales CM, Carroll MD, Fryar CD, et al. Prevalence of obesity among adults and youth: United States, 2015-2016. NCHS data brief, no 288. Hyattsville, MD: National Center for Health Statistics. 2017.
- 34) Laughlin, L. Who's minding the kids? Child care arrangements: Spring 2011. Current population reports, P70-135. Washington, DC: US Census Bureau. 2013.
- 35) National Resource Center (NRC) for Health and Safety in Child Care and Early Education. Achieving a state of healthy weight: 2016 update. Aurora, CO: University of Colorado Denver. 2017.
- 36) Low SA, Adalja A, Beaulieu E, et al. Trends in US local and regional food systems, AP-068. US Department of Agriculture, Economic Research Service. 2015.
- 37) Harris D, Lott M, Lakins V, et al. Farm to institution: Creating access to healthy local and regional foods. *Advances in Nutrition*. 2012 May 4;3(3):343-9.
- 38) McFadden DT, Conner D, Deller S, et al. The economics of local food systems: A toolkit to guide community discussions, assessments, and choices. US Department of Agriculture, Agricultural Marketing Service. 2016.
- 39) Martinez, Steve, et al. Local Food Systems: Concepts, Impacts, and Issues, ERR 97, U.S. Department of Agriculture, Economic Research Service, 2010. https://www.ers.usda.gov/webdocs/publications/46393/7054_err97_1_.pdf?v=42265
- 40) Harper A, Shattuck A, Holt-Giménez E, et al. Food policy councils: Lessons learned. *Institute for food and development policy*. 2009; 1-63. <https://foodfirst.org/wp-content/uploads/2014/01/DR21-Food-Policy-Councils-Lessons-Learned-.pdf>
- 41) Sussman LI, Bassarab KA. Food policy council report 2016. Johns Hopkins Center for a Livable Future. 2016. https://assets.jhsph.edu/clf/mod_clfResource/doc/FPC%20Report%202016_Final.pdf
- 42) Barham, J., Tropp, D., Enterline, K., et al. *Regional food hub resource guide* (No. 145227). 2012. <http://dx.doi.org/10.9752/MS046.04-2012>
- 43) Hardy J, Hamm M, Pirog R, et al. Findings of the 2015 National Food Hub Survey. East Lansing, MI: Michigan State University Center for Regional Food Systems and The Wallace Center at Winrock International. 2016.



FOR MORE INFORMATION, PLEASE CONTACT

Centers for Disease Control and Prevention

1600 Clifton Road NE Atlanta, GA 30333

Tel 1.800.CDC.INFO (232.4636/TTY. 1.888.232.6348)

www.cdc.gov/nutrition

Publication date: June 2018

