JANUARY 2022

THE NEW JERSEY FOOD SYSTEM IN A NUTSHELL

A HOLISTIC VIEW OF THE NEW JERSEY FOOD SYSTEM AND ITS ECONOMIC, ENVIRONMENTAL, AND SOCIAL IMPACTS

NEW JERSEY FOOD DEMOCRACY COLLABORATIVE

INTRODUCTION

This report is a supplement to the *NJ Roadmap for Food System Resilience* report released by the New Jersey Food Democracy Collaborative in December 2021. *The New Jersey Food System in a Nutshell* aggregates data from multiple recent significant reports by leading NJ organizations and state agencies on critical issues including fresh food access and equity; climate change mitigation, adaptation and resilience; economic justice; and sustainable food and agricultural waste.

In June 2020, amidst the global pandemic, several dozen stakeholders from across New Jersey convened virtually and decided there was a need to take a holistic look at the state's food system. Over the course of nine months, the group was joined by over 100 others from the food and farming sectors in discussions about how we might approach systemic, structural transformation to foster greater cooperation, equity, and resilience. The response to that original call to action has been overwhelming and clear: a food system approach based on cross-sector collaboration that examines the system's structure through a racial and economic justice lens and prioritizes resilience is what contemporary challenges require.

As part of that learning, a review of reports related to the New Jersey food system, its economics, health, environmental and social impacts were conducted. This report attempts to synthesize multiple sector challenges, opportunities, and impacts to provide a holistic view of the New Jersey food system and what we need to address collectively. The information in this document is meant to be used by anyone: law and policymakers, food access professionals, farmers, retailers, and concerned food citizens alike. The challenge to create a more equitable, just, and resilient food system will require all of us to work collaboratively and synergistically.

We hope you will find this framing of the challenges in *The New Jersey Food System in a Nutshell* report and the *NJ Roadmap for Food System Resilience* for action that we've laid out here to be useful. We look forward to working with you on the recommendations. Thank you for reading.

ACKNOWLEDGEMENTS

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From left: Sunflowers, cover crop, and compost. Photos from the Stockton University Sustainability Farm.

THE NEW JERSEY FOOD DEMOCRACY COLLABORATIVE

Since the New Jersey Food Democracy Collaborative's (NJFDC) founding in June 2020, it has strived to create an opportunity to connect New Jersey food system stakeholders to solve common issues. [1] Through a comprehensive needs assessment process which included 11 stakeholder discussion groups with 143 participants from 20 different food system sectors that aimed to better understand the food system and identify shared observations, concerns, frustrations, and thoughts on solutions. Consistently, stakeholders voiced concern about the lack of connection between programs and sectors and the need for greater collaboration, sharing of information and resources, and above all, the need for addressing structural inequity in the food system to improve overall resilience.

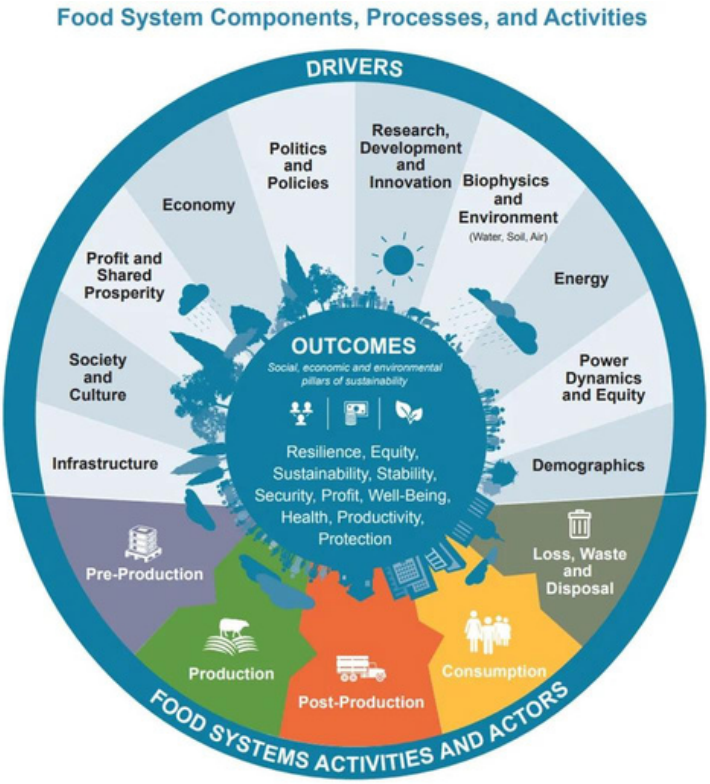


Figure 2. The characteristics and outputs of a food system are shaped and determined by drivers such as policies, infrastructure, and demographics. Equity, or inequity; resilience or vulnerabilities are outcomes of a food system. [2]

WHY A SYSTEMS PERSPECTIVE?

A systems approach invites us to see and try to understand what is happening in our state or local food system as a result of the **drivers, the inputs, and the relationships** that shape it. The result of these are the **outcomes and characteristics** of the food and farming system of our state.. As we know, currently, some of the characteristics and outcomes of our food system are beneficial, and some are problematic. The productivity, sustainability, equity, and resilience of the food system are outcomes of it.

Understanding the relationships and connections that make up our state's food system is important because it helps us see where it makes sense to focus our energy for **improving the outcomes**. For example, where partnership building or program connections are most impactful, or where there are gaps or weaknesses

or gaps that need addressing. To see these connections, we must have a diversity of knowledge and experience at the table. We all must strive to be more open, transparent, inclusive and accessible, and we must build trust with each other and with our institutions.

The NJFDC seeks to help advance a shift in perspective in NJ toward a more holistic systems perspective, and the associated shift in processes and public policy. This perspective helps us understand the challenges faced in our communities -- such as a lack of access to healthy food, or the need to reduce the ecological footprint of food and farming activities -- as being nearly impossible to tackle without collaboration. Functioning collaboration between community residents, businesses, and the institutions that govern and shape the food environments for all of us is critical and we applaud those of you here today who have been modeling healthy collaboration in your work.

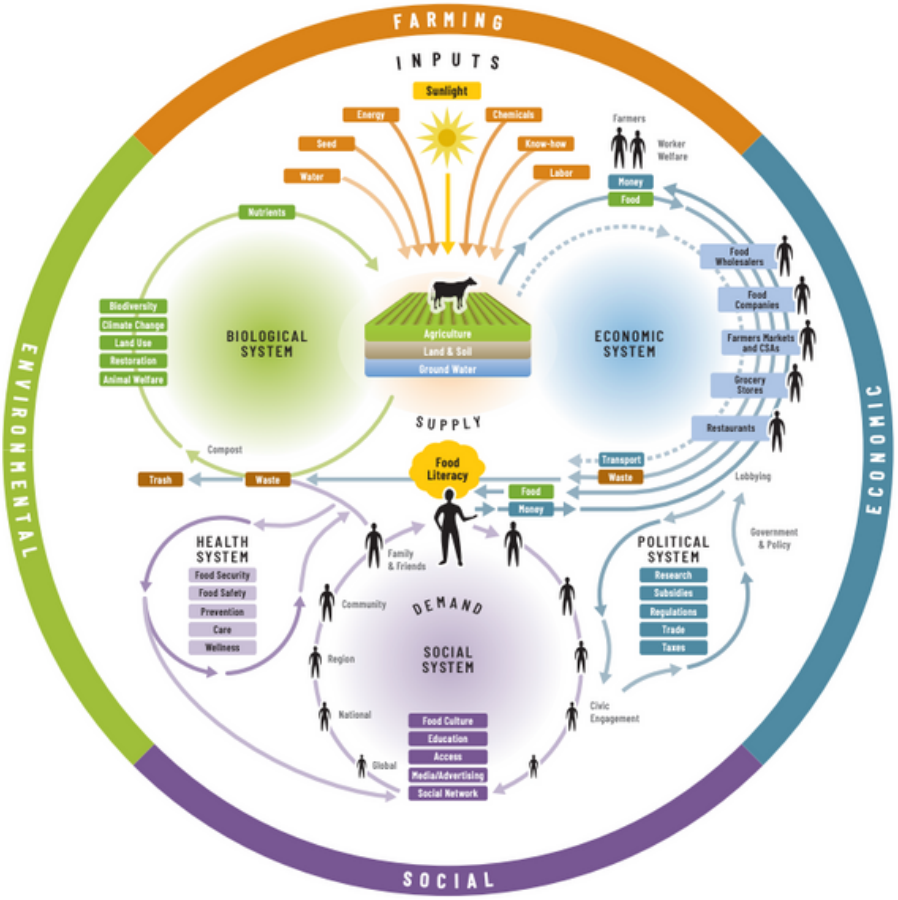


Figure 2. A food system is the interaction of several natural and human systems, supplying inputs and producing outputs, some desired, some are negative externalities. This is the Nourish Food System Map from nourishlife.org. [3]

WHAT ARE FOOD SYSTEMS?

Food systems embrace the entire range of biological processes, actors, and their interlinked value-adding activities involved in the production, aggregation, processing, distribution, consumption, and disposal (loss or waste) of food products that originate from agriculture (including livestock), forestry, fisheries, and food industries, and the broader economic, societal, and natural environments in which they are embedded. [4]

The pandemic exposed the interrelated nature of the food system, as the shocks from public health measures and the associated economic crises disrupted households' abilities to access food and the operations of supply chains and retail activities of the food industry. Food workers, farmworkers, slaughterhouses, grocery stores, and retailers were acknowledged to be the "essential workers" that they are, and upon which much of the rest of economic activity depends.

Resilience or vulnerability is an attribute of both ecosystems upon which food production depends, and the social, economic, and political institutions that shape the availability of, and access to nutritious food on a reliable basis. The critical dimension that distinguishes systems resilience from complex adaptive systems resilience is adaptability. It is not just adaptation—change—in response to conditions. It is the capacity of systems—households, people, communities, ecosystems,—to generate new ways of operating.

The significance for local food systems is the degree to which stakeholders are interested in simply enabling existing local systems to manage shocks, and return to "normal" (the status quo ante), or that local food systems would develop the capacities to transform in the face of stress and shocks and "build back better" – not only managing the shocks and stresses but transforming the system itself to minimize the emergence of such shocks (where possible) or to reduce vulnerabilities. [5]

The latter is clearly more demanding of capabilities and resources. But climate change and potentially sustained higher or increasing food prices, suggest that there is no returning to "normal" because the terrain of local food systems is itself being transformed due to ecological and economic stresses outside of the control of food systems and the stakeholders who control them.

Successful ongoing adaptation is an issue of the governance of food systems, including both the availability of data and knowledge to make evidence-based decisions and the inclusion of the widest breadth of stakeholder interests. This helps build robust complex adaptive mechanisms, incorporating relevant information and multi-stakeholder deliberation and decision-making.

The food system in the context of other systems (positive systems concept).
Source: Adapted from von Braun (2017) [6]

WHAT IS A RESILIENT FOOD SYSTEM?

A *resilient food system* has features and characteristics that function to ensure food security under all circumstances, for all people, at all times - even during times of crisis or disruption - and functions to restore environmental damage and address historic inequities. [7,8] It is place-based and requires engagement and participation from the grassroots. Bottom-up input and action help to shape a food system that works for everyone and prioritizes environmental health and sustainability.

One of the core strengths of a resilient and regenerative food system is diversity: diversity in the scale of farm sizes and of crops produced; diversity of markets and revenue streams for farmers and options for consumers; economic diversity and inclusion of consumers; and diversity of pathways for disposal, recycling, and redirection of excess food. [9] Resilient systems also have built-in redundancies so that if one component fails, there are others to take its place, allowing the system to continue to function, improve and even thrive. [10]

A system is not resilient when there are inequities and injustices - when certain groups or components of the food system are disproportionately vulnerable, excluded, or bear a greater burden of the negative externalities of the system than others. Climate-related impacts on the food system are a threat to its resilience.

WHY EQUITY, JUSTICE, & DEMOCRACY AS KEY PRINCIPLES?

Too often discussions of food security discuss people as if they are passive recipients of food, typically emergency food, and not active agents involved in the governance and transformation of the food system, agents with **rights**.

Take the debate over food deserts as one illustrative example.

Conventional discussions of “food deserts” frame unequal access to nutritious food as an ahistorical, technical phenomenon that can be addressed by subsidizing the entry of grocery stores into those neighborhoods. In reality, “food deserts” have been produced through historical and structural processes, such as historic redlining economic marginalization, racial discrimination, and segregation. Food justice leaders utilize the term ‘food apartheid’ rather than ‘food desert’ to focus on the processes and structures that produce neighborhoods with limited access to fresh, affordable, and quality produce. [11]

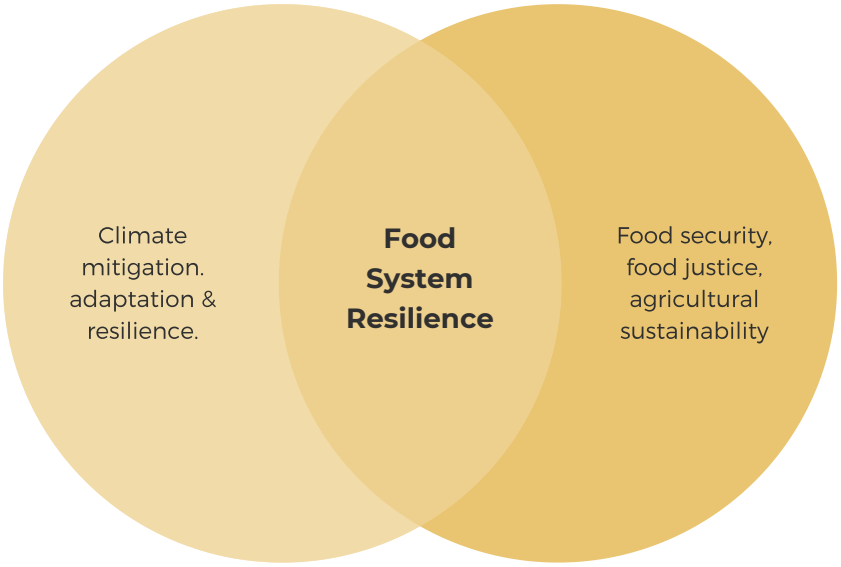
that urban gardens improve healthy food access and that garden-based educational interventions can lead to increased fruit and vegetable intake. [12,13]

Conventional approaches have focused on subsidizing the establishment of grocery stores in "food deserts." [See note below] But recent research finds that financial incentives to open new supermarkets in underserved areas are not associated with changes in food purchasing or diet quality, while providing low-income households with financial incentives (often called nutrition incentives) to buy fruits and vegetables did improve dietary behaviors. [15,16,17,18,19]

The NJFDC supports the establishment of a food system in New Jersey that is equitable, democratic, sustainable, and just as the approach that is most effective at achieving the goals of ensuring a food system that works for all and is most just in terms of addressing the historical and contemporary structures of disadvantage, marginalization, and exclusion. Below we present the NJ food system in a nutshell, identify the main challenges, and outline the NJFDC's approach to building an effective response.

WHAT IS FOOD DEMOCRACY?

In a democratic food system, people have agency over their food environment; they have access to information about programs and policies; institutions that manage programs that impact food and agriculture are transparent and accessible; people have a voice in decision-making about their food system at all levels, and they can participate in shaping it. [20] A closely related and complementary term is food sovereignty -- the right of all people to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems. [21,22]



Note: From 2004 to 2016, over 1,000 supermarkets opened in neighborhoods around the country that previously had been food deserts. The federal Healthy Food Financing Initiative leveraged over $1 billion in financing for grocers in under-served areas. Cities such as Houston and Denver have sought to institute similar measures. [14]

CLIMATE CHANGE & THE NJ FOOD SYSTEM

Climate change is a core challenge to food system resilience; climate change puts already vulnerable communities and populations at greater risk of food insecurity. [23] Climate-related risks to food security can arise from both potential climate change impacts, like drought, flooding, and impacts already being experienced, like shifting precipitation patterns and new pests and diseases; these risks can be immediate and long-term. Key climate mitigation and adaptation opportunities exist in agriculture and throughout the food system that needs greater attention.

It has become abundantly clear and the scientific evidence shows that the impacts of climate change are already occurring in NJ. [24] Each of us must act decisively and urgently within our various spheres of influence to cut emissions from all sectors, including emissions from the production, distribution, consumption, and disposal of food.

Concurrently, there is an urgent need to adapt and build resilience into our agriculture production methods to reduce vulnerability and to help production thrive despite warmer temperatures, fewer frost-free days, more precipitation, more frequent heavy downpours, and less predictable seasons. Aggressively acting to implement both mitigation and adaptation strategies in the food system is how we will close the “resilience gap”.

Climate Change Impacts: How Will NJ Be Affected?

Agriculture & Food Supply

The productivity of crops and livestock are expected to change due to the climate induced changes in temperature and precipitation patterns.

Oceans & Marine Life

Ocean acidification not only threatens the health of the oceans, but also the economic value that people and industries depend on.

Socially Vulnerable Populations

Young children, elderly, socially or linguistically isolated, economically disadvantaged, and those with preexisting health conditions will be more at risk to health impacts from the combination of heat stress and poor urban air quality.

Climate Change Impacts: How will NJ Be Affected?
Excerpts from "State of New Jersey Climate Change Resilience Strategy". 2020. [24]

Although all seven of the priority areas of the NJ Draft Climate Resilience Strategy and the associated strategies and actions are indirectly supportive of resilience in the food system, the strategy does not address resilience with respect to the food system specifically.

The NJ Draft Climate Change Resilience Strategy acknowledges some of the risks to fisheries from ocean acidification to the marine shellfish industry and some risks to agriculture. And the strategy, in line with recent state regulations and legislation, rightly places environmental justice at the center of the climate resilience strategy. However, the strategy is short on concrete actions aimed at improving the resilience of the food system and reducing climate impacts that would increase food insecurity and other risks to already vulnerable communities.

For example, “agriculture” appears in only one action item of the draft strategy: “Create landowner assistance programs to encourage farmers, foresters, and other resource managers to incorporate changing future conditions into their management practices.”

There is an urgent need to examine the overall resilience of all five sectors of the food system -- production, processing, distribution, consumption/access, and disposal -- to identify opportunities to implement climate mitigation and adaptation measures, to reduce inequities that decrease resilience, and to include the agriculture, and the food system specifically in existing climate resilience efforts at the state and local levels.

2008 Rutgers, The State University of New Jersey

Photo credit: Kyle Smith, Smith Poultry

THE NEW JERSEY FOOD SYSTEM IN A NUTSHELL

The New Jersey food system impacts its 9.3 million state residents through the economic, environmental, and social impact of food. The food system accounts for one in five private-sector jobs and almost $56.9 billion annually in the state. [25]

Note: The data on the NJ food system comes from and includes economic and employment data on 5 main sectors combined: agricultural producers, food and beverage manufacturers, wholesalers, and retailers, and foodservice and drinking places.

Economic Impacts of the New Jersey Food System

The food system includes at least 500,000 people who grow, harvest, raise, process, manufacture, sell, and serve food or produce the inputs that go into its production. Food firms and agricultural operations directly employed about 14% of the state's total employment in 2017. Another 200,000 jobs were created in other industries as a result of the economic activity stimulated by food businesses, bringing the food system's total employment impact to over 700,000. In other words, 1 out of every 5 private-sector jobs (20.2%) were linked to the food system in 2017. [25]

Rutgers University researchers conservatively estimate that food firms and agribusinesses generated 10.7% of New Jersey's private-sector gross domestic product. The value-added created by food firms through "indirect and induced effects" amounted to $27.0 billion in 2017. Thus, the total impact on New Jersey's gross domestic product attributed to the food system was estimated to be $56.9 billion. In other words, approximately 1 out of every 10 dollars of economic activity in New Jersey was linked to the production, processing, or distribution of food. [25]

According to NOAA, NJ had the sixth largest domestic fish landings by value, at $189 million in 2019. NJ is the country's leading producer of Atlantic mackerel, surf clams, ocean quahogs, and second for sea scallops and squid. Aquaculture has revenues of about $5 million. [26]

The NJ food system is both made up of smaller elements – e.g., value chains, local food systems – and of course part of regional, national, and global food systems. How we manage the NJ food system has impacts in not only New Jersey, but the broader food systems in areas where NJ exports food and food products. Similarly, developments in global, national, and regional food systems influence the trajectory of the NJ food system whether that is environmental change due to climate change, extreme weather, economic shocks, public health crises like pandemics, and changes in technology and tastes that reshape food systems.

Tax Revenue

The New Jersey food system generated an estimated $3.3 billion in New Jersey state tax revenue in 2017. This estimate of state tax revenues includes sales and use tax ($2.4 billion), personal income tax ($691 million), and corporate business tax ($203 million). This comprises more than 13% of state tax revenues from those three tax revenue sources. This data is an undercount because it does not capture some of the contributions of the fishery sector. Fisheries data is included in some of the downstream food and beverage manufacturers, wholesalers, retailers, and foodservice industries. [25]

Environmental Impacts of the New Jersey Food System

The food system is both a source of negative environmental impacts as well as the victim of environmental degradation.

The environmental impacts of the food system include non-point source pollution from sediment, fertilizer, and pesticide run-off from farms, as well as emissions from various aspects of the food system, from fertilizer production and land management practices, raising of livestock, packaging and transportation of food, and food waste.

Non-point source pollution is the primary source of water pollution in the state. Nationally, nutrient runoff and sediment from agricultural land are the largest sources of NPS pollution. But we lack robust data in NJ on the specifically agricultural sources of non-point source pollution.

Climate Change

There is currently no reliable comprehensive data on the overall climate impacts of the New Jersey food system outside of agriculture. The most recent NJ emissions inventory identifies gross emissions from agriculture at 0.4 million metric tons of CO2e, about 0.36% of gross statewide emissions in 2018. [26]

Food waste is an important source of emissions. The NJ emissions inventory identifies total gross emissions from solid waste as 5.6 million metric tons of CO2e in 2018. [26] While there is no reliable statewide data for food waste, NJDEP estimates 22% of the solid waste stream is composed of food waste, leading to a rough estimate of food waste causing emissions of 1.23 million metric tons of CO2e. [27]

The emissions inventory identified land clearing as responsible for 1 million metric tons of CO2e in 2018. The latest agriculture census in 2017 showed an increase in land area in farms of just under 3% from 2012-2017. If trends have continued, some percentage of land clearing is due for agriculture while some could possibly be caused by land clearing for warehouses, industrial, or commercial food establishments that are part of the food system. The emissions inventory identified land clearing as responsible for 1 million metric tons of CO2e in 2018. The latest agriculture census in 2017 showed an increase in land area in farms of just under 3% (from 715,057 to 734,084 hectares) from 2012-2017. [28] If trends have continued, some percentage of land clearing is due for agriculture while some could possibly be caused by land clearing for warehouses, industrial, or commercial food establishments that are part of the food system.

Global estimates suggest that the food system accounts for 20-40% of global anthropogenic emissions. This includes emissions from crop and livestock production, on-farm energy use, land use and land-use change, domestic food transport, and food waste disposal. [29]

Globally, the farm gate is the site of the food system's largest contributions to emissions, followed by energy use in food supply chains. [29] Trends in agricultural development indicate that while land-use change emissions have decreased over time, emissions from energy use beyond the farm gate will become an increasingly prominent component of total food system emissions in the coming decades. Research suggests that for the US food system, the vast majority of emissions are due to land-based changes and energy use, followed by industry and food waste.

While the food system is a *source* of emissions causing climate change, it is also already experiencing the effects of climate change and other forms of environmental degradation.

- Degradation of natural resources upon which the food system depends, from pollution and climate change, the details of which are thoroughly detailed and beautifully laid out in Chapter 5 of the report details the impacts of climate change on resources and ecosystems.
- Likely impacts from climate change on the food system include: [30]
    - Increased occurrence of heatwaves and droughts can lead to reduced water supply capacity and reductions in agricultural productivity, which can lead to declines in food production and price increases.
    - Changes to precipitation and a decrease in winter-chill may make the state unsuitable for the production of certain key crops such as blueberries and cranberries.
    - Sea level rise and flooding can inundate agricultural lands and facilities that serve as part of the food system, increase saltwater intrusion into aquifers, and overwhelm sewage and stormwater systems, leading to greater pollution of waterways.
    - Ocean acidification can disrupt marine and shellfish fisheries.
    - Climate-induced increases in air pollution can cause damage to crops and forests". Non-point source pollution has negative effects on water quality as well as habitat for shellfish, freshwater, and marine fish species.
- Unregulated sprawl and poorly planned development can fragment habitat important for biodiversity and carbon sequestration and for watersheds used for drinking water and irrigation.
- One final example of environmental contamination with implications for the food system is the drinking water crisis in New Jersey, which is most severe among low-income communities of color, with Newark's the most well-known. [31] While Newark is a negative example of the human costs of delaying action for decades in the face of clear knowledge of the problem, it has more recently been an example of relatively rapid action, demonstrating that political pressure, political commitment, and resources can facilitate rapid action. That spirit needs to be pursued across the food system.

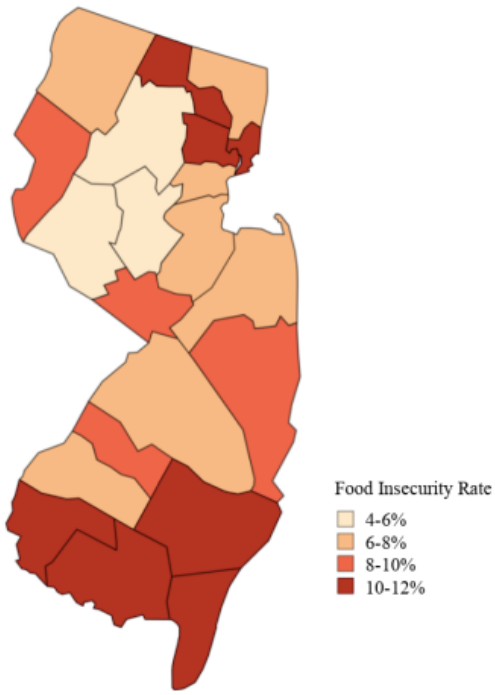
Social Impacts of the New Jersey Food System

Despite an abundance of food produced in the state, there remain gaps in the availability and access to food, especially in low-income communities. Additionally, our current food system has had detrimental impacts on the health of our state's residents.

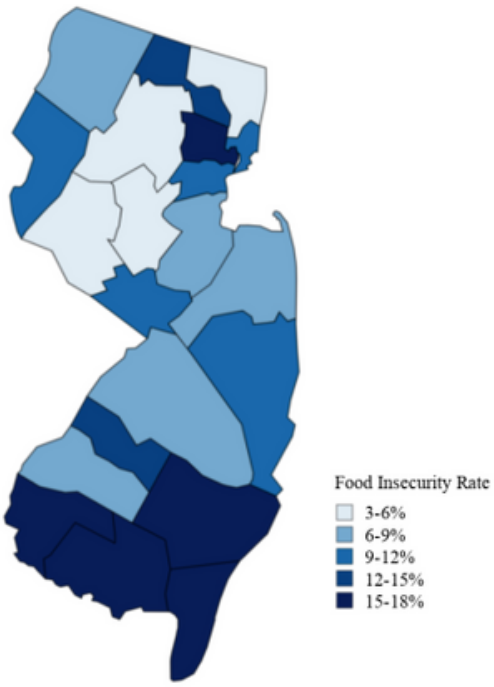
Food Insecurity in New Jersey

According to New Jersey State Health Assessment Data, 762,530 residents are facing food insecurity, of which 192,580 are children. Three counties, Cape May, Cumberland, and Hudson Counties had the highest rates of food insecurity across all ages (11.3%, 11.3%, and 11.1%, respectively) above the US rate (10.9%). Cumberland County had the highest child food insecurity rate (16.7%) along with four other counties (Essex, Salem, Atlantic, and Cape May) that surpassed the national rate of 14.6%. [32] Despite food assistance programs, school meal programs, and emergency food provider efforts, there still remains a great need to align policies and integrate efforts to support New Jersey residents.

FOOD INSECURITY RATE BY COUNTY, ALL PERSONS (2019)



FOOD INSECURITY RATE BY COUNTY, CHILDREN UNDER 18 (2019)



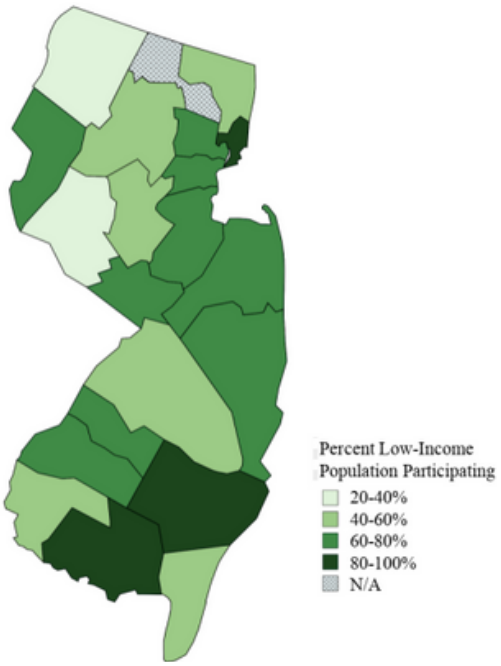
Source: U.S. Census Bureau Current Population Survey and the U.S. Department of Agriculture Economic Research Service, as presented in the Feeding America, Map the Meal Gap Report.

SNAP Participation Across the State

According to Hunger Free NJ, an estimated 300,000 New Jersey residents eligible for federal food assistance programs are not accessing them. Only 56% of New Jersey's low-income elderly population and 71% of low-income residents overall were participating in SNAP in 2018. This amounted to nearly $155.5 million dollars of federal funds that were not accessed by the state and did not support state residents and food businesses. [33] According to Feeding America, economists estimate that for every dollar a household redeems through the SNAP program, it generates about $1.70 in economic activity. [34] Using this calculation, the $155.5 million in unclaimed federal funds could have generated an additional $264.4 million dollars in state economic activity.

New Jersey continues to lag behind other states for its low SNAP participation. In 2018, the USDA ranked NJ 33rd in its SNAP participation for potentially eligible low-income households. Only seven of NJ's 21 counties reached 70% of the SNAP-eligible residents. Meanwhile, six counties served fewer than half of their SNAP-eligible low-income residents. It should be noted that these averages are conservative, as they only measure people earning up to 130% of the federal poverty line. New Jersey allows households with income up to 185% of the federal poverty level to participate in SNAP, if they meet other income tests. That means that many more households may be eligible and not served. In a state report, there was a 4.4% increase or 30,293 more individuals accessed SNAP during the pandemic. [35]

SUPPLEMENTAL NUTRITION ASSISTANCE PROGRAM PARTICIPATION RATE BY COUNTY, ALL PERSONS (2018)



Source: FRAC analysis of data from the 2014-2018 5-year American Community Survey, New Jersey Department of Human Services, and the Department of Homeland Security

The issue of decreased SNAP enrollment and other food assistance programs is a prime illustration of the need for stronger collaboration and integration across agencies. There are opportunities for the state to support policies that maximize benefits both for NJ residents on SNAP and producers in ways that support expanding access to nutritious food and support the livelihoods of NJ producers.

In January 2022, New Jersey released a draft list of New Jersey Food Desert Communities. [36] This is a valuable first step in the effort to construct a rigorous, participatory process for the identification of the most vulnerable communities and prioritization for targeted action. New Jersey has experimented with initiatives such as Healthy Food Financing Initiatives (such as the New Jersey Food Access Initiative) and healthy corner store programs. They represent valuable elements of comprehensive, multi-components efforts aimed at changing the food environment. [14] There needs to be more research into the effectiveness of a variety of tools and policy approaches for transforming food environments and encouraging healthier behaviors.

Obesity and Chronic Disease in New Jersey

In addition to food security concerns, there is an alarmingly high rate of obesity and diet-related chronic diseases across the state. Despite NJ's rate for adult obesity (23.8%) being lower than the national average (30.6%), when assessing the obesity rate by race and income patterns of structural inequality can be observed. Rates of adult obesity in African Americans in NJ is 32.5%, 28.0% for Hispanics, and only 22.4% for Whites. Additionally, when considering income, obesity rates for those with incomes below $25,000 per year are 35%, while for those with incomes over $75,000 are 25%. [37]

According to recent reports, the prevalence of obesity and diet-related conditions like diabetes [38] (the seventh-leading cause of death in NJ) [39] are shaped by both income and race. The age-adjusted diabetes death rate in New Jersey was highest among Black, non-Hispanic adults (35.6), which was more than twice that of White, non-Hispanic adults (17.7). [39] Additionally, the prevalence of diabetes is higher among New Jersey's Black and Hispanic adults compared to White, non-Hispanic adults (12.6% and 9.7% respectively vs. 8.2%). [40]

Social determinants of health play a critical role in the prevalence of type 2 diabetes. [41] In New Jersey, there are vast differences in diabetes prevalence based on income and education. Diabetes decreases with household income increases. [42] Households with incomes below $15,000 show twice the estimated diabetes prevalence when compared to households with incomes over $50,000. For households with the lowest level of income, below $15,000, the prevalence estimate increased from 10.5% (2013) to 14.8% (2015).

Prevalence similarly decreases with education level as individuals with less than a high school education have a prevalence estimate that is more than double that of individuals with a college or technical school education. In New Jersey, diabetes is most common among individuals over the age of 65 with an estimated 22.4% of adults in this age group diagnosed. [39] New Jersey must prioritize the health and wellness of all its residents by implementing recommendations [43] and taking concrete efficacious steps to increase healthy, affordable food access for all communities.

REFERENCES

THE NEW JERSEY FOOD DEMOCRACY COLLABORATIVE

1 New Jersey Food Democracy Collaborative. (2020). About the NJFDC. *https://stockton.edu/food-democracy-collaborative/about.html*

WHY A SYSTEMS PERSPECTIVE?

2 Niles, M.T., et al. (2017). Climate change and food systems: Assessing impacts and opportunities. Meridian Institute. *https://scholarworks.uvm.edu/cgi/viewcontent.cgi?article=1016&context=calsfac*

3 Nourish: Food and Community. (2020). Nourish Food System Map. *https://www.nourishlife.org/teach/food-system-tools/*

WHAT ARE FOOD SYSTEMS?

4 Johns Hopkins University Center for a Livable Future. (2020). Food System Primer. *https://www.foodsystemprimer.org/*

5 Martinez, Steve, et al. (2010). Local Food Systems: Concepts, Impacts, and Issues. *https://www.ers.usda.gov/webdocs/publications/46393/7054_err97_1_.pdf?v=0*

6 Von Braun, J., et al. (2021). Food system concepts and definitions for science and political action. *https://doi.org/10.1038/s43016-021-00361-2*

WHAT IS A RESILIENT FOOD SYSTEM?

7 Worstell, J., & Green, J. (2017). Eight qualities of resilient food systems: Toward a sustainability/resilience index. *https://doi.org/10.5304/jafscd.2017.073.001*

8 Jenileigh Harris and Emily J. Spiegel. (June 2021). Food Systems Resilience: Concepts & Policy Approaches Center for Agriculture and Food Systems. *https://www.vermontlaw.edu/academics/ centers-and-programs/center-for-agriculture-and-food-systems/projects.*

9 Hamm, M. (2015). City region food systems: potential for impacting planetary boundaries and food security. [Conference Presentation]. Oxford Martin Programme on the Future of Food. Oxford, U.K. *https://www.oxfordmartin.ox.ac.uk/videos/city-region-food-systems-potential-for-impacting-planetary-boundaries-and-food-security-with-dr-mike-hamm/*

10 Biehl, E., Buzogany, S., Baja, K., & Neff, R. A. (2018). Planning for a resilient urban food system: A case study from Baltimore City, Maryland. *https://doi.org/10.5304/jafscd.2018.08B.008*

REFERENCES (CONTINUED)

WHY EQUITY, JUSTICE, & DEMOCRACY AS KEY PRINCIPLES?

11 A. Reese. (2019). Black Food Geographies: Race, Self-Reliance, and Food Access in Washington, D.C. *https://doi.org/10.5149/northcarolina/9781469651507.001.0001*

12 Garcia et al. (2017). The impact of urban gardens on adequate and healthy food: a systematic review. *https://doi.org/10.1017/S1368980017002944*

13 Savoie-Roskos et al. (2017). Increasing Fruit and Vegetable Intake among Children and Youth through Gardening-Based Interventions: A Systematic Review. *https://doi.org/10.1016/j.jand.2016.10.014*

WHY EQUITY, JUSTICE, & DEMOCRACY AS KEY PRINCIPLES?

14 The Food Trust (January 2017) Special report: HFFI impact: The Nationwide Success of Healthy Food Financing Initiatives, A Proven, Economically Sustainable Solution. *http://thefoodtrust.org/administrative/hffi-impacts*

15 Alyssa J. Moran et al. (2020). Associations between Governmental Policies to Improve the Nutritional Quality of Supermarket Purchases and Individual, Retailer, and Community Health Outcomes: An Integrative Review. *https://doi.org/10.3390/ijerph17207493*

16 Hunt Allcott et al. (2019). Food Deserts and the Causes of Nutritional Inequality. *https://doi.org/10.1093/qje/qjz015*

17 Brian Elbel et al. (2015). Assessment of a government-subsidized supermarket in a high-need area on household food availability and children's dietary intakes. *https://doi.org/10.1017/S1368980015000282*

18 Steven Cummins et al. (2014). New Neighborhood Grocery Store Increased Awareness Of Food Access But Did Not Alter Dietary Habits Or Obesity. *https://doi.org/10.1377/hlthaff.2013.0512*

19 Kristen Cooksey-Stowers et al. (2017). Food Swamps Predict Obesity Rates Better Than Food Deserts in the United States. *https://doi.org/10.3390/ijerph14111366*

WHAT IS FOOD DEMOCRACY?

20 Hassanein, N. (2003). Practicing food democracy: a pragmatic politics of transformation. *https://doi.org/10.1016/S0743-0167(02)00041-4*

21 R., Patel. (2009). Food Sovereignty. *https://doi.org/10.1080/03066150903143079*

22 Bassarab, K., Clark, J., et al. (2019). Finding our way to food democracy: Lessons from US food policy council governance. *https://doi.org/10.17645/pag.v7i4.2092*

REFERENCES (CONTINUED)

CLIMATE CHANGE & THE NJ FOOD SYSTEM

23 Brown, M.E., et al. (2015). Climate Change, Global Food Security, and the U.S. Food System. *http://www.usda.gov/oce/climate_change/FoodSecurity2015Assessment/FullAssessment.pdf*

24 New Jersey Department of Environmental Protection. (2020). New Jersey Scientific Report on Climate Change. *https://dspace.njstatelib.org/xmlui/handle/10929/68415*

ECONOMIC IMPACTS OF THE NEW JERSEY FOOD SYSTEM

25 Sullivan and Schilling. (2017). The Economic Importance of New Jersey's Food System. *https://njaes.rutgers.edu/pubs/publication.php?pid=E366*

26 New Jersey Department of Environmental Protection. (2021) New Jersey Greenhouse Gas Inventory, Mid-Cycle Update Report. *https://www.nj.gov/dep/aqes/ghgarchive/MCU%20GHG%20Inventory_2021.pdf*

27 New Jersey Department of Environmental Protection. (2017) Draft Food Waste Reduction Plan (Pending Public Input). *https://www.nj.gov/dep/dshw/foodwaste/food_waste_plan_draft.pdf*

28 U.S. Department of Agriculture, Agricultural Census, Volume 1, Chapter 1, State Level Data. (2017). Land in Farms, Harvested Cropland, and Irrigated Land by Size of Farm: 2017 and 2012. *https://www.nass.usda.gov/Publications/AgCensus/2017/Full_Report/Volume_1,_Chapter_1_State_Level/New_Jersey/st34_1_0009_0010.pdf*

29 Francesco Tubiello et al. (2021). Greenhouse gas emissions from food systems: building the evidence base. *https://doi.org/10.1088/1748-9326/ac018e*

30 New Jersey Department of Environmental Protection. (2020). New Jersey Scientific Report on Climate Change, Version 1.0. *https://dspace.njstatelib.org/xmlui/handle/10929/68415*

31 Peeples, L. (2021). The Guardian: The US city that proves replacing lead water lines needn't be a pipe dream. *https://www.theguardian.com/us-news/2021/jul/15/newark-new-jersey-replace-lead-water-lines-pipes*

REFERENCES (CONTINUED)

SOCIAL IMPACTS OF THE NEW JERSEY FOOD SYSTEM

32 New Jersey State Health Assessment Data. (2021). Complete Health Indicator Report of Food Insecurity. *https://www-doh.state.nj.us/dohshad/indicator/complete_profile/FoodInsecurity.html*

33 Hunger Free New Jersey. (2020). Improving SNAP Participation in New Jersey. *https://hungerfreenj.org/wp-content/uploads/sites/12/2020/04/NJSNAP_Report_2020.pdf*

34 Feeding America. (2019). Hunger in New Jersey. *https://www.feedingamerica.org/hunger-in-america/new-jersey*

35 NJDHS Division of Family Development, Natasha Johnson. (2020). Current Program Statistics. *https://www.state.nj.us/humanservices/dfd/news/cps_apr20.pdf*

36 New Jersey Economic Development Authority (2022). Food Desert Community Designation Proposal Methodology. *https://www.njeda.com/wp-content/uploads/2022/01/NJ-Food-Desert-Communities-Designation-Proposal-Methodology-January-2022.pdf*

37 New Jersey State Health Assessment Data. (2021). Complete Health Indicator Report of Obesity Among Adults. *https://www-doh.state.nj.us/dohshad/indicator/complete_profile/Obese.html?ListCategoryFirst=x*

38 United Health Foundation. (2021). America's Health Rankings, Diabetes. *https://www.americashealthrankings.org/explore/annual/measure/Diabetes/state/ALL*

39 Centers for Disease Control and Prevention. (2017). Stats of the State of New Jersey. *https://www.cdc.gov/nchs/pressroom/states/newjersey/newjersey.htm*

40 New Jersey Death Certificate Database. (2014). *https://www.state.nj.us/health/vital/*

41 Centers for Disease Control and Prevention. (2015). Behavioral Risk Factor Surveillance System. *https://www.cdc.gov/brfss/index.html*

42 New Jersey Diabetes Action Plan Report. (2016). *https://www.njhealthmatters.org/content/sites/njhc/minutes/NJdap_report2016_3.pdf*

43 2020 NJ SNAP-Ed Draft Recommendations for Increasing Fresh Fruit and Vegetable Access for Low-Income Communities; Responses to NJ Economic Development Authority 2021 Request for Information on Addressing Food Deserts; NJFDC recommendations in this report; Hunger Free NJ recommendations 2021.