

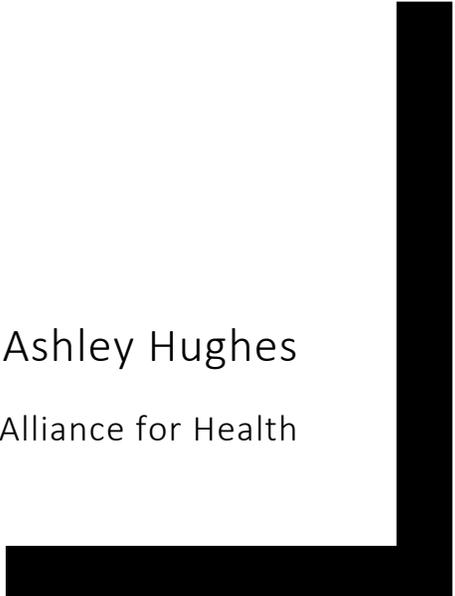


COMMUNITY-BASED INTERVENTIONS TO IMPROVE PUBLIC HEALTH AND NUTRITION

A Legislative Review

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North Carolina Alliance for Health





NORTH CAROLINA ALLIANCE FOR HEALTH

About NC Alliance for Health

The North Carolina Alliance for Health (NCAH) is an independent, statewide coalition of individuals and organizations that convenes, mobilizes, supports, and empowers partners to advance equitable policies that reduce health disparities, prevent chronic disease, and promote health.

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STATEMENT OF PURPOSE

This report provides a review of community-centric legislation related to food and nutrition in the United States since 2015. The main questions addressed were: 1) What type of programs and policies exist to promote nutrition, food access, and food security at the community level? 2) How do these programs and policies function? 3) Are the programs successful in reducing food insecurity? With these questions in mind, a legislative review was conducted. Relevant legislation is characterized and evaluated in the narrative that follows. By distilling and evaluating legislation from across the nation, the author hopes this report will serve as a helpful resource to inform lawmakers and healthy food advocates in North Carolina.

INTRODUCTION TO FOOD INSECURITY

Food insecurity is a complex and pervasive issue in the United States and around the globe. It is defined as the disruption of food intake or eating patterns because of lack of money and other resources.¹ Food insecurity is further broken down into two categories: low food security and very low food security. The former is characterized by, “reports of reduced quality, variety, or desirability of diet but little or no indication of reduced food intake,” and the latter by, “reports of multiple indications of disrupted eating patterns and reduced food intake”.¹ North Carolina is the tenth hungriest state in the nation. Children, single parents, and older adults often feel this reality most acutely.² Food insecurity is not synonymous with hunger, but hunger can be secondary to food security status.

Prevalence of food insecurity and very low food security, 2001-2018

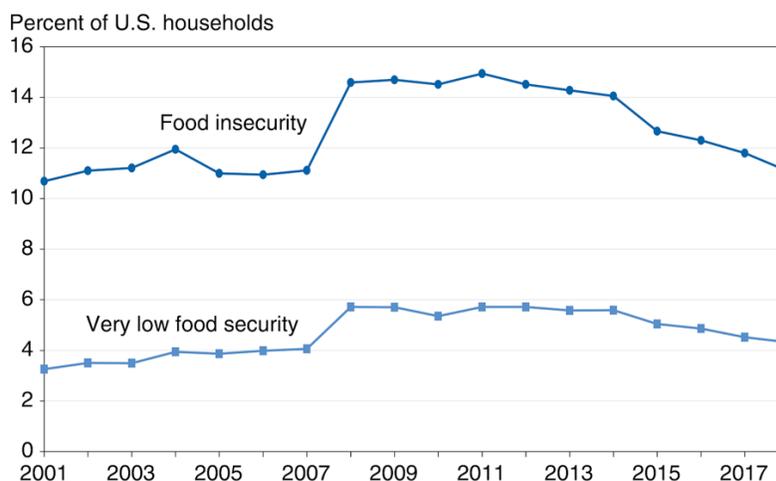


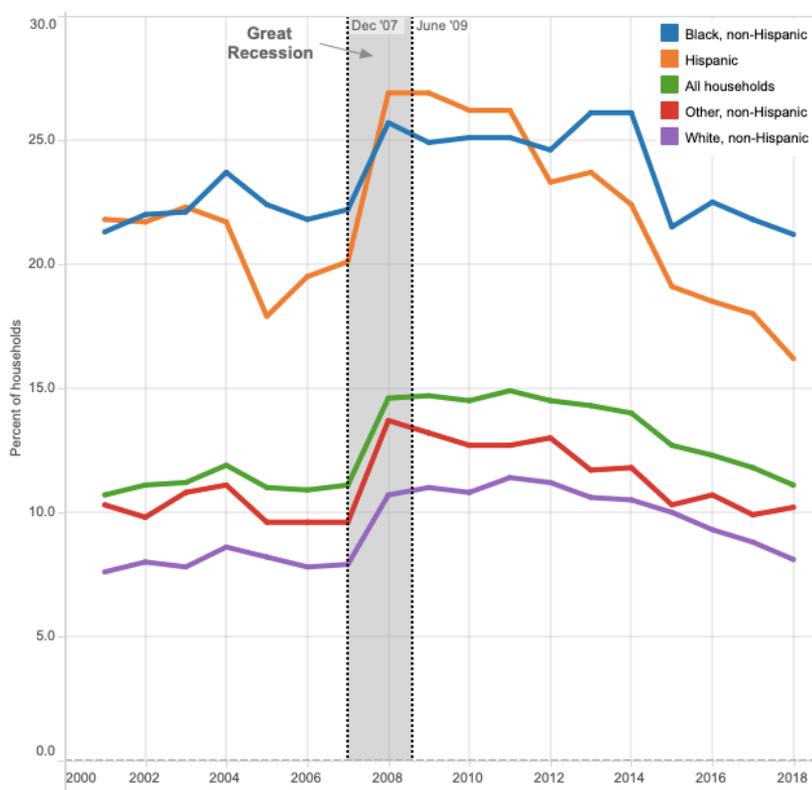
Figure 1. Prevalence of food insecurity and very low food security, 2001-2018. 2019. USDA Economic Research Service. From <https://www.ers.usda.gov/data-products/ag-and-food-statistics-charting-the-essentials/food-security-and-nutrition-assistance/>

The United States Department of Agriculture (USDA) Economic Research Service (ERS) reports on the incidence and prevalence of food insecurity via an annual, nationally representative survey. In 2018, 11.1% of U.S. households were food insecure at some point during the year and 4.3% of households reported very low food security.³ Figure 1 highlights trends seen in the past two decades around the issue. Food insecurity has declined since 2014 and appears to be returning to levels seen prior to the 2008 recession. Unfortunately, one can expect the prevalence will climb in the coming years as the nation enters an economic recession secondary to the severe acute respiratory syndrome coronavirus 2 (COVID-19).

Food insecurity is more concentrated among single mothers and minority groups such as non-Hispanic Black and Hispanic households.⁴ In 2018 statistics compiled by the USDA ERS found that among white, non-Hispanic households food insecurity was present in 8% of the population. As seen in Figure 2, among Hispanic households food insecurity was roughly double that of white-non-Hispanics, and among Black, non-Hispanics almost triple.³

Figure 2

Trends in food insecurity by race and ethnicity, 2001-18.



2019. USDA, Economic Research Service. From <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/interactive-charts-and-highlights/>

In addition to differences relative to race and ethnicity, food insecurity is also unevenly spread across the country. The differences are due to variations in population, education, economic opportunities, and state-level policies. Figure 3 depicts the geographic distribution of food insecurity in recent years. The American South, including North Carolina, has historically suffered from poor diet and health outcomes. One of the issues low-income residents face in both rural and urban settings is the lack of access to food. Food deserts are areas where there is a limited variety of healthy and affordable food. Food deserts typically exist in areas that are lower income, where residents lack vehicle

access, and where public transportation is sparse.⁵ Some leaders in the food justice field have advocated for changing the way we speak about food deserts, instead preferring the term “food apartheid.” The New York City based urban garden leader, cofounder of the Black Urban Growers organization and activist Karen Washington is credited with popularizing the term because it looks at the whole food system. It considers race, geography, faith, and economics allowing one to, “get to the root cause of some of the problems around the food system.”⁶

Prevalence of food insecurity, average 2016-18

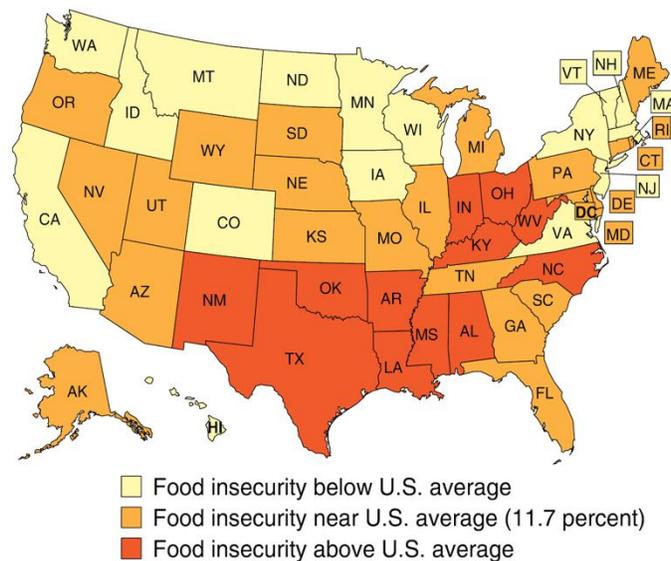


Figure 3. Prevalence of food insecurity, average 2016-18. 2019. From USDA Economic Research Service. From <https://www.ers.usda.gov/data-products/aq-and-food-statistics-charting-the-essentials/food-security->

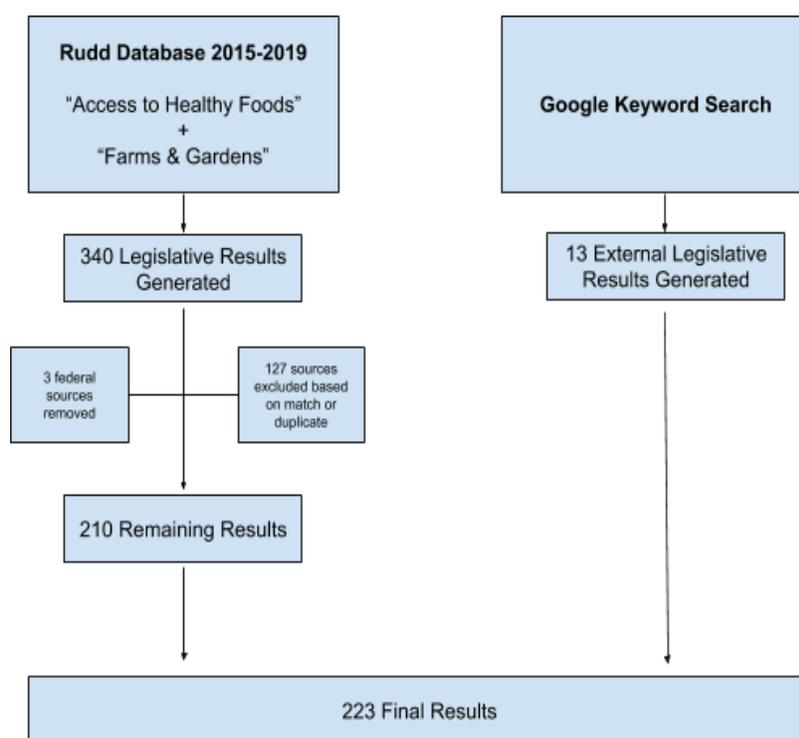
Investments in food systems and food security go beyond addressing health inequities, they make economic sense too. Food insecurity among children is linked to educational outcomes and academic performance, which in turn contributes to workforce readiness. The United States seems to recognize the importance of nutrition given the huge investment in federal feeding programs like the National School Lunch Program and the Supplemental Nutrition Assistance Program (SNAP). SNAP is federally funded through the Farm Bill. In the 2018 Farm Act, programs listed under “nutrition” accounted for about 76% of the total \$428 billion in funding for the next five years.⁷ Furthermore, upstream investments in health and nutrition prevent costly medical conditions down the line. Seligman et al. analyzed a representative sample of National Health and Nutrition Examination Survey participants and found that food insecure participants in the U.S. were 32% more likely to be obese than food secure participants, and severely food insecure individuals were twice as likely to develop type 2 diabetes than their counterparts.⁸ On average, food insecure adults have annual health care expenditures \$1,834 higher than a food secure adult.⁹ Increasingly, insurance companies are considering the social determinants of health in their care plans and recognizing that food security is a key component of overall health.¹⁰

LEGISLATIVE STRATEGIES AND EVALUATION

A legislative review was performed to quantify and characterize policies proposed and enacted in the United States over the past five years. Only policies addressing food and nutrition through community interventions were included. Community interventions are broadly defined as those programs that have the potential to impact multiple individuals or groups within the community at some level (i.e. shared gardens, additional grocery stores, farmer's market programs). Although the report primarily addresses community legislation, because individuals make up a community, inherently, there is some overlap between interventions that impact individuals or households. Legislation dealing with school meals, SNAP, and WIC were excluded except where the intervention had a connection to the local food environment.

Figure 4

Flow Diagram of Legislation



The University of Connecticut Rudd Center for Food Policy and Obesity legislative database was the primary method of gathering pertinent legislation. The database tracks state (including the District of Columbia) and federal policies related to obesity and diet-related disease.¹¹ For this report, only state-level policies were included in the analysis. Legislation tagged under "Access to Healthy Food" and "Farms and Gardens" were compiled from the years 2015-2019. The Rudd Center is useful in identifying trends, but it is not an exhaustive list of food policy

bills.¹² Due to time and research constraints a comprehensive analysis of each state's bills and laws was not feasible. Additional pieces of legislation were included in the analysis and were found through Google keyword searches.

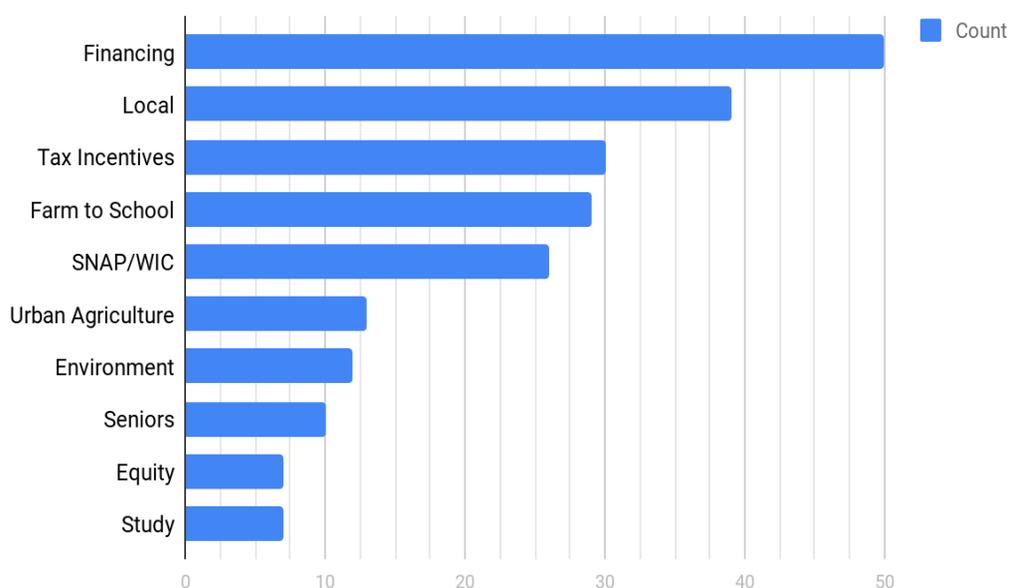
Figure 4 depicts the method for identifying sources. Policies were scanned by title and purpose and coded according to ten topic categories. The categories are: equity, farm to school, financing, local, seniors, SNAP/WIC, study, sustainability, tax incentives, and urban agriculture. Several pieces of legislation contained overlapping themes. In these instances, best judgement was used to characterize the main interventions or policies. The report includes legislation strictly based on relevance to the

topic, not the legislation's perceived positive or negative outcomes. A total of 223 pieces of legislation were analyzed. Figure 5 shows the number of policies that fell into each category. Financing initiatives were the most favored form of intervention (n=50), followed by local (n=39), and tax incentives (n=30). Policies addressing food insecurity through equity and studies were least favored by states (n<10). Figure 5 shows the breakdown of legislation according to the ten categories.

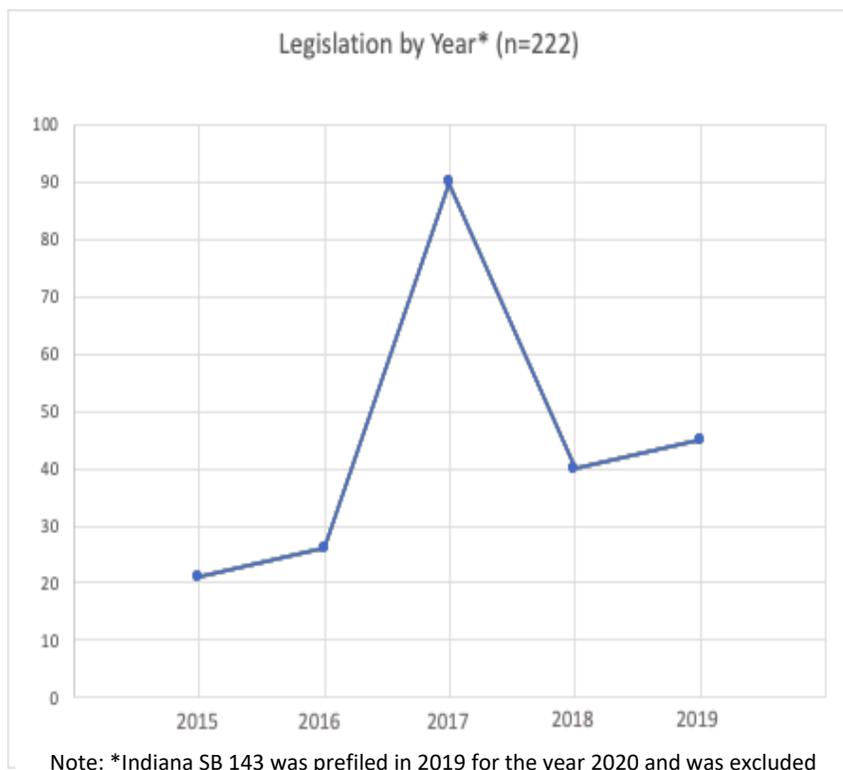
Figure 5

Reviewed Legislation by Category

Legislation by Category (n=223)



There was a significant change in legislation introduced throughout the years analyzed. Figure 6 depicts the legislation broken down by year from 2015-2019. 2015 and 2016 saw a modest number of legislative proposals, 21 and 26 pieces respectively. In 2017, there was a marked increase in legislation proposed, totaling ninety pieces of legislation. In 2018 forty pieces of legislation were introduced and in 2019 forty-five. Six states led the way nationally for community-focused interventions during the reviewed period. They are New York (n=31), New Jersey (n=20), Illinois (n=13), Minnesota (n=13), Maine (n=11), and Missouri (n=10).

Figure 6*Legislation by Year, 2015-2019*

From the coded categories of legislation, the data was condensed into four thematic groups for more succinct analysis. The themes are: financial initiatives, consumer incentives, local food systems, and other interventions (as seen in Table 1). Each thematic group will be introduced, along with a discussion of pertinent programs contained within. The impacts of the legislation will be explored according to available evidence, but an exhaustive discussion of program strengths and weaknesses is beyond the scope of this report.

Table 1*Legislative Themes*

Themes	Categories Included
Financial Initiatives	<ul style="list-style-type: none"> • Financing • Tax Incentives
Consumer Incentives	<ul style="list-style-type: none"> • SNAP/WIC • Seniors
Local Food Systems	<ul style="list-style-type: none"> • Local • Farm to School • Urban Agriculture
Other Interventions	<ul style="list-style-type: none"> • Equity • Study • Sustainability

FINANCIAL INITIATIVES

Providing funding through loans, grants and state appropriations is a popular method of increasing food access. Food access interventions are typically deployed in areas designated as food deserts, or where fresh, nutritious foods are limited but the “desert” designation does not apply. Some pieces of legislation called for the creation of a task force to study the effects of providing funding and other states appropriated funds to support novel programs. Loans administered to small grocers and corner store retailers are also favored interventions since many regions lack full-service grocers.

HEALTHY FOOD FINANCING INITIATIVES

Healthy Food Financing Initiatives (HFFIs) offer resources such as grants, loans, technical assistance services, programming, and other forms of support to projects that will improve access to fresh, healthy foods in underserved rural and urban areas.¹³ HFFIs boast benefits to the local economy via financial investment, job creation, workforce development, and generating state and municipal tax revenue.¹⁴ According to a report released by Policy Link, The Reinvestment Fund, and the Food Trust, “findings have shown that access to fresh and healthy foods improves eating habits and can contribute to positive health outcomes, including decreased risk for obesity and diet-related diseases.”¹⁴ Pennsylvania’s Fresh Food Financing Initiative launched in 2004. Its success has been the blueprint for several states, communities, and even the federal government. In 2014, a federal HFFI was included in the Farm Bill, authorizing up to \$125 million for the program.¹⁴ In the 2018 Farm Bill the program was reauthorized and expanded.¹⁵

SMALL FOOD RETAILERS

The term “small food retailers” typically refers to convenience stores, corner stores, and other local vendors that sell packaged foods, beverages, and tobacco products among other offerings. There are 152,720 convenience stores operating in the United States, of these stores 62% are single-store operations. Convenience stores account for roughly 35% of brick and mortar retail spaces in the United States.¹⁶ The ubiquity of small food retailers makes them an attractive target for public health interventions seeking to improve access to healthy foods. Legislative proposals pertaining to small food retailers typically appropriate funds through grants or loans that go towards capacity building or purchasing equipment needed to stock and store perishable foods. New Jersey SB 2977 appropriated \$1 in funding for retailers to “sell fresh and nutritious food”.¹⁷ Between 2015 and 2018, New Jersey each put forth eight pieces of legislation focused on, “Healthy Small Food Retailer Act”.

TAX INCENTIVES

A variety of tax incentives exist related to healthy food access. Tax credits for food donation are common strategies. In 2017, West Virginia SB 25 was ratified and created a credit for farmers who donated eligible items to food banks or other organizations serving the needy.¹⁸ Personal tax credits were proposed in Oregon HB 3325 for individuals that invested in community gardens and food banks.¹⁹ Other proposals focused on providing general tax credits or property tax deductions for grocers and

supermarkets built in food deserts. Other pieces of legislation sought to raise funds by levying an additional sales tax in the retail sector.

EVALUATION

Financial initiatives typically aim to increase access to healthy food in a region, but access does not mean improved dietary consumption or health outcomes. HFFIs and small food retailer programs operate under the assumption that decreasing geographic distance to healthy food and increasing access to healthy foods will have an impact on health outcomes. Gosh-Dastidar et.al. writes, “HFFIs assumes that residents will shop in their own neighborhoods if healthy foods are available there (“if we build it[,] they will come”)”.²⁰ However, this logic has not been supported by the literature. Several barriers exist that complicate the relationship between healthy food access and improved health. Supermarkets bring with them an increase in unhealthy foods as well as healthy foods, and access to new stores does not necessarily equate to adoption of the new store by residents.²⁰ The introduction of large retailers can also have detrimental effects on more local “mom-and-pop” retailers as they compete for local business. Small retailers might reduce their offerings of fresh foods, further segmenting the “healthy” versus “unhealthy” store divide, or might be forced out of business.²⁰

Research regarding the causal link between access to healthy foods and improved dietary intake is inconclusive.²¹ Evaluating the efficacy of interventions is complicated by lack of evaluation and a large amount of heterogeneity in study design and methods. Going forward more rigorous methodological evaluations of the link between supermarkets and dietary intake are needed.²¹ Mah et.al. suggests that more interventions target retailers as agents of health-promoting change. Retailers ultimately control the merchandise offerings and the environment created within their stores. Their involvement is critical in creating more health-promoting environments.²² Haardofer concurs writing that, “structural interventions...may be a more appropriate strategy for improving population-level dietary behavior.”²¹ This is not to diminish the benefits of increasing access and exposure to healthful options. Providing an alternative to less-nutrient dense food is an important first step.

CONSUMER INCENTIVES

Many states have taken efforts to increase the purchasing power of consumers buying fresh, nutritious foods. Consumer incentives introduced in the past five years were chiefly geared toward SNAP, WIC, and Senior Farmers’ Market Nutrition Programs (SFMNP). Legislation has either aimed to provide additional funding or vouchers to clients, or to equip retailers to accept benefits.

HEALTHY FOOD INCENTIVES

Healthy food incentive programs such as the Double Up Food Bucks (DUFb) program double the value of SNAP benefits when purchasing fresh and/or locally grown fruits and vegetables.²³ Participants can double their money up to a certain amount daily, usually between \$10 and \$20, when purchasing fresh fruits and vegetables. The program began in 2009 through a collaboration between the Fair Food Network and five farmers’ markets in Detroit, Michigan,²⁴ and has been implemented by many states since. Currently the DUFb program operates in twenty-eight states with more than 900 sites across the

nation.²⁴ Benefits are classically redeemed at farmers' markets, but the program has expanded to include grocery stores and similar retailers.

Funding for DUFB programs is typically a mix of public-private investments. Federal funding is available via the Gus Schumacher Nutrition Incentive Program. In the 2014 Farm Bill, the federal government got behind the DUFB effort, establishing The Food Insecurity Nutrition Incentives (FINI) grant program; the program was renamed the Gus Schumacher Nutrition Incentive Program in the 2018 Farm Bill. This program functions to incentivize the purchase of fresh fruits and vegetables by SNAP clients.²⁵ The program funds grants that vary by dollar amount and duration. DUFB programs boast potential for an attractive return on investment with SNAP participation at markets, revenue to local farmers, and money staying in the local economy.²⁶

SENIOR PROGRAMS

A handful of states have introduced legislation that addresses the burden of food insecurity among older adults. Connecticut, Missouri, and West Virginia have led the charge in senior-specific pieces of legislation. Almost all of the legislation focused on the SFMNP whose aim is to connect low-income seniors to, "locally grown fruit, vegetables, honey and herbs".²⁷ Common themes have been focused on expanding the program either through vouchers or creating a SFMNP as Missouri did in HB 2331.²⁸

EVALUATION

Strengths of healthy food incentive programs include increases in reported fruit and vegetable intake and variety due to FINI programs.²⁹ Participant motivators for utilizing healthy incentive programs include: eating more healthfully, stretching SNAP benefits, and higher quality produce at markets.³⁰ Healthy food incentive programs have demonstrated positive effects for businesses. SNAP participation at farmers' markets have been successful in diversifying the customer base and driving sales.²⁹ Over half of participating retailers reported that their businesses benefited from increased traffic from new and repeat customers, while over two-thirds reported an increase in revenue.²⁹ Challenges facing incentive programs include low awareness, lack of transportation to vendors, limited farmer's market hours, and confusion regarding incentive use.^{30,31} Additionally, reaching SNAP participants can be challenging due to messaging and language barriers.²⁹ Marketing campaigns are crucial for program success and an important consideration as healthy food incentives expand.³² Finally barriers associated with data collection and reporting exist for retailers participating in government-funded FINI programs, it was the most commonly cited challenge to implementation.²⁹

The overall effects of financial incentive programs on diet and health are inconclusive. A comprehensive and detailed interim report prepared for USDA evaluating the effectiveness of FINI programs found that, "[FINI] did not have a detectible impact on total daily cup equivalents of fruits and vegetables consumed for any treatment group." The same report also concluded that FINI programs did not have a detectible impact on food security.²⁹ Literature reporting increases in fruit and vegetable consumption often had weak study designs that relied heavily on point-of sale interventions, convenience samples, and self-reported intakes.^{33,34,35} Vericker et.al. found a measurable impact on monthly household

expenditure on fruit and vegetables, but no measurable impact on consumption.²⁹ More rigorous standards of evaluation and homogeneity in study design are needed to measure the impact of consumer interventions on health outcomes. As Cohen et.al. points out serious gaps exist in understanding the DUFB demographic, with data lacking in the proportion of the eligible population using SNAP incentive programs, the frequency of incentive use, sociodemographic subsets of enrollees more likely to use incentives, and farmers' market characteristics that may impact incentive use.³⁶ These nuances are critical to assess the potential scale and impact of incentive programs and begin to understand how they affect health outcomes over time.³⁶

LOCAL FOOD SYSTEMS

The emphasis on local food systems and local agriculture has seen a pronounced increase in attention across the nation in recent years. Local agriculture may improve health, local economies, and support the local workforce among other touted benefits.³⁷ The legislative review revealed a few key programs and policies to promote the local food system.

PROCUREMENT

Local food procurement by state agencies and school systems is a popular intervention that typically requires the institution to purchase anywhere between 10-50% of its foods from local vendors. Procurement legislation encouraged government agencies purchase, or procure, food to provide meals to individuals that they serve in institutional settings including schools, hospitals, and senior programs.³⁸ Institutions have significant purchasing power and the opportunity to influence the dietary intake of the populations they serve. Procurement policies vary widely by their definition of "local" and what percentage of foods will be sourced as such. Arkansas HB 1839 was adopted in 2017, it established, "the local food, farms, and jobs act to 1) create, strengthen, and expand local farm and food economies throughout the state and; 2) support and encourage the procurement of local farm or food products as a significant portion of all food products purchased by the state".³⁹ From 2015 to 2019 New York and Maine each recommended ten or more pieces of legislation to boost the local food economy. Some legislative proposals promoting local food included appropriation funds. Wyoming SF 123 appropriated \$25,000 for processing Wyoming meat and SF 1994 of Minnesota appropriated the same amount in fiscal year 2016 and 2017 to, "promote local foods through an annual event that raises public awareness of local foods and connects local food producers and processors with potential buyers."⁴⁰ Similar to the DUFB programs, fresh food procurement may provide benefits to consumers, local farmers, and the local economy.

FARM TO SCHOOL

Farm to school programs (FTS) are made up of three core components: procurement, school gardens, and education.⁴¹ Hawaii and Vermont have each proposed five pieces of legislation related to the topic since 2015. Vermont SB 33 was adopted in June of 2017 hitting on the three core components above and also seeking to increase student participation in child nutrition programs.⁴² Other state legislation focused on researching the feasibility of creating a statewide program, establishing a program, or creating coordinator positions for implementation. Coordinator positions are important in navigating

the web of vendors and logistics that come with local food sourcing, what some have called “supply-chain gymnastics”⁴³. In 2017 Wisconsin eliminated the FTS coordinator position for budgetary reasons, but did not defund FTS efforts altogether. This move was after over a decade of Wisconsin's involvement in the FTS movement.⁴⁴ Like procurement policies, farm to school programs tout a triple bottom line of benefit to individuals, farmers, and the community.

URBAN AGRICULTURE

A small body of legislation was found relating to urban agriculture (UA). UA activities and interventions have received more attention nationally and internationally with shifting rural to urban population patterns. In 2018 the United States Census Bureau indicated that 80.7% of the nation's population is urban.⁴⁵ Legislative topics related to UA included zoning considerations and building plots in residential areas. Minnesota and New York have both introduced legislation that would provide grant funding to get urban agriculture and farmers' market programs off the ground.^{46,47} One of the more comprehensive pieces of legislation that was approved, was Nebraska LB 175 – the Community Gardens Act. The bill was adopted in May of 2015 with the express intent of fostering growth in the size, number, and scope of community gardens in the state.⁴⁸ The Community Gardens Act required the state to issue a follow up report one year after the law's passage to report out key findings. To encourage expansion of community gardens the report put forth recommendations calling for revised land use laws, reduction of costs and barriers to water access, tax incentives, and an educational campaign.⁴⁹

EVALUATION

The local food movement is relatively new to the legislative scene in the United States. Using the FTS movement as an example, in the early 1990s only a few pioneering school districts had a program, but recent data released from USDA indicates that 42% of school districts nationwide are engaged in some form of FTS activity.⁵⁰ Available evidence suggests a positive relationship between FTS programs and food and nutrition-related knowledge as well as attitudes and willingness to try new foods.^{51,52} Procurement policies are closely related to FTS programs. Express FTS legislation at the state and federal level are associated with an increased likelihood of having FTS programs and serving local foods more frequently in school meal programs.⁵² Although specific qualitative data is limited regarding economic benefits to farmers and communities the perceived benefits of farmers who participate include: diversified market opportunities, increased revenue, and community support.⁵² McCarthy et al. interviewed 155 farmers and found the main barrier to FTS participation among adopters and non-adopters to be the lack of capacity for school foods to utilize raw ingredients since many schools don't perform scratch cooking.⁵²

There are several barriers to assessing the impacts of local food system interventions. First, the movement's youth begets difficulties in evaluation of long-term impacts both on health and economic outcomes. The literature base of peer-reviewed studies is small and many studies are not longitudinal. Thus it is difficult to assess the effects local food system interventions might have on lifetime health and chronic disease outcomes.⁵¹ In addition, the liberty afforded in FTS and procurement programs by state and locality make it difficult to identify specifically what part of programs are efficacious or not.⁵¹ The

holistic nature of FTS interventions is a strength because it promotes a socioecological model of influence and learning that are required for behavior change,⁵¹ but it creates evaluation challenges.

Defining “urban agriculture” is difficult; operations might be community gardens, rooftop greenhouses, gleanings, etc. There are many models of UA that vary by place, ownership, mission and scale. UA has strong potential to provide benefits to communities and promote food access and security, but presents similar limitations seen in FTE and procurement regarding robust quantitative analysis and long-term health outcomes. The role of the planning community and municipal government is crucial to securing land and establishing land security in UA projects.⁵³ Among reports discussing UA, many of them integrated equity into their arguments. Siegner writes, “it is neither inevitable nor guaranteed that urban agriculture will redress food system inequities; in fact, urban farms can sometimes lead to displacement through eco-gentrification.⁵⁴ Eco-gentrification is defined as the process by which cleaning up and beautifying areas of a community increases property values and attracts wealthier residents to a previously disenfranchised area. Currently, the effect of UA on food security is largely unknown.⁵⁴

OTHER INTERVENTIONS

The legislative review revealed other interventions presented in the legislature, but that do not easily fit into the themes presented. Legislation discussing sustainability, equity and studies are discussed here. In general, these policies represent newer and less established approaches to address food access and food insecurity.

SUSTAINABILITY

Sustainability legislation focused on reducing food loss and waste (FLW) and making food donations easier. Food waste is the decrease in food quantity or quality arising from retailer, food service, and consumer decisions, versus food loss which arises from the supply chain.⁵⁵ According to the Food and Drug Administration, in the United States’ food waste is reported to be between 30-40% of the food supply. In 2010, this represented \$161 billion worth of food.⁵⁶ Food waste has a multifaceted detrimental impact. It is nutrition that will not nourish the needy and an underutilized investment in water, land, energy and labor.⁵⁷ Food waste is also harmful to the environment. Organic material decomposition in landfills contributes to landfill gas which is composed of roughly fifty percent methane and fifty percent carbon dioxide.⁵⁸ Methane is a more potent greenhouse gas than CO₂ and contributes to the greenhouse effect and global warming. Municipal solid waste landfills alone are the third largest contributor of human-related methane emission in the United States.⁵⁸

Washington HB 1114 was adopted in May of 2019 with the goal of, “Reducing the wasting of food in order to fight hunger and reduce environmental impacts”.⁵⁹ The legislation aimed to reduce the state’s food waste by 50% in 2030 relative to levels in 2015. Other policies focused on increasing the ease of donating excess food to pantries, schools, and similar organizations to divert waste from landfills. Oklahoma HB 1875 permitted food donated to a nonprofit organization to be redistributed to schools and vice versa.⁶⁰ Legal considerations and threat of liability can be a deterrent for businesses to donate excess food.⁶¹

EQUITY

The Robert Wood Johnson Foundation defines health equity as the opportunity to achieve optimal health. It requires, “removing obstacles to health such as poverty, discrimination, and their consequences, including powerlessness and lack of access to good jobs with fair pay, quality education and housing, safe environments, and health care”.⁶² Three states (California, Minnesota, Oregon) and the District of Columbia proposed legislation that addresses health equity and health disparities. Health equity is receiving more attention along with an emphasis on addressing social determinants of health.^{9,63} Most of the legislation reviewed called for attention, resources, and funds for reducing health disparities that exist in the population. Minnesota HF 1381 sought to “improve child development outcomes” and reduce racial disparities in children’s health.⁶⁴ California AB 1952 called for a plan to end hunger in the state,⁶⁵ and Oregon HB 2986 allocated grant funding that would support regional health equity coalitions.⁶⁶ None of the legislation was passed, but its existence in the review is noteworthy and may be an indicator of future legislation to come.

STUDY

A handful of states brought forth legislation that would study the effects of the interventions we have discussed thus far. The majority of legislation focused on tracking food deserts and reporting on what measures would improve healthy food access and benefit the economy. Vermont HB 781 was unique across all legislation reviewed because it specifically mentioned public transportation as a means of connecting citizens to food assistance locations.⁶⁷

EVALUATION

One of the most compelling arguments for reducing FLW is the projections that by 2050 the world will need 60% more food than it has now, that figure shrinks to 20% if globally we are able to decrease FLW by half.⁶⁸ From a policy perspective, Muth et al. point out that both cost-effectiveness and cost-benefit analyses are needed to quantify the potential benefit of FLW reduction programs.⁶⁹ The former taking up non-monetary issues like environmental impact, social good, and food security; the latter addressing costs spent on personnel, equipment, maintenance, etc. FLW reduction goals at the state and national level, food recovery support, and research for innovative methods and technology are all needed to realize the nutrition and public health benefits of FLW.⁶⁸ Reducing FLW has strong potential to promote public health and nutrition, but there are challenges establishing a line of causation between the two.⁶⁸ The food supply chain in the United States is complex and involves many moving parts. There are an increasing number of studies recognizing the imperative nature of decreasing FLW, but there is a lack of information and data about what measures are most effective along the supply chain.⁶⁹ Even quantifying the amount of FLW that occurs is largely a game of extrapolation,⁷⁰ that is insensitive to individual variance and seasonal changes in production.

The evidence around equity-focused policies and their effect on health and nutrition is limited, and a comprehensive assessment of what type of equity-focused policies are most effective is lacking in the literature. Most journal articles and publications point to the need for a shift in welfare policies that will address the determinants of food insecurity, namely: housing, child care, health care, and job security.⁷¹

Weiler offers a nice summary of these sentiments stating, “developing people’s cooking skills and food literacy through projects such as community kitchens tends to neglect the root causes of poverty and income inequality”.⁷² Most equity policies included in this review were broad and vague in their directives. They often focused on convening counsels, setting goals, and encouraging health-promoting behaviors. Planning and goal setting are clearly important steps, but concrete actions and policies that address the systemic causes of health inequity are needed. Equity policies without proven outcomes can be a hard sell for economic, results-driven legislatures that face pressure to promote policies and programs that are evidenced-based.

DISCUSSION

Research limitations include potential publication bias and incomplete retrieval of relevant legislation due to the near exclusive use of the Rudd database. This report was a nationwide legislative review, and readers should be cognizant of regional contexts and customs that may influence a program’s receipt or implementation. Many of the interventions discussed demonstrate positive economic impact, community engagement, and social benefits that make them valuable. However, none of the interventions reviewed were consistently shown to reduce levels of food insecurity. Food security is a difficult end to achieve through singular programs, and this work cannot be divorced from the work of addressing inequality and poverty at its core. Complex issues require a multi-front attack that promotes everything from legislative policies to personal behavior change.

North Carolina has an opportunity to leverage existing assets, resources, and knowledge in the state to make positive improvements in the public health and nutrition arena. North Carolina is both agrarian and academic, home to several leading universities and research institutions. The state and the nation are experiencing extraordinary challenges not seen at any other time in recent history. COVID-19 has placed extreme strain on the state’s healthcare and economic sectors. Jobless rates have soared and entire budgetary and legislative agendas have been reordered. The disruption caused by COVID-19 has shed a light on weak points in the food system that are ripe for change and rebuilding. Given this crisis, food security will emerge as an important indicator of the state and nation’s overall health.

RECOMMENDATIONS

To help decrease rate of food insecurity through community-based legislative measures, the following recommendations are proposed:

1. Expand healthy food incentives programs that allow low-income SNAP/WIC/SFMNP recipients to increase consumption of fresh fruits and vegetables. Special attention should be given to expanding the number of eligible retailers where benefits can be redeemed.
2. Encourage and develop Farm to School and local procurement policies at the municipal and state level.
3. Implement a food loss and waste reduction plan at the municipal and state level.
4. Advocate for increased homogeneity in federal and state community-based program implementation as a means of interstate comparison and evaluation.

CONCLUSIONS

None of the interventions reviewed were consistently shown to reduce levels of food insecurity. The effects of improved access and affordability on food security and health outcomes are largely unknown. Great heterogeneity exists in the deployment and evaluation of community-based policies and interventions across the nation, which makes comparison and evaluation difficult. Some programs reviewed were responsible for changes in the availability of, and attitudes about nutritious foods. Expanding social programs that address upstream contributors to food insecurity would likely have a greater effect on promoting food security and long-term health.

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