

A NATIONAL SCHOOL GARDEN PROGRAM: A HOLISTIC AND SUSTAINABLE APPROACH TO COMBATING FOOD DESERTS

I. INTRODUCTION

A family walks into a brand new grocery store in its neighborhood, the first large supermarket that has been close to home in years. The supermarket recently opened this location as a result of government incentives meant to bring fresh, affordable produce into neighborhoods where it was previously absent. Because affordable fresh fruits and vegetables had been scarce until now, this family has relied on fast food restaurants and a convenience store across the street for most of its meals. As a result, the family's health has been adversely affected. The family walks through the produce section, confronted with many unfamiliar objects. The children anxiously announce that the brightly colored plant life looks gross and unappealing. The father does not want to put up a fight and does not know what would taste good, much less how to prepare it. He therefore rolls the cart, to the children's pleasure, toward more familiar territory. Frozen pizza will do.

This is the plight of millions of Americans, most of whom live in low-income, racially segregated areas that have high occurrences of diet-related disease.¹ They currently live in "food deserts," areas where access to affordable fresh food is very limited.² Food deserts are scattered across the country and are found in urban, suburban, rural, and tribal areas.³ The good news is that the federal government is expending large amounts of money in an effort to improve food access, and consequently the health of residents, in these areas by creating incentives to bring in large supermarkets.⁴ But when a supermarket opens in such a neighborhood, will the former food desert

¹ Julie Beaulac et al., *A Systematic Review of Food Deserts, 1966-2007*, 6 *PREV. CHRONIC DIS.* A105, 1 (2009) available at http://www.cdc.gov/pcd/issues/2009/jul/pdf/08_0163.pdf.

² *Id.*

³ *Creating Access to Fresh Affordable Food*, US DEP'T OF AGRIC. (Dec. 2010), available at <http://apps.ams.usda.gov/fooddeserts/AccessHealthyFood.pdf>.

⁴ *Healthy Food Financing Initiative*, U.S. DEP'T OF HEALTH AND HUMAN SERV., http://www.acf.hhs.gov/programs/ocs/ocs_food.html (last visited Oct. 4, 2011).

residents, like the hypothetical family described above, want or know how to make healthy choices, or will these efforts have been made in vain?

Many may think that introducing supermarkets to these neighborhoods will solve the problem, but recent studies suggest that it will not: increased access to supermarkets does not automatically improve diets because people will continue to make the same poor choices for a variety of reasons.⁵ One of these reasons is the lack of nutritional education to supplement efforts to improve access to nutritional foods.⁶ The federal government's recent attempt to combat food deserts, while positive, is inefficient because it does not go far enough to meet the policy goal of improving the dietary health of these Americans. What these Americans need is an educational supplement to increased food access that will ensure that they will be able to make healthy choices when presented with them and consequently improve their health, a bridge over a imminent gap in current food desert eradication attempts. Implementing a national school garden program, in addition to supermarket incentives, is necessary to educate food desert residents about nutrition and agriculture, consequently achieving the societal goal of improving dietary health.

In order to remedy this current inefficiency with which the federal government and its agencies are handling, and will likely continue to handle, the food desert problem and permanently combat food deserts, lawmakers must fully recognize and enforce the connection between fresh food access, nutrition, and agricultural education.

Part II of this Comment will provide an overview of the food desert problem. Part III will provide an overview of the generally inefficient federal executive efforts regarding food deserts and statutes that govern the federal government's role in nutrition in education. Part IV will explain what school gardens are and explore how they can help remedy the problem holistically and sustainably. Part V will discuss the obstacle of the federal government's view of school gardens being a state issue. Part VI will introduce current and historical model programs around which effective school garden legislation focused on food deserts can be cre-

⁵ See generally Janne Boone-Heinonen et al., *Fast Food Restaurants and Food Stores: Longitudinal Associations with Diet in Young to Middle-aged Adults: The CARDIA Study*, 171 ARCHIVES OF INTERNAL MEDICINE 1162 (2011) (concluding that the availability of fast food, rather than the unavailability of healthy alternatives, may be the contributing factor to people's consumption of fast food); See generally Bas Verplanken and Wendy Wood, *Interventions to Break and Create Consumer Habits*, 25 JOURNAL OF PUBLIC POLICY & MARKETING 90 (2006) (explaining that consumer behaviors people have repeated into habits are not easily broken by intervention).

⁶ See Daniela Hernandez, *Access to Grocers Doesn't Improve Diets, Study Finds*, L.A. TIMES, July 17, 2011, available at <http://articles.latimes.com/2011/jul/17/health/la-he-food-deserts-20110712>.

ated. Finally, Part VII will recommend a model set of guidelines for a successful national school garden program.

II. THE FOOD DESERT PROBLEM

A. *What Are Food Deserts?*

The problem of food deserts in America is widespread.⁷ The term “food deserts” is used by the United States Department of Agriculture (“USDA”) to label areas characterized by “limited access to affordable and nutritious food, particularly . . . composed of predominantly lower income neighborhoods and communities.”⁸ In a congressionally-mandated study executed by the USDA, it was stated that 2.4 million households without access to a vehicle live more than a mile from a supermarket, and an additional 3.4 million households without access to a vehicle live between one-half to one mile from a supermarket.⁹ Access to a vehicle aside, “23.5 million people [8.4 percent of the United States population] live in low-income areas that are more than one mile from a supermarket.”¹⁰ In addition, people who live in low-income areas spend an average of 19.5 minutes travelling to a grocery store, a thirty percent increase over the national average.¹¹ These statistics illustrate that it is inherently more difficult for people living in food deserts to obtain fresh food than other Americans.

The result of this inaccessibility is that people who live in food deserts rely on fast food establishments, convenience stores, and in some cases, small grocery stores as their primary sources of food.¹² These convenience and small grocery stores offer very few choices to maintain a healthy diet and what they do offer is generally at a higher price than supermarkets.¹³ Although people have the choice to eat whatever they want, this choice is limited by the availability of food in their neighborhoods: those who do not have the choice to eat fresh produce cannot

⁷ See generally FOOD DESERT LOCATOR, <http://www.ers.usda.gov/data/food-desert/fooddesert.html> (last visited Nov. 13, 2011) (showing locations of food deserts on a U.S. map).

⁸ DEP’T OF AGRIC., ACCESS TO AFFORDABLE AND NUTRITIOUS FOOD: MEASURING AND UNDERSTANDING FOOD DESERTS AND THEIR CONSEQUENCES 1 (2009), available at <http://www.ers.usda.gov/Publications/AP/AP036/AP036.pdf>; See *id.* at 2-6 (provides a more in-depth discussion of how “access” is measured).

⁹ *Id.* at 20.

¹⁰ *Id.* at 35.

¹¹ *Id.* at 30-32.

¹² *Id.* at iv.

¹³ *Id.*

make the decision to have a more balanced diet. Additionally, those who are offered fresh produce cannot make the decision to have a more balanced diet if they have not been educated about what a balanced diet is. This type of knowledge is referred to in the nutrition field as “procedural nutrition knowledge,” and a lack of this type of knowledge affects consumer behavior.¹⁴ If people do not know what foods are healthy, they will not buy them.¹⁵ In food deserts, both nutritious food and knowledge about it is lacking, and merely improving access to food will not solve the problem.¹⁶

B. Food Desert Residents

A disturbingly common thread that ties together the victims of food deserts makes this problem more pressing. Those most affected by food deserts are residents of low-income areas and racial minorities.¹⁷ Many food deserts exist in socioeconomically disadvantaged areas, thus exposing disparities in food access based on income and race.¹⁸ It has been suggested that “food deserts in disadvantaged areas are arguably of more concern because a process of ‘deprivation amplification’ may contribute to social disparities, whereby area-level deprivation compounds individual disadvantage.”¹⁹ That is, groups who are already at a social disadvantage, such as low-income families and racial and ethnic minorities, suffer an amplified effect of lack of nutritious fresh food because of where they live.²⁰ To combat this pressing problem, the federal government has undertaken a number of executive and legislative measures.

III. CURRENT EFFORTS TO REMEDY PROBLEMS CAUSED BY FOOD DESERTS

A. Federal Food Desert Executive Efforts

An overview of the executive and legislative history surrounding food deserts exposes the problems that arise out of the current attempted solutions. The USDA’s report, published in 2009, marked the beginning of

¹⁴ M. Dickson-Spillmann & M. Siegrist, *Consumers’ Knowledge of Healthy Diets and its Correlation with Dietary Behaviour*, 24 J HUM NUTR DIET 54, 54-55 (2010).

¹⁵ See *id.* at 57.

¹⁶ See Rose Hayden-Smith, *Soldiers of the Soil: A Historical Review of the United States School Garden Army*, MONOGRAPH (Univ. of Cal.), Winter 2006, at 1, available at <http://groups.ucanr.org/victorygrower/files/47755.pdf>.

¹⁷ See DEP’T OF AGRIC., *supra* note 8, at 1.

¹⁸ Julie Beaulac et al., *supra* note 1, at 1.

¹⁹ *Id.*

²⁰ See *id.*

the government's involvement with the food desert problem.²¹ However, the concern about food deserts entered mainstream consciousness when Michelle Obama launched the highly publicized *Let's Move!* initiative in 2010, "dedicated to solving the problem of obesity within a generation" by improving the diets and health of children.²²

In pursuing this goal, the government realized that one of the major factors involved with children's health was the problem of inaccessibility to fresh food.²³ As part of the launch of *Let's Move!*, President Obama signed a Presidential Memorandum implementing a Task Force on Childhood Obesity.²⁴ This task force released a report that cited limited access to healthy food as a primary cause of obesity.²⁵ Thus, the government's fight against obesity became more closely related to its fight against food deserts,²⁶ and a major step toward solving the problem of obesity became improving fresh food access in food deserts.²⁷

The link between inaccessibility to affordable, fresh food and obesity being recognized, and the "[suggestion that] hunger and obesity may be two sides of the same coin"²⁸ led to the creation of the Healthy Food Financing Initiative ("HFFI").²⁹ The HFFI, a partnership between the Departments of Treasury, Agriculture, and Health and Human Services, has allocated \$400 million to combat the national epidemic of obesity, to "bring grocery stores and other healthy food retailers to underserved urban and rural communities across America."³⁰ This money is devoted solely to improving access to healthy food options in food deserts, an acknowledgement that the existence of food deserts is a public health issue.³¹

In actively supporting the *Let's Move!* initiative, the federal government has recognized the public health issues inherent in food deserts. As

²¹ See generally DEP'T OF AGRIC., *supra* note 8.

²² *About Let's Move*, LET'S MOVE!, <http://www.letsmove.gov/about> (last visited Oct. 4, 2011).

²³ *Id.*

²⁴ *About Let's Move*, *supra* note 22.

²⁵ WHITE HOUSE TASK FORCE ON CHILDHOOD OBESITY, SOLVING THE PROBLEM OF CHILDHOOD OBESITY WITHIN A GENERATION 61 (2010), available at http://www.letsmove.gov/sites/letsmove.gov/files/TaskForce_on_Childhood_Obesity_May2010_FullReport.pdf.

²⁶ *Id.*

²⁷ *About Let's Move*, *supra* note 22.

²⁸ *Healthy Food Financing Initiative*, *supra* note 4.

²⁹ *See id.*

³⁰ Press Release, U.S. Dep't of Health and Human Serv., Obama Administration Details Healthy Food Financing Initiative (Feb. 19, 2010), available at <http://www.hhs.gov/news/press/2010pres/02/20100219a.html>.

³¹ *See generally id.*

part of the aforementioned pledge to improve access, the Obama Administration made an announcement in July 2011 that large, and some small, retailers would be opening 1,500 supermarkets in food deserts, including SUPERVALU, Walgreens, and Wal-Mart.³² Another proposed expenditure is the Farmers' Market Promotion Program, where the USDA will award \$10 million in grants to help create roadside stands and healthy food outlets.³³ These government efforts are focused on improving access to healthy food options.³⁴ While a necessary and logical first step to resolving the issues, these efforts are not enough to combat these issues altogether if not supplemented with a way to ensure the fresh food sections of these supermarkets will be patronized. However, deriving a method to fully combat the issues is not without difficulty.

1. *The Complexities of Coming to a Solution*

The difficulty of determining how to fully combat health problems related with food deserts lies in identifying the reasons people do not eat healthily: is it merely because they do not have access to it, or are there other variables that affect consumer behavior that cannot be solved by only placing supermarkets in food deserts? The USDA's report recommends further research on market conditions, including consumer behaviors that contribute to food access discrepancies, as a critical step to writing policy that remedies problems associated with access limitations.³⁵ The USDA, however, is not the only entity that recognizes the difficulty of determining what effect that limited access, and on the other hand, what effect eventual increased access, has on the health of food desert residents.

It has been suggested that the government's focus on food deserts is misplaced because the concept of food deserts is not a real concern but rather a "mirage."³⁶ One reason for this allegation is that the USDA's

³² Kat Kinsman, *Michelle Obama Seeks to Stamp Out Food Deserts with the Help of Some Grocery Giants*, EATOCRACY (July 20, 2011, 4:30 PM), <http://eatocracy.cnn.com/2011/07/20/michelle-obama-seeks-to-stamp-out-food-deserts-with-the-help-of-some-grocery-giants/>.

³³ Rayne Pegg, *Farmers Market Promotion Program: Expanding Food Access Through Direct Marketing*, USDA BLOG (June 3, 2011, 1:53 PM), <http://blogs.usda.gov/2011/06/03/farmers-market-promotion-program-expanding-food-access-through-direct-marketing/>.

³⁴ *Healthy Food Financing Initiative*, *supra* note 4.

³⁵ DEP'T OF AGRIC., *supra* note 8, at 118.

³⁶ *If You Build It, They May Not Come: A Shortage of Healthy Food is Not the Only Problem*, THE ECONOMIST, Jul. 7, 2011, available at <http://www.economist.com/node/18929190>.

report only considers large supermarkets and does not include small grocery stores, farmer's markets, or roadside fruit and vegetable stands in determining how accessible fresh healthy food is within food deserts.³⁷ This may have skewed the results; by counting only large supermarkets, the report may have made it seem as though availability of fruits and vegetables in food deserts is less than it actually is.³⁸ This observation does not change the fact that people are currently not making healthy choices. Rather, taking this observation into consideration supports the opposite conclusion that they may be less likely to make healthy choices in the future when supermarkets are introduced into food deserts.

Research supports the government's reasoning behind its efforts to bring supermarkets to neighborhoods where fresh food access is wanting, but this research is disputed.³⁹ *Let's Move!* cites a multi-state study that concludes "for every additional grocery store in a neighborhood[,] produce consumption increases thirty-two percent for African Americans and eleven percent for whites."⁴⁰ These are significant increases, but is increased consumption alone necessarily going to solve the health problems inherent in food deserts? A recent study published in the Archives of Internal Medicine concludes that greater supermarket availability is generally unrelated to diet quality.⁴¹

Another issue is economic restrictions in food deserts, which are generally in low-income areas.⁴² Because over the last four years the healthiest food has increased in price at around twice the rate of junk food, it can be difficult to determine whether people do not make healthy choices because they are not willing / do not know how or because they cannot afford to.⁴³ However, cheaper options will most likely not change consumer behavior.⁴⁴

One proven way to positively affect consumption of fresh fruits and vegetables is through the use of experiential agricultural education, or teaching with school gardens, which targets children both as a major influence on present consumers (their parents) and to help build healthier

³⁷ DEP'T OF AGRIC., *supra* note 8, at 118.

³⁸ *If You Build It, They May Not Come: A Shortage of Healthy Food is Not the Only Problem*, *supra* note 36.

³⁹ See generally LET'S MOVE!, ACCESS TO HEALTHY AFFORDABLE FOOD, available at http://www.thefoodtrust.org/pdf/Food_access_factsheet.pdf (last visited Oct. 11, 2011); See generally Janne Boone-Heinonen et al., *supra* note 5.

⁴⁰ LET'S MOVE!, *supra* note 39.

⁴¹ See generally Janne Boone-Heinonen et al., *supra* note 5.

⁴² Julie Beaulac et al., *supra* note 1, at 1.

⁴³ See *If You Build It, They May Not Come: A Shortage of Healthy Food is Not the Only Problem*, *supra* note 36.

⁴⁴ See *id.*

habits for the future.⁴⁵ In her crusade for increased food access in food deserts, Michelle Obama has emphasized that education about nutrition is given in vain if there is no opportunity for people to make healthy choices.⁴⁶ The mirror image of this is equally true: opportunities for healthy choices are brought to these neighborhoods in vain if there is not adequate education to ensure that people are armed with information needed to make those choices.⁴⁷ This underscores the importance of agricultural education.

B. Child Nutrition Legislative Policy

In pursuing its overall goal of eliminating obesity within a generation, the *Let's Move!* initiative is not only working to improve access to fresh food in food deserts, it is actively working to improve school nutrition and nutritional education.⁴⁸ However, the *Let's Move!* initiative's encouragement of child nutrition and nutritional education is not a novel legislative goal. In fact, this goal began with the passing of the National School Lunch Act ("NSLA") in 1946.⁴⁹ Until now, child nutrition has remained a legislative priority, mostly through the improvements to the availability of healthy and local food offered in schools as meals.⁵⁰ Most recently, the Healthy Hunger-Free Kids Act of 2010 "authorizes funding for federal school meal and child nutrition programs and increases access to healthy food for low-income children."⁵¹ This Act also "reauthorizes child nutrition programs for five years and includes [an additional] \$4.5 billion in new funding for these programs over ten years."⁵² Clearly,

⁴⁵ See Sondra M. Parmer et al., *School Gardens: An Experiential Learning Approach for a Nutrition Education Program to Increase Fruit and Vegetable Knowledge, Preference, and Consumption Among Second-grade Students*, 41 JOURNAL OF NUTRITION EDUC. AND BEHAVIOR 212, 212 (2009).

⁴⁶ Press Release, Office of the First Lady, First Lady Michelle Obama Announces Nationwide Commitments to Provide Millions of People Access to Healthy, Affordable Food in Underserved Communities (July 20, 2011) available at <http://www.whitehouse.gov/the-press-office/2011/07/20/first-lady-michelle-obama-announces-nationwide-commitments-provide-milli>.

⁴⁷ See *id.*

⁴⁸ About *Let's Move!*, *supra* note 22.

⁴⁹ See Dep't of Agric., *Legislative History Related to Farm to School 1* (2010), http://www.fns.usda.gov/cnd/F2S/pdf/F2Sleg_history.pdf.

⁵⁰ *Id.* at 3.

⁵¹ *Child Nutrition Reauthorization: Healthy, Hunger-Free Kids Act of 2010, LET'S MOVE!*, http://www.whitehouse.gov/sites/default/files/Child_Nutrition_Fact_Sheet_12_10_110.pdf (last visited Oct. 9 2011).

⁵² *Id.*

Congress is concerned with child nutrition and nutritional education,⁵³ a concern that should inform legislation focused on food deserts.

The nationalization of a school garden program fits in with legislative policy related to child nutrition. Agricultural education speaks directly to legislative goals relating to children's health.⁵⁴ It is "the policy of Congress, as a measure of national security, to safeguard the health and well-being of the Nation's children and to encourage the domestic consumption of nutritious agricultural commodities and other food, by assisting the States, through grants-in-aid and other means."⁵⁵ It is further declared that the legislature recognizes the connection between "food and good nutrition and the capacity of children to develop and learn."⁵⁶ While this legislation recognizes an obligation to the nation's children, this responsibility can be better carried out through the nationwide implementation of a school garden program.

IV. WHAT CAN NUTRITIONAL EDUCATION THROUGH SCHOOL GARDENS AND GARDEN-BASED LEARNING DO TO IMPROVE FEDERAL FOOD DESERT POLICY?

People who live in food deserts must be educated about food and nutrition; otherwise, given the opportunity, they will not have the knowledge necessary to select fresh food when the opportunity is presented.⁵⁷ Healthy eating habits are not easily learned by those who have lived unhealthy lifestyles and do not know what fresh food is or where it comes from.⁵⁸ This problem affects several people across the country, but it is most dangerous for people who live in food deserts, where many are not only living unhealthy lifestyles but are unable to do otherwise because of limited access to affordable, fresh food.⁵⁹

Access and education need to go hand in hand, or else money spent to improve access will have been spent in vain. The *Let's Move!* initiative's focus on children is well placed. While there is currently a gov-

⁵³ *See id.*

⁵⁴ *See generally* Child Nutrition and WIC Reauthorization Act of 2004, 42 U.S.C. § 1751 (2006).

⁵⁵ *Id.*

⁵⁶ Child Nutrition Act of 1966, 42 U.S.C. § 1771 (2006).

⁵⁷ *See generally* M. Dickson-Spillmann & M. Siegrist, *supra* note 14 (concluding that misconceptions about what foods are healthy or nutritious affect how people shop).

⁵⁸ *See Jamie Oliver's Food Revolution (VIDEO): First Graders Can't Identify Fruits, Veggies*, HUFFINGTON POST (Apr. 28, 2010, 5:12 AM), http://www.huffingtonpost.com/2010/02/26/jamie-olivers-food-revolu_n_478824.html (depicting children who are unable to identify well-known, fresh, whole fruits and vegetables).

⁵⁹ *See generally* DEP'T OF AGRIC., *supra* note 8.

ernmental focus on school nutrition,⁶⁰ there is not enough attention placed on how this focus can help solve the impending problem of food deserts. There is a disconnect between the government's efforts on school nutrition and improving food access to food deserts.

School gardens can simultaneously improve fresh food access and people's ability to make positive choices.⁶¹ While the government is actively working to address both issues of school nutrition and food deserts, there is no apparent legislative acknowledgement that food deserts can be solved holistically through experiential agricultural learning through the use of school gardens. These efforts must be combined.

Good eating habits needed to help people make healthy choices when they have the chance need to start in schools for several reasons: almost all children and adolescents attend school; many children eat most of their meals at school, thus there are ample opportunities to practice healthy eating; the element of social pressure to eat unhealthily can be addressed; trained teachers are available for assistance; and evaluations suggest that school-based programs improve the eating behaviors of children.⁶² School-based nutrition education can improve various aspects of a student's life affected by dietary practices, including "health, growth, and intellectual development."⁶³

Research concludes that experiential agricultural learning is among the best of ways to improve children's diets, especially by increasing fruit and vegetable consumption.⁶⁴ And because eating habits learned as a child are more likely to affect future eating habits and consequentially lifelong consumer behavior,⁶⁵ an educational component targeted toward young children is necessary to complement any current or future food desert legislation aimed at improving access. A solid legislative effort to equip food deserts with school gardens would simultaneously increase access to healthy, low cost food and guarantee that children and their communities are armed with the right information to be able to make healthy choices.

⁶⁰ See generally *USDA School Nutrition Program Information*, SCHOOL NUTRITION ASS'N, <http://www.schoolnutrition.org/Content.aspx?id=13437> (last visited Oct. 9, 2011) (outlining the various programs in place that are geared toward school nutrition).

⁶¹ See FOOD AND AGRIC. ORG. OF THE UN, *A NEW DEAL FOR SCHOOL GARDENS* (2010), available at <http://www.fao.org/docrep/013/i1689e/i1689e00.pdf>.

⁶² CTR. OF DIS. CONTROL, *Guidelines for School Health Programs to Promote Lifelong Healthy Eating*, 45 RR 1, 8 (1996) available at <http://www.cdc.gov/mmwr/preview/mmwrhtml/00042446.htm>.

⁶³ *Id.* at 2.

⁶⁴ See generally Sondra M. Parmer et al., *supra* note 45.

⁶⁵ See *id.* at 212.

The government, in making efforts to improve the health of the American citizens, must fully acknowledge the fact that good eating habits should be fostered by an experiential learning component.⁶⁶ Education through school gardens is an example of such a component; they are used to teach children about food in a hands-on manner, as well as to grow food.⁶⁷ The use of school gardens in curriculum as a way to introduce children to agriculture, while teaching them lessons in nutrition and other subjects is referred to as “garden-based learning.”⁶⁸ The benefits are numerous:

[School gardens can] show children how to grow a variety of foods – vegetables, fruits, legumes, small animals – and do this *with a good diet in mind*; demonstrate to children and families how to extend and improve a diet with home-grown foods; increase children’s preference for and consumption of vegetables and fruits; enhance school meals with micronutrient-rich vegetables and fruits; promote, or re-establish, horticultural skills in agriculture-dependent economies; foster entrepreneurial skills in the area of market gardening; [and] raise awareness of the need for environmental protection and soil conservation.⁶⁹

Studies show that garden-based learning increases students’ “understanding of food and its relationship to their health” and their consumption of fresh fruits and vegetables.⁷⁰ It has been suggested that the solution to obesity is a reconnection to how food is produced.⁷¹

In addition to the remarkable effect of school gardens improving the health of students, they are also superior to other types of passive traditional classroom nutritional or agricultural education, especially in the context of food deserts, for two reasons: (1) school gardens, can *increase food access* to the communities – children can bring home seedlings and fresh produce and pass along what they are learning to their families and

⁶⁶ See generally DANIEL DESMOND ET AL., REVISITING GARDEN BASED LEARNING IN BASIC EDUCATION: PHILOSOPHICAL ROOTS, HISTORICAL FOUNDATIONS, BEST PRACTICES AND PRODUCTS, IMPACTS, OUTCOMES, AND FUTURE DIRECTIONS, (Food and Agric. Org. of the United Nations & Int’l Inst. for Educ. Planning, 2004), available at <http://www.fao.org/sd/erp/revisiting.pdf> (discussing the role of garden-based learning in basic education and positive impacts on children’s academic achievement, environmental education, health and nutrition, and families and communities).

⁶⁷ See *id.* at 20.

⁶⁸ See *id.*

⁶⁹ FOOD AND AGRIC. ORG. OF THE UN, *supra* note 61, at 3-4.

⁷⁰ CAL. SCH. GARDEN NETWORK, GARDEN-BASED LEARNING WORKING GROUP – RESEARCH “BRIEFS”: NUTRITION AND HEALTH – FOR TEACHERS AND ADMINISTRATORS, <http://www.csgn.org/images/pdf/nutritionbrief.pdf> (last visited Nov. 11, 2011).

⁷¹ J. ORME ET AL., FOOD FOR LIFE PARTNERSHIP EVALUATION: SUMMARY REPORT 4 (2011) available at http://eprints.uwe.ac.uk/14453/1/FFLP_UWE%2DCardiff_Evaluation_SummaryReport.pdf.

other community members; and (2) school gardens, while improving nutritional knowledge, do not detract from other national and state academic standards.⁷²

Nutrition and agricultural education does not need to, nor should it, detract focus from other important subjects.⁷³ Schools are under enormous pressure to perform on standardized achievement tests, and unfortunately, anything that seems to lead teachers away from that goal, no matter how much it could benefit students, is likely to draw criticism.⁷⁴ The link between good health and academic performance is clear: children who are chronically undernourished score lower on standardized tests.⁷⁵ Garden-based learning leads to increased academic performance and higher test scores.⁷⁶ Therefore, teachers can continue to further other more traditional educational goals, as well as help children live up to their potential on required standardized tests.⁷⁷

The federal government, through various allocations and pilot programs, has shown an interest in school gardens and the types of benefits they provide.⁷⁸ However, it seems as though federal lawmakers have not yet fully recognized that hands-on education in the form of gardening can be an important step in fighting food deserts, a cause which the government has allocated funds to support.⁷⁹

V. AN OBSTACLE: RESISTANCE TO FEDERAL IMPLEMENTATION

Taking steps toward reaping the benefits school gardens can have on the food desert problem is not without obstacles. The Obesity Task Force study that propelled the *Let's Move!* initiative into making food deserts a national concern recommends school gardens to be used when

⁷² See generally DESMOND ET AL., *supra* note 66 (giving examples of school gardens used for consumption and explaining positive impacts of school gardens on academic achievement).

⁷³ See generally CAL. SCH. GARDEN NETWORK, GARDEN-BASED LEARNING WORKING GROUP – RESEARCH “BRIEFS”: ACADEMICS – FOR TEACHERS AND ADMINISTRATORS, <http://csgn.org/images/pdf/academicsBrief.pdf> (last visited Nov. 11, 2011) (summarizing studies that show the benefits of garden-based learning on academics).

⁷⁴ See James E. Ryan, *The Perverse Incentives of the No Child Left Behind Act*, 79 N.Y.U. L.Rev. 932, 933 (2004) (describing the impact that the No Child Left Behind Act has on the push for students to score highly on standardized tests).

⁷⁵ CTR. OF DIS. CONTROL, *supra* note 62, at 2.

⁷⁶ CAL. SCH. GARDEN NETWORK, *supra* note 73.

⁷⁷ See *id.*

⁷⁸ See generally Child Nutrition and WIC Reauthorization Act of 2004, 42 U.S.C. § 1769 (2006).

⁷⁹ See generally *Healthy Food Financing Initiative*, *supra* note 4 (outlining general information about the Healthy Food Financing Initiative).

possible as a way to educate children about nutrition but reiterates the fact that this is a state concern.⁸⁰ The USDA's report says something similar: it mentions briefly that state and local efforts are being made to improve nutritional education,⁸¹ with no mention of the possible effect of a national effort. Statements like this are contradictory to the policy the federal government has established through food desert executive efforts.

The current policy creates the appearance that the federal government is assuming a duty to remedy the food desert problem on a national level. Increased access to fresh food has a symbiotic relationship with education, which provides a degree of sustainability to that increased access. A federal approach would bring a nationwide solution to the nationwide problem of obesity.

VI. DEVELOPING A MODEL PROGRAM: EXAMPLES FROM THE PAST AND PRESENT

A recommendation for a comprehensive national school garden solution should be informed by and founded in past and present legislation that combats both food deserts and dietary health education. An informed reflection on these programs can lead to a holistic and sustainable approach to conquering problems caused by food deserts. It is first prudent to look to the past, where nationalized school gardening was once utilized as a way to increase food production, among other things. The new People's Garden School Pilot Program can start as a good foundation in writing a solid program. California's thorough school garden legislation can be used as model as well. In addition, the operation of the National School Lunch Program can serve as an example of an alternative to awarding school garden grants competitively.

A. *The United States School Garden Army*

While the term "food desert" is relatively new, the problem of limited food supply is not.⁸² National school gardens, as a solution to this problem, have a history in the United States, dating back to World War I.⁸³ When Americans suffered from a lack of food and a growing distance from the land and the process that provides that food, the nation utilized school gardens for improving access and agricultural education.⁸⁴ During

⁸⁰ WHITE HOUSE TASK FORCE ON CHILDHOOD OBESITY, *supra* note 25, at 45, 94.

⁸¹ DEP'T OF AGRIC., *supra* note 8, at v.

⁸² See Rose Hayden-Smith, *supra* note 16 at 2-5.

⁸³ See *id.* at 2.

⁸⁴ See *id.*

World War I, many of the country's farmers were needed overseas, exposing Americans to circumstances that gravely limited food production.⁸⁵ This happened at a time when the gap between industrial and rural values was increasing, as it had become less imperative that the industrialized states know about food production.⁸⁶ The federal government nationalized a school garden program, called the United States School Garden Army ("USSGA").⁸⁷ This program increased food supply and consequently the health of the American people.⁸⁸ It was supposed to be permanent but was unfortunately lost with the end of the war.⁸⁹

Comparing wartime conditions with those endured by people in food deserts may seem like a stretch, but this comparison can underscore the direness of the situation: where fresh food is lacking, school gardens are a effective and viable option. The USSGA could be used as a model for a nationalized school garden program.⁹⁰ Much like people who live in food deserts, those living during World War I were faced with limited access to food and, as a result, poor nutrition.⁹¹ This was also a time of high instances of diet-related illness, as evidenced by the rationale behind the passing of the 1946 National School Lunch Act.⁹² Today, diet-related illness is a huge, nationwide, *preventable* problem.⁹³ Just as when this country was in the midst of World War I, this is a time of crisis – diet-related illness is one of America's top killers.⁹⁴

In the midst of the current food desert problem, this government can look to the past to inform the future. The USSGA was a national curriculum that allowed for regional variations according to climate or unique necessities of the community.⁹⁵ Students were sent home with gardening literature and were visited at home by USSGA officials conducting evaluations of gardening efforts.⁹⁶ There existed a strong pur-

⁸⁵ *See id.* at 3

⁸⁶ *See id.* at 2-3.

⁸⁷ *Id.* at 2.

⁸⁸ *Id.* at 4.

⁸⁹ *Id.* at 8-9 (However, a version of each of the WWI gardening programs returned with America's entry into WWII. These Victory Gardens were also very successful. *See id.* at 11-12).

⁹⁰ *See generally id.*

⁹¹ *See id.*

⁹² Dep't of Agric., *supra* note 49, at 1.

⁹³ NCI Health Information Tip Sheet for Writers: *Diet and Disease*, NAT'L CANCER INST. (Feb. 26, 2004), <http://www.cancer.gov/newscenter/entertainment/tipsheet/diet-related-diseases>.

⁹⁴ *See id.*

⁹⁵ Rose Hayden-Smith, *supra* note 16, at 7.

⁹⁶ *Id.* at 9.

pose to link what was learned at school with behavior at home, and adults were among those intended to be benefited by the program.⁹⁷ These goals of linking food education with home behavior and children having a hand in improving access to their communities are essential to a school garden program focused on today's food deserts.

B. The Pilot Program Legislation

Today, in addition to general declarations that assert the government's responsibility for the nutrition of the nation's children in the proximate code sections, Congress addresses school gardens.⁹⁸ Perhaps the most relevant statute is that which provides federal funding for school gardens, which takes place through competitive grants.⁹⁹

This statute is not solely devoted to funding school gardens. Rather, the primary goal of this program is to assist eligible¹⁰⁰ schools through grants and technical assistance to "implement farm to school programs that improve [school] access to local foods."¹⁰¹ Competitive grants are awarded to be used by schools for: "(1) training, (2) supporting operations, (3) planning, (4) purchasing equipment, (5) *developing school gardens*, (6) developing partnerships, and (7) implementing farm to school programs."¹⁰² One criterion for selection of the recipients of these grants is that the program "incorporate experiential nutrition education activities in curriculum planning that encourage the participation of school children in farm and garden-based agricultural education activities."¹⁰³

The *Let's Move!* initiative has promoted the use of community gardens as a way to improve access to fresh produce.¹⁰⁴ The People's Garden Program has assisted communities in starting their own community gardens through grants.¹⁰⁵ In April 2011, the Food and Nutrition Service, authorized by the aforementioned statute issued a \$1 million grant to

⁹⁷ *Id.*

⁹⁸ Child Nutrition and WIC Reauthorization Act of 2004, 42 U.S.C. § 1769 (2006).

⁹⁹ *Id.*

¹⁰⁰ A school eligible to receive grants under this section is a "school or institution that participates in a program under [the NSLA] or the school breakfast program established under . . . the Child Nutrition Act of 1966." Child Nutrition and WIC Reauthorization Act of 2004, 42 U.S.C. § 1769 (2006).

¹⁰¹ 42 U.S.C. § 1769.

¹⁰² 42 U.S.C. § 1769 (emphasis added).

¹⁰³ 42 U.S.C. § 1769.

¹⁰⁴ *See generally Start a Community Garden*, LET'S MOVE!, <http://www.letsmove.gov/start-community-garden> (last visited Oct. 9, 2011).

¹⁰⁵ *People's Garden Grant Program*, U.S. DEP'T OF AGRIC. (Aug. 8, 2011), <http://www.csrees.usda.gov/fo/peoplesgardengrantprogram.cfm>.

Washington State University to implement the People's Garden School Pilot Program.¹⁰⁶

The primary intent of the statute that authorizes pilot programs for community gardens in schools, such as the People's Garden School Pilot Program, is to increase the use of local food in schools.¹⁰⁷ This is the only federal legislation that provides for the issuance of grants for school gardens, and it is silent on one of the most beneficial uses for school gardens: the potential for experiential garden-based learning.¹⁰⁸ The utilization of experiential garden-based learning is merely used as one criterion to choose grant recipients.¹⁰⁹ The subsection of the only statute that authorizes grant money to develop school gardens is hidden within a statute whose main goal is to promote the use of local food in schools.¹¹⁰ This particular legislative goal runs parallel to the government's larger goal of providing food access to communities, such as food deserts, that otherwise would not have such access.¹¹¹ This is an example, however, of how the multi-faceted benefits of school gardens to fulfill legislative goals are not being fully utilized by the legislature.¹¹² Experiential garden-based learning is not currently given enough emphasis in the statute that awards grants for school gardens, nor is its potential for helping to combat food deserts.¹¹³

C. California's School Garden Legislation

School garden legislation in the past has been created and enforced at the state level.¹¹⁴ One of the best examples of state school garden legislation is California's *Garden in Every School* initiative, which was launched in 1995.¹¹⁵ Assembly Bill 1535, the California Instructional School Garden Program authorized the California Department of Education "to award \$15 million in grants over a period of three years to pro-

¹⁰⁶ Grants, DEP'T OF AGRIC. (June 15, 2011), <http://www.fns.usda.gov/outreach/grants/garden.htm>.

¹⁰⁷ Child Nutrition and WIC Reauthorization Act of 2004, 42 U.S.C. § 1769 (2006).

¹⁰⁸ See 42 U.S.C. § 1769.

¹⁰⁹ 42 U.S.C. § 1769.

¹¹⁰ 42 U.S.C. § 1769.

¹¹¹ See 42 U.S.C. § 1769.

¹¹² See generally 42 U.S.C. § 1769.

¹¹³ See generally 42 U.S.C. § 1769.

¹¹⁴ Examples of states that have enacted school garden legislation include California, Oregon, and Washington. See generally CAL. EDUC. CODE §§ 51795-51798, OR. REV. STAT. § 336.426, WASH. REV. CODE ANN. § 28A.320.185.

¹¹⁵ *School Garden Program Overview*, CAL. DEP'T OF EDUC. (Apr. 13, 2011), <http://www.cde.ca.gov/ls/nu/he/gardenoverview.asp>.

mote, develop, and sustain instructional school gardens.”¹¹⁶ The funding ended in 2009, which was the end of that three-year period.¹¹⁷ At the present time, no work has been done to renew grants or give new ones due to California’s current budget crisis.¹¹⁸ Though the budget crisis has forced future funding to be put on hold before the *Garden in Every School* goal has been met, AB 1535 has been cited as being model school garden legislation.¹¹⁹

In establishing the California Instructional School Garden Program, California placed the following in its Legislative Findings and Declarations:

The Legislature finds and declares all of the following:

(a) School gardens provide an interactive, hands-on learning environment in which pupils learn composting and waste management techniques, fundamental concepts about nutrition and obesity prevention, and the cultural and historical aspects of our food supply. School gardens also foster a better understanding and appreciation of where food comes from, how food travels from the farm to the table, and the important role of agriculture in the state, national, and global economy.

(b) Encouraging and supporting school gardens creates opportunities for children to learn to make healthier food choices, participate more successfully in their education experiences, and develop a deeper appreciation of their community.

(c) School garden programs can equally enhance any subject area including science, environmental education, mathematics, reading, writing, art, nutrition, physical education, history, and geography. School gardens provide a unique setting in which improved pupil performance can be achieved.¹²⁰

These findings are truer now than they were in 1995, based on the health conditions of the populace and the growing food desert epidemic.¹²¹

D. The National School Lunch Program

The current National School Lunch Program (“NSLP”) is not directly related to school gardens, but it is one of the primary vehicles of the gov-

¹¹⁶ *Id.*

¹¹⁷ CAL.EDUC.CODE § 51796.2 (West 2004).

¹¹⁸ Tracy Correa, *Valley Kids Find Fruitful Labor in School Gardens*, FRESNO BEE (Apr. 26, 2010, 10:26 AM), <http://www.fresnobee.com/2010/04/25/1910392/valley-kids-find-fruitful-labor.html>.

¹¹⁹ Rose Hayden-Smith, *The California “Garden in Every School” Story* (Sept. 7, 2006) (presented at a National Garden Association Conference) (on file with author).

¹²⁰ CAL.EDUC.CODE § 51795 (West 2004).

¹²¹ *NCI Health Information Tip Sheet for Writers: Diet and Disease*, *supra* note 93; *See generally* DEP’T OF AGRIC., *supra* note 8, at 1.

ernment's involvement in school nutrition and can be of some guidance to building school garden legislation. Because the use of school gardens in terms of food desert legislation is very closely related to the legislative goals of NSLP, it can serve as an operational model for a school garden program as an alternative to awarding competitive grants. The NSLP is federally funded and devoted to providing nutritious lunches to school children.¹²² The program operates by reimbursing agencies, including public and private nonprofit schools and licensed residential childcare institutions, for every meal served.¹²³ The federal government also provides information for states on how to operate a National School Lunch Program.¹²⁴ The NSLP is a good current example of how a national school garden program can be run at a federal level since its goals coincide with goals of a school garden program and it is more widely available than a program based solely on competitive grants would be.

VII. RECOMMENDATION: A NATIONAL SOLUTION TO A NATIONAL PROBLEM

It is time for the federal government to recognize the unique benefits school gardens can have on food deserts, particularly their ability to simultaneously improve food access and educate children about what healthy food is in an effective and sustainable way. An increased effort toward nutrition and agricultural education is necessary to bridge the gap between food desert residents' reliance on fast food and other equally unhealthy foods and the inevitable influx of healthy choices brought to them by initiatives for improved fresh food access. Funds allocated to school gardens should supplement funds allocated for improved food access in food deserts. In making a recommendation for guidelines for federal school garden legislation with the intent to holistically combat the food desert problem, one must combine the strengths of the programs currently in effect while adding the necessary educational component required to change ingrained, unhealthy eating habits in a sustainable way.

Like the USSGA, which helped this country overcome a similar nationwide food crisis years ago, a model piece of school garden legislation should be nationalized. The School Garden Pilot Program should be expanded to food deserts where it is most needed and should also be implemented with all the benefits of school gardens and garden-based

¹²² *School Lunch*, CAL. DEP'T OF EDUC., <http://www.cde.ca.gov/ls/nu/sn/nsllp.asp> (last visited Oct. 4, 2011).

¹²³ *Id.*

¹²⁴ *Id.*

learning in mind. It should be implemented with the legislative goals of promoting local food in schools and increasing fresh food in the community, as well as nutritional and other educational benefits for children to help them make healthy choices when offered with the chance to do so.

The program should not be operated solely through competitive grants, like the current Pilot Program.¹²⁵ Funds authorized by initiatives aimed at improving access are not awarded based on competitive grants, and neither should funds spent on an educational component, especially since this component will potentially be what makes improved food access worth the government's efforts.

The legislative findings of states that have implemented a school garden program should be considered, particularly those of California. The California legislature has done something that the federal government is yet to do: (1) declare the connection between experiential agricultural education and nutrition and (2) declare the usefulness of school gardens in the curriculum of other subjects.¹²⁶ These findings and declarations underscore the fact that experiential agricultural education through garden-based learning has an impact on students' nutritional knowledge, as well as their educational experiences in general, which is a missing link in federal food desert legislation.

The federal government should adopt a similar enthusiasm for the use of school gardens. California's findings that school gardens' potential for hands-on learning both increase children's knowledge of where food comes from and also provides immediate opportunities for healthy eating that coincide with the government's current goals to provide healthy choices to food deserts, as well as improve the health of children.¹²⁷ The use of school gardens could benefit the entire country; however, due to the greater impact that school gardens could have in food deserts in particular, the focus should initially start there.

The operation of the National School Lunch Program can serve as a framework for a National School Garden Program. Competitive grants could be awarded, but with preference given to school gardens implemented in food desert areas. Because school gardens benefit, and do not detract from, academic performance, they should be considered just as important as school lunches. Thus, after initial grants are awarded to establish programs, schools should be reimbursed through a system similar to the National School Lunch Program. This will provide an on-going incentive to produce. A primary factor in calculating reimbursements

¹²⁵ See *supra* Part V.B.

¹²⁶ CAL.EDUC.CODE § 51795 (West 2004).

¹²⁷ See *generally id.*

could be how much food and seedlings are being sent home with children to their families and communities.

A nationalized curriculum, like the USSGA, as opposed to a federally funded program, is not allowed by modern federal education laws.¹²⁸ Thus, in accordance with current federal education laws that prohibit the federal government from infringing upon states' rights of school curriculum,¹²⁹ school policymakers for the states must retain the freedom to write curriculum based on the needs and resources of the particular community. This actually works well for a program such as school gardens, as it coincides with the regional and environmental differences found with agriculture in different states.

VIII. CONCLUSION

Lawmakers must reconsider throwing more money and food into food deserts without simultaneously empowering the residents with the knowledge needed to take advantage of the money spent and food supplied. If nothing is done to ensure that food desert residents will be able to make informed choices regarding their newly improved access, this money will be spent in vain. School gardens are the best solution to the food desert problem; children are able to influence their parents as today's consumers, as well as pass their knowledge on to future generations, sustaining the solution of improving access. Instead of putting a supermarket on the corner today, the government can promote the good health of tomorrow through experiential agricultural learning with the

¹²⁸ 20 U.S.C. §3403. (2011)

(a)It is the intention of the Congress in the establishment of the Department [of Education] to protect the rights of State and local governments and public and private educational institutions in the areas of educational policies and administration of programs and to strengthen and improve the control of such governments and institutions over their own educational programs and policies. The establishment of the Department of Education shall not increase the authority of the Federal Government over education or diminish the responsibility for education which is reserved to the States and the local school systems and other instrumentalities of the States.

(b)No provision of a program administered by the Secretary [of Education] or by any other officer of the Department shall be construed to authorize the Secretary or any such officer to exercise any direction, supervision, or control over the curriculum, program of instruction, administration, or personnel of any educational institution, school, or school system, over any accrediting agency or association, or over the selection or content of library resources, textbooks, or other instructional materials by any educational institution or school system, except to the extent authorized by law.

¹²⁹ 20 U.S.C. §3403.

use of school gardens. Not only will school gardens help ensure better choices are made, they will help improve access as well: a holistic approach.

The United States government should expand its People's Garden School Pilot Program, taking cues from the United States School Garden Army and more recent state legislation, and include a reimbursement for production program to address the problems related to food deserts. This is an opportunity to revolutionize how this country thinks about solutions to the food desert problem as well as education itself.

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¹³⁰ J.D. Candidate, San Joaquin College of Law, 2014. I would like to thank the SJALR 2011-2012 Editorial Board, especially Christina Widner, and Professor Christine Goodrich for their honest and invaluable feedback on earlier drafts of this Comment. I would also like to thank the other SJALR staff members for their help cite checking this Comment and their overall comradely moral support. Finally, I would like to thank my parents, Frank and Anne Marie Ambrose; their love and support make my pursuit of a law degree, and all of my pursuits, possible.