



**Buying in to Local Foods:  
A Market and Sociopolitical Analysis of the U.S. Food System**

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*“Evolution has shown us that nothing ever stays the same:  
continents drift across the oceans, jungles turn into deserts,  
and dinosaurs make way for silky anteaters. And where the wind and the  
sun once dictated the course of evolution, the near future of this planet  
resides in the mind and action of man. The balancing of and the struggle  
between greed, compassion, fear, and intelligence will now determine  
the destiny of all life on Earth.” –Charles Lynn Bragg*

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## ABSTRACT

A considerable number of materials have been prepared ranging from “how to” booklets for local farmers to highly quantitative economic analyses of the United States food system. This report examines the economic and sociopolitical factors that must be overcome for local agricultural to be a truly sustainable solution to a slough of environmental problems. As this report will show, local farmers are, as a whole, more intimately tied to environmental issues and are thus more willing to adopt sustainable practices. Academics and professionals alike recognize the extreme hardships of transforming American agricultural policies. Nonetheless, a few comparatively simple measures can be taken to spur local farming initiatives. Overcoming the present barriers will require educational efforts, political reform and a fundamental shift in the current market paradigm. Each of these components can be driven by well-designed, clear and appropriate legislation. This document shows that a reasonable public policy must at least shift funding to sustain small farmers, provide incentives for businesses to support local farming initiatives, standardize food labels and publicize the benefits of buying local products in order to secure Earth’s natural resources and ensure community stability.

## METHODS

Several methods were employed to answer the research question: “What market, social and political barriers must be removed to make local produce a truly viable alternative to industrialized farming practices?” Given the great abundance of literature available on best management practices, the Farm Bill and local agriculture, this investigation began with a thorough literature review. From this review particularly pertinent topics were explored with experts from the community, environmental consultants and members of the EPA. Later the structure of the Farm Bill was examined in conjunction with relevant market and social issues.

Finally, a policy memorandum targeting state elected officials, the group that ultimately drives the success of the local products market, was created for distribution to local elected officials. Ultimately, this project offers suggestions for minimizing the barriers to local produce while maximizing environmental benefits.

#### JUSTIFICATION FOR RESEARCH

Agricultural practices can have significant impacts on both environmental and human health. As the population continues to grow, it becomes increasingly important how the public and elected officials alike choose to manage Earth's resources. The following text shows how the current farming structure is not a socially desirable, economically feasible or ecologically viable solution to this national problem. Thus, much research has turned to alternative options such as organic farming and locally grown products in an attempt to provide consumers with a truly sustainable food system.

Numerous studies have been conducted throughout the United States that examine the incentives for and barriers to local product consumption.<sup>1</sup> Additional studies have investigated the most affective economic and marketing strategies for promoting environmentally friendly foods, including local products.<sup>2</sup> Despite these notable research successes, few tools have been created that put these research findings into the hands of decision makers, producers, suppliers or consumers. Therefore, the success of local products has been notably limited.

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<sup>1</sup> Burness, David and Brian Harris. Demands for Local and Organic Produce: A Brief Review of the Literature. Institute for Public Policy and Business Research. U. of Kansas. Lawrence, KN, April 2000. Tegtmeier, Erin. "Factors Affecting Symbolic and Use Adoption of Local Foods for Consumers in Black Hawk County, Iowa. Iowa State University, 2003. Wilson, Leah. "Local Food, Local Policy: A Case Study on Engaging Policy Makers in the Development of Their Foodshed." The Leopold Center for Sustainable Agriculture. October 2007.

<sup>2</sup> Benbrook, Charles. "What Will It Take to Change the American Food System?" W.K. Kellogg Foundation Food and Society Networking Conference. The Woodlands Center. 23 April 2003. Berkenkamp, JoAnne and Pam Mavrolas. "Delivering the Goods: Market-Based Change in Phase II of the Integrated Farming Systems Initiative." W.K. Kellogg Foundation. April 2002. Greenberg, Quinlan, Rosner Research Inc. "Building Support for Buying Local." Foodroutes Network. Washington, DC. May 2002.

Non-point source pollution from agricultural runoff has been identified as a major threat to human and environmental wellbeing. Moreover, current water and farm policies have been largely unsuccessful at minimizing these anthropogenic damages. Though a wide variety of research has examined the various successes and shortcoming of both types of policy, most of the results have not been incorporated into public policy. While skeptics of local produce argue that it is not a viable alternative, the organic food model proves that alternatives to industrialized agriculture are indeed possible.

### DRIVING PRINCIPLES

In this research there are three primary principles that ultimately lead to both short and long term policy recommendations. As the following text will show, there is a growing problem of vertical integration in the agricultural arena that is taking profits away from farmers themselves. A few noteworthy papers have shown that buying local products breaks down some of these integrated levels and returns comparatively more money to farmers than more industrialized approaches. Thus, the first principle is that local products do indeed provide greater profits for farmers.

Jennifer Curtis of Curtis Consulting demonstrated that insufficient funding is the primary barrier to the use of best management practices. Here, best management practices are considered to be effective, practical, structural or nonstructural methods which prevent or reduce the movement of sediment, nutrients, pesticides and other pollutants from the land to surface or ground water, or which otherwise protect water quality from potential adverse effects of silvicultural activities.<sup>3</sup> Second, it is noted that best management practices are effective in reducing the detrimental impacts of agriculture on waterways. That is to say that with additional

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<sup>3</sup> Watershed management Protection Program. Division of Forestry and Wildlife, U of Hawaii. 18 Oct. 2007. <<http://www.state.hi.us/dlnr/dofaw/wmp/bmps.htm>>.

funding provided from the sale of local products, farmers will be able to install best management practices that will indeed work to keep local waterways more pristine.

Lastly, consumers are assumed to actually buy local products over other alternatives. This final principle holds true provided there is an increase in the availability of local products as well as an increase in consumers' knowledge regarding the benefits of buying local products. As the following text will illustrate, several researchers have identified lack of availability and minimal knowledge of local products as the two main barriers to local product consumption. Thus, it is assumed that consumers' stated preferences for local products do indeed coincide with their revealed preferences. Each of the aforementioned principles is supported by published research detailed in the report that follows. It is further worth noting that for the purpose of this research the term "local product" refers to an agricultural good that is produced within 100 miles of its final place of sale.

#### THE ECONOMICS AND EXTERNALITIES OF AGRICULTURE

Excessive consumption rates coupled with a rapidly growing population is placing an intolerable stress on the nation's waterways. No longer able to disregard this prominent problem, in 2004 the U.S. Commission on Ocean Policy and the Pew Oceans Commission reported that U.S. coastal waters and oceans are in a state of crisis due, in part, to contaminated sediments and nutrient pollution.<sup>4</sup> Though agricultural operations are responsible for upwards of 73 percent of the nutrient pollution in a given area, these non-point sources remain largely unregulated.<sup>5</sup> Land-based farming practices are often the major cause of eutrophication, pathogen increases and unfavorable oxygen situations including hypoxia. Indeed, large-scale

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<sup>4</sup> Schnoor, J. L., "Coastal Waters Need Action." American Chemical Society (2005): 55A.

<sup>5</sup> Schleich, J. and D. White. "Cost Minimization of Nutrient reduction in Watershed management Using Linear Programming." Journal of the American Water Resources Association 33 (1997): 136.

farming practices, in particular, can cause considerable harm to both human and environmental health. It is appallingly evident that the externalities of agricultural production reach well beyond the aforementioned aquatic impacts and attack community stability, economic security and overall environmental wellbeing.

The price consumers pay for food at the grocery store does not illuminate the true cost of agriculture due to multiple externalities. Still, many Americans advocate for cheap food. Raising food prices is notably unpopular among elected officials and the general public alike, because it marginalizes the poor and further stresses household budgets. Despite the United States comparatively low costs for edible products, consumers pay for food in far greater ways than merely their grocery store bill. As industrial agriculture grows, the negative impacts of these practices continue to threaten human and environmental vitality at all levels of production. Tegtmeier and Duffy estimate that the externalities of industrialized farming practices range from \$5.7 to \$16.9 billion annually, with \$419.4 million per year being directly attributable to water resource damage.<sup>6</sup> In addition to this obvious financial burden borne by the general public, individuals are becoming increasingly marginalized in the decision making process regarding production methods. Therefore, consumers are unable to express their choice for local products because supply is so markedly limited. Moreover, there is a growing division of social classes due to the poorly defined property rights, market failures and economic inefficiencies fueling these externality problems.<sup>7</sup>

In an effort to address the environmental and human health aspects of these externalities, the United States have continually work to amend the Farm Bill with varied success.

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<sup>6</sup> Tegtmeier, Erin and Michael Duffy. "External Costs of Agricultural Production in the United States." *International Journal of Agricultural Sustainability* 2.1 (2004): 1, 6.

<sup>7</sup> Flora, J.L., C.J. Hodne, W. Goudy, D. Osterberg, J. Kliebenstein, K.M. Thu and S.P. Marquez. "Social and Community Impact." Environmental Health Sciences Research Center Iowa State University, 2002.



Unfortunately, the current structure of the Farm Bill serves primarily to uphold the status quo and recently proposed amendments have allocated little financial or political support for pollution prevention measures such as best management practices. From this fact it is evident that fundamental market forces play a major role in the structure of the food system and ultimately control many political decisions.

For over two decades academics and professionals alike have voiced a discontent with the structure of the agricultural industry market. As Tegtmeier so eloquently notes, the globalization and concentration of market power increases the exploitation of segments of society as well as Earth's resources and causes the decline of democratic and political power as economic, corporate powers continue to concentrate.<sup>8</sup> One of the most concerning aspects of this shift is the vertical integration of the food system at nearly all levels that marginalizes consumers. Consequently, the methods of food production, processing distribution are increasingly dictated with little negotiation.<sup>9</sup> What is more, there is an apparent, self-perpetuating status quo. Income streams dictate capital flows and consequently control the ability to carry out research and development.<sup>10</sup> Thus, those who have the greatest income have the resources to promote their own practices as well as information flows to consumers and policymakers alike.

Agricultural endeavors must meet a variety of socioeconomic, political and ecologic demands while satisfying the exponentially increasing consumption rate of the American people. In December 2007 the United States Senate approved a \$286 billion amendment to the Farm

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<sup>8</sup> Tegtmeier, Erin. "Factors Affecting Symbolic and Use Adoption of Local Foods for Consumers in Black Hawk County, Iowa." Iowa State University (2003): 1.

<sup>9</sup> Ibid., pp. 1

<sup>10</sup> Benbrook, Charles. "What Will It Take to Change the American Food System?" W.K. Kellogg Foundation Food and Society Networking Conference. The Woodlands Center. 23 April 2003: 6.

Bill.<sup>11</sup> Clearly, agricultural practices are already very heavily subsidized. In fact, the magnitude of the Farm Bill's funding comes second only to military expenses. The most classic approach to minimizing pollution is the identification and subsequent penalizing, most often in monetary form, of a polluter based on a set series of criteria. Despite the inherent hardships of sufficiently identifying agricultural non-point source polluters, administering government-issued penalties to an already heavily subsidized industry is simply economic nonsense. The government would ultimately be subsidizing their own fines, and making little progress towards finding a solution to the pollution problem. Moreover, it is not socially desirable or politically favorable to fine an industry that supports the nutritional needs of the nation. It is thus no surprise that the agricultural industry has largely escaped the fines traditionally issued to their point-source counterparts.

Preventative measures can help reduce many of environmental externalities, but are still unable to tackle some of the more social problems. Best management practices (BMPs) are effective, practical, structural or nonstructural methods which prevent or reduce the movement of sediment, nutrients, pesticides and other pollutants from the land to surface or ground water, or which otherwise protect water quality from potential adverse effects of silvicultural activities.<sup>12</sup> What is more, these practices seek to balance water quality protection with the production of crops given the environmental and economic constraints. Examples of best management practices with respect to agriculture include no-till practices, organic farming, riparian buffers and crop rotation. There exists a noteworthy body of literature that addresses the various benefits of and barriers to bmp use. For these reasons, the Environmental Protection Agency (EPA) has

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<sup>11</sup> Farm Bill Expanding Subsidies. CNN. 4 Feb. 2008. <<http://www.cnn.com/2007/POLITICS/12/14/congress.farm.bill.ap/index.html?imw=Y&ieref=mpstoryemail>>.

<sup>12</sup> Watershed management Protection Program. Division of Forestry and Wildlife, U of Hawaii. 18 Oct. 2007. <<http://www.state.hi.us/dlnr/dofaw/wmp/bmps.htm>>.

strongly considered and implemented these tools for agriculture-based water pollution prevention. Ironically, when these texts are examined together they show that best management practices often have prohibitive costs for farmers.

Recognizing this financial and sociopolitical conflict, the federal government and its agencies have turned to various voluntary programs to provide incentives for promoting sustainable agricultural practices. For large and small local farmers alike who seek to make their practices more environmentally friendly, the Environmental Protection Agency (EPA) offers voluntary solution that will help them to avoid potentially costly penalties that would further deduct from their already narrow profit margins. Among the masses of bmp literature, the EPA highlights two key papers.<sup>13</sup> The first hails from the United States Department of Agriculture (USDA) and addresses “voluntary incentives for reducing agricultural non-point source water pollution.” The second is a product of Kansas State University’s Department of Agronomy and Department of Agricultural Economics, and looks at “water quality best management practices effectiveness, and cost for reducing contaminant losses from cropland.” Though each of these papers alone makes several convincing points regarding the success of BMP programs, together they illuminate the true dilemma facing the farming industry today. In light of even the greatest desires to improve environmental quality, local farmers are increasingly marginalized and unable to make the desired changes due to economic constraints. Jennifer Curtis, an environmental consultant in North Carolina, recently researched the absence of best management practices in certain areas and found that farmers recognize the need for environmental protection, and do

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<sup>13</sup> Schultz, Martin. “Best Management Practice Advising.” Correspondence to Kathryn Sayles. 5 March 2007.

actually want to use best management practices, but that they are unable to do so because of the associated costs.<sup>14</sup> These constraints are detailed as follows.

### AN INDUSTRY IN CONFLICT

Local farmers have become increasingly marginalized due to market forces and distorted public policies. A national non-government organization (NGO) known as “Foodroutes” aptly notes that the United States has lost 4.7 million farms since 1935. In addition, in 2002 while the remaining farmers earned their lowest real net cash income in since 1940, corporate agribusiness profits have nearly doubled since 1990.<sup>15</sup> The resulting stratification of the food system is continually reinforced by the U.S. Farm Bill, widespread farm programs and many traditional market forces detailed above.

The lack of sufficient funding to local farmers coupled with the self-perpetuating income stream drives the concentration and integration of the food system. Thus, it is now evident that income structure and market characteristics are self-perpetuating. One way to break down this detrimental trend is to fund innovative approaches such as local produce or organic farming. Many farm programs have been rightly initiated in an effort to provide local farmers with higher and more reliable income streams. Despite their good intentions, these programs ultimately force farmers to choose between sound environmental practices and a reliable revenue source. Furthermore, while some farmers have joined programs such as the conservation reserve program, and successfully worked to promote environmental sustainability, many farmers are denied access to such programs because they do not meet the strict guideline needed to obtain program funds. Indeed, farmers wishing to achieve good environmental outcomes on their farms

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<sup>14</sup> Curtis, Jennifer. “Inspiring Local Food Initiatives.” Correspondence to Kathryn Sayles November 2007.

<sup>15</sup> Foodroutes.org “Plant Your Dollars Close to Home and Watch Your Community Grow.” 4 Feb. 2008  
< <http://foodroutes.org/>>.

face the choice of staying in the program and continuing to grow crops as directed, retiring their land under a conservation program, or switching their rotations at the loss of program payments.<sup>16</sup> Moreover, farmers are often required to set up huge systems in order to obtain loans and get contracts with the integrator.<sup>17</sup> Charles Benbrook has examined the problems of the United States food system. In a deeply persuasive paper he asserts that policy is at the center of the agricultural industry's problems and that the results of current policies, however well-intentioned, only serve to marginalize local farmers even further.

*Collectively, policy reforms must change the factors governing the flow of agricultural and food system income streams. Income stream set the values and assets and wage structures. Income streams determine where capital flows, the terms and cost of capital, and drive the ability to carry out research and development. In general, the bigger the income stream, the more political capital and clout in play and at stake. Those that control and benefit from current income streams shape the food system in their own image, to meet their ongoing needs, and are able to do so by controlling research and development, policy development, and information flows to consumers and the general public.<sup>18</sup>*

Benbrook's research further supports the notion that even with a strong desire to move in a more environmentally friendly direction, farmers are bound by economic constraints that can only be overcome with political reform. Based on these facts it is no surprise that the treatment of agriculture as a major industry has resulted in the decline of natural resources. As previously noted, several prominent agencies have recognized the influence of non-point source pollutants on national waterways. Moreover, both scientists and policy makers alike have accepted the notion that American farming practices are harming not only aquatic environments, but also the dependant wildlife and industries.

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<sup>16</sup> Krinke, Mara. "Comparative Regional Economic Impacts of Agriculture." Land Stewardship Project. 16 Jan 2002: 9.

<sup>17</sup> Ibid., pp. 10.

<sup>18</sup> Benbrook, Charles. "What Will It Take to Change the American Food System?" W.K. Kellogg Foundation Food and Society Networking Conference. The Woodlands Center. 23 April 2003: 6,7.

The calls for political reform to resolve the internal conflicts of the agricultural industry are clear and numerous. A prominent economist from Iowa State University argues that the time for divisive action is now, and that in the absence of well-directed change that concentration and vertical integration of the food system will leave farmers as “powerless pawns in the production process.”<sup>19</sup> Though farmers recognize the immediate need for diversity in structure an approach, they are unable to reform and continue to meet their financial needs. In an effort to increase environmental and community stability, consumers have expressed great desire to purchase fresher, more environmentally friendly, local foods.

#### LOCAL FOOD TAKES THE STAGE

Based on the aforementioned facts it is no surprise that the practice of buying locally grown agricultural products is growing in popularity. In fact, The New York Times, The Boston Globe, Time, National Public Radio, Good Housekeeping, Successful Farming and Supermarket News have all featured stories on the importance of local products<sup>20</sup> Unfortunately, several production, political and economic barriers prevent smaller local farmers from having the market access that would allow them to successfully compete with their more industrial counterparts. In a report prepared for the W. K. Kellogg Foundation, the barriers to sustainable farmers’ success in the marketplace are described as “very substantial.”<sup>21</sup> Overcoming the present barriers will require educational efforts, political reform and a fundamental shift in the current market paradigm.

Local product belongs to a group of environmentally identified products (EIPs). This term refers to food products that are described as organic or sustainable, were grown using

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<sup>19</sup> Caspers-Simmet, Jena. “Harl Doesn’t Like Trends in Agriculture,” Agricultural News. 24 December 2001.

<sup>20</sup> Berkenkamp, JoAnne and Pam Mavrolas. “Delivering the Goods: Market-Based Change in Phase II of the Integrated Farming Systems Initiative.” W.K. Kellogg Foundation. April 2002: 21.

<sup>21</sup> *Ibid.*, pp. 8.

Integrated Pest Management (IPM), or are regarded as having a relatively less negative impact on the environment than directly competing products such as the more industrialized farming initiatives.<sup>22</sup> These products also often have the unique opportunity to provide local areas with greater nutrition, food security, ecological health, economic development and community building.<sup>23</sup> Due to these fundamental differences between local product and the alternative product options, several different marketing and economical differences are available to set EIPs apart from less environmentally-friendly options.

There are countless benefits of supporting a local agricultural initiative in place of the mechanized food system. These advantages include a higher level of nutrition in the food product, a more stable local community, increased environmental health and a significant reduction in agricultural externalities. Tegtmeier asserts that “a local food system may be an alternative to the increasingly globalized and concentrated food market and a means to augment the availability of fresh foods, create economically viable options for farmers and enhance the health of local ecosystems.”<sup>24</sup> In a similar report prepared for the state of Iowa, researchers determined conclusively that “there is the potential for substantial economic development to occur through the import substitution” and that “these gains are realized at the producer level.”<sup>25</sup> Moreover, because most local farmers solicit the aid of the local marketing sector, additional returns still remain within the immediate community and can be used to bolster the local economy. Therefore, money that remains in the state has a simulative or multiplier effect on the

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<sup>22</sup> Burness, David and Brian Harris. Demands for Local and Organic Produce: A Brief Review of the Literature. Institute for Public Policy and Business Research. U. of Kansas. Lawrence, KN, April 2000: 1.

<sup>23</sup> Tegtmeier, Erin. “Factors Affecting Symbolic and Use Adoption of Local Foods for Consumers in Black Hawk County, Iowa.” Iowa State University, (2003): 3.

<sup>24</sup> *Ibid.*, pp. v.

<sup>25</sup> Pirog, Richard and Dave Swenson. “The Economic Impacts of Increased Fruit and Vegetable Production and Consumption in Iowa: Phase II.” Regional Food Systems Working Group, Leopold center for Sustainable Agriculture. May (2006): 2.

whole economy.<sup>26</sup> Each of the scenarios analyzed for the state of Iowa showed returns to the local economy in the order of hundreds of millions of dollars. This type of economic returns can be used to fund the desired environmental initiatives such as the installation, operation and maintenance of best management practices, or fund marketing campaigns to further promote local food sales.

Several local food campaigns have achieved marked success by targeting consumers and publicizing the benefits of their products. Foodroutes.org has issued the “Buy fresh. Buy local” initiatives while several states have pursued the “Be a local hero. Buy locally grown” with great returns. In 2000 The Food Alliance (TFA) conducted a survey that showed over 50 percent of farmers that participated in TFA labeling certification (given to those growers that meet TFA soil and water conservation standards along with worker welfare guidelines) have either increased sales or widened their scope of vendors.<sup>27</sup> While the percentage increases vary depending on location, duration of the campaign and consumer demographic, all areas that used a local food campaign and had local products available for sale showed an increase in local product sales.

Based on the research available to date, it is evident that consumers have a generally favorable attitude towards local products, and that availability is often the most prominent barrier to consumption. The typical local product consumer is a single, white, young, female professional.<sup>28</sup> Survey evidence further indicates that the demand for local products is more closely associated with availability and knowledge of the benefits of local products than with

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<sup>26</sup> Pirog, Richard and Dave Swenson. “The Economic Impacts of Increased Fruit and Vegetable Production and Consumption in Iowa: Phase II.” Regional Food Systems Working Group, Leopold center for Sustainable Agriculture. May (2006): 3.

<sup>27</sup> Berkenkamp, JoAnne and Pam Mavrolas. “Delivering the Goods: Market-Based Change in Phase II of the Integrated Farming Systems Initiative.” W.K. Kellogg Foundation. April 2002: 18.

<sup>28</sup> Jolly, Desmond and Kim Norris. “Marketing Prospects for Organics and Pesticide-Free Produce.” American Journal of Alternative Agriculture 6.4 (1991).



income or other traditional economic or demand-theory variables.<sup>29</sup> As noted in the previous “identifying assumptions” portion of this document, the stated and revealed preferences of consumers are assumed to be consistent. Given that there is no readily available data regarding any significant discrepancies between these two behaviors, this assumption is reasonable.

Transitioning local foods into the marketplace is perhaps the most important, but difficult obstacle to overcome in making local products a truly viable option. Harris et al. note that product buyers and product managers tend to view local and/or organic products more negatively than consumers, and thus may be responsible for the diminished availability since these are the people responsible for bringing local/organic products to the retail marketplace.<sup>30</sup> Still, producers, distributors and consumers alike find themselves caught in much of a chicken and egg dilemma. Following a noteworthy literature review, Harris concludes that “perhaps the biggest hindrance to increasing market share for local produce is lack of availability. Local goods are simply not widely available in stores.”<sup>31</sup> Thus, even with demand there is no widely available supply. This fact is also the result of the marginalization of the consumer. In the absence of food choice in the marketplace, consumers are unable to demonstrate their preferences for local products over less environmentally friendly products. This market flaw again serves to uphold the status quo.

Taking all factors into consideration—the detrimental economic and environmental impacts of agriculture, the current sociopolitical structure of the food system, the market forces driving current practices over local products and the attitudinal barriers to local product success—there are several immediate changes that can facilitate change. In addition, a few long

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<sup>29</sup> Burness, David and Brian Harris. Demands for Local and Organic Produce: A Brief Review of the Literature. Institute for Public Policy and Business Research. U. of Kansas. Lawrence, KN, April 2000: 6.

<sup>30</sup> Ibid., pp. 25.

<sup>31</sup> Ibid., pp. 24.

term strategies can improve the success of local products and ultimately return more money to local communities for societal and environmental improvements. These changes include a shift in funding from corporate farmers to local farmers, business incentives for companies that buy local products, a standardized green label system for easy reference by consumers and marketing program to promote local foods to consumers. Each of these solutions is further detailed in the text that follows.

### CHANGING THE U.S. FOOD SYSTEM

In summary, increasing availability in multiple vendors must occur for local foods to be truly profitable. In order to increase both availability as well as sales, the public must support local food initiatives and public policy must be adjusted to no longer favor industrial farmers over local farmers. Due to the time (in terms of politician availability) and monetary constraints, a memorandum to North Carolina state elected officials has been prepared to help facilitate the transition of these vital changes into effectual public policy (Appendix). Correcting the market barriers to local foods will require a shift in public attitudes and the implementation of effectual public policy. Some experts argue that changing the American food system will require changes in “public attitudes, passions and policy of a magnitude not seen since the country pulled itself out of the Great Depression.”<sup>32</sup> Indeed making the shift from largely industrialized agricultural practices to a system in which consumers play a part in the decisions made about their food is no short-term or simple fix. As previously detailed, the barriers such as shift are diverse and abundant.

*Among the identified problems are widespread consolidation among processors, food manufacturers, handlers, distributors and retailers that reduces the market access and negotiating power for many smaller producers; policy and regulatory*

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<sup>32</sup> Benbrook, Charles. “What Will It Take to Change the American Food System?” W.K. Kellogg Foundation Food and Society Networking Conference. The Woodlands Center. 23 April 2003: 1.

*barriers to the production, processing and marketing of sustainable foods coupled with insufficient resources to identify and manage regulatory hurdles; lack of funding to gain the skills necessary for organizations rooted in farming systems and community activism to develop business plans and market analysis skills.*<sup>33</sup>

Nonetheless, there are a few key components to a viable solution. Like the problems local agriculture faces, the solution to developing a locally-based, and thus sustainable, food system must be multidisciplinary and take an adaptive management stance. This type of approach is necessary simply because the problem itself includes undeniably dynamic social, political, economic and ecologic components. Therefore, any reasonable solution must seek to remedy the problems in each of these areas.

In keeping with the American mentality of public participation, decisions regarding food supply, availability, sources, accessibility and nutrition should come from the community as well as elected officials. One prominent author strongly asserts that in order for local food systems to thrive they must confront issues of production, distribution, access, use, recycling and waste stream through the contribution of a diverse team of community members, planners, administrators, products and distributors.<sup>34</sup> It is therefore vital that the changes to the food system must include at least a shift in funding to sustain small farmers, incentives for businesses to support local farming initiatives, a standardized food label system, and an educational marketing campaign. These components are detailed as follows.

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<sup>33</sup> Berkenkamp, JoAnne and Pam Mavrolas. "Delivering the Goods: Market-Based Change in Phase II of the Integrated Farming Systems Initiative." W.K. Kellogg Foundation. April 2002: 8.

<sup>34</sup> Tegtmeier, Erin. "Factors Affecting Symbolic and Use Adoption of Local Foods for Consumers in Black Hawk County, Iowa." Iowa State University, (2003): 4.

### Funding Shift

As previously stated, the current income stream only serves to perpetuate the rise of large industrial agricultural companies and minimize smaller local farming efforts. Though any shift in subsidies or other funding programs will likely be met with resistance from a powerful, corporate few, it is vital for policy makers to note that “billions in medical expenditures, lost wages, and environmental harm will be saved.”<sup>35</sup> What is more, the societal burden of the estimated 5.7 to 16.9 billion dollars in annual costs calls for a restructuring of agricultural policy that shifts production towards methods such as local farming that lessen external impacts.<sup>36</sup> Financial support should thus be moved, in part, from companies shipping their products more than 100 miles from the source to farmers that sell goods in the local community. Due to the current market structure, non-local farmers (i.e. the Kellogg industry) will be able to continue to net gains from their practices even in the face of reduced government support. This return to local agriculture is necessary because it will capture the true cost of food, reduce externalities and serve as a more proactive solution to minimizing community and environmental degradation.

### Business Incentives

Somewhat analogous to the funding shift, monetary incentives should be provided to business that purchase local product(s). This incentive may come simply from the consumer. Business managers and food producers tend to view local/organic foods less favorably than traditional products for a slough of reasons previous detailed. Nonetheless, profitability remains the primary driver of production decisions. According to Harris, consumers have stated that, like organic foods, they are willing to pay a higher premium for food that they perceive to be more

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<sup>35</sup> Benbrook, Charles. “What Will It Take to Change the American Food System?” W.K. Kellogg Foundation Food and Society Networking Conference. The Woodlands Center. 23 April 2003: 6.

<sup>36</sup> Tegtmeier, Erin and Michael Duffy. “External Costs of Agricultural Production in the United States.” International Journal of Agricultural Sustainability 2.1 (2004): 1.

environmentally friendly, fresher and more nutritious. Shoppers may be willing to pay upwards of 10% more for local products than for non-locally grown crops.<sup>37</sup> While local products may be able to be sold at a marginally higher price than non-local products providing businesses with added monetary incentives to buy local will help to further encourage the adoption of a sustainable local food market. Thus, funding can come from the current Farm Bill or revenues generated from point or non-point source pollution fines. It is important to note that deciding on the exact origin(s) of funds involves numerous trade-offs that must be carefully considered. Evaluating this vast array of funding sources is beyond the scope of this paper and should be done by a team of prudent elected officials.

### Green Label System

As previously stated, lack of education and/or knowledge about the benefits or availability of local products is the second greatest deterrent to local product success. Often there is no consistent and discernable way to distinguish between local and non-local products. As of 2000, the USDA was still in the process of reviewing a uniform labeling standard. Since then the government, as well as the market, has more clearly recognized consumers' demand for information regarding edible products. A clear and marketable label system that is consistent across the country should be supported. Moreover, a simple binary label should be used for local foods. Much confusion and debate has arisen around the various organic labels. To prevent a similar problem a sufficient local product label could read: "locally grown." Products not grown within 100 miles of origin should not be allowed to possess this label under any circumstances. While this recommendation seems rather elementary, it would serve to break down the knowledge barrier that prevents consumers from purchasing local products.

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<sup>37</sup> Burness, David and Brian Harris. Demands for Local and Organic Produce: A Brief Review of the Literature. Institute for Public Policy and Business Research. U. of Kansas. Lawrence, KN, April 2000: x.

### Marketing Program

An educational campaign that breaks down the “lack of knowledge” barrier about the benefits of supporting local foods must be targeted toward consumers as well as suppliers and managers. Funding can come from the Farm Bill subsidies, but primarily from the aforementioned funding shift. In keeping with some of the notable plans of the “Be a local hero. Buy locally grown.” campaign, marketing should be administered through newspaper, radio, bus boards, tradeshow booths, radio, television, events, newspaper and direct mail. Messages should contain information about at least the harms of industrialized agriculture to both local community stability, environmental health, human wellbeing and the green label system. In order to obtain increased effectiveness, the campaign should also use a variety of media and repetitive messages that reach the local community regularly. As with all social marketing programs, a thorough cost-benefit analysis regarding which media should be implemented and in what relative frequency will help maximize the impact of each dollar. A successful marketing campaign should also include clear goals with a detailed plan for how and when to evaluate the goals.

### CONCLUDING REMARKS & PROJECT IMPACT

There are several different approaches to conveying complex environmental and agricultural messages to the necessary audience. In a report prepared for the Leopold Center for Sustainable Agriculture, Wilson showed that one-on-one interviews with policymakers yielded the best understanding of the issues at hand, and the richest feedback.<sup>38</sup> The author also wisely notes that although personal interviews produced the most detailed results the need for strong personal relationships with policymakers combined with monetary and time inputs makes this

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<sup>38</sup> Wilson, Leah. “Local Food, Local Policy: A Case Study on Engaging Policy Makers in the Development of Their Foodshed.” The Leopold Center for Sustainable Agriculture. October (2007): 10.

approach costly and not ideal for most goals.<sup>39</sup> Moreover, understanding the variations among farming types can guide policy makers towards making responsible decisions that fulfill environmental and societal goals. Thus, due to the time (in terms of politician availability) and monetary constraints, a memorandum to North Carolina state elected officials has been prepared to help facilitate the transition of these vital changes into effectual public policy (Appendix).

Given the clear ties between human well-being (both physically and economically) and environmental health, it is clear that agriculture-based pollution abatement is worthy of both scientific and government attention. Despite the essential need for political changes there is no quick or simple solution to the problems facing local farmers. A truly sustainable solution must be economically feasible, socially desirable and ecologically viable. This project will work to facilitate political change by illuminating the benefits of supporting local products. Moreover, the memorandum prepared for state elected officials is a necessary first step in promoting community stability and protecting fleeting environmental resources. This capstone piece provides vital parties with the information needed to develop lasting changes to the agricultural system.

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<sup>39</sup> Ibid., pp. 11.

## APPENDIX



## **MEMORANDUM**

**TO:** North Carolina Elected Officials  
**FROM:** Kathryn Sayles, Master of Environmental Economics & Policy, Duke University  
**DATE:** 25 April 2008  
**SUBJECT:** Supporting Local Agriculture, Community Stability & Environmental Health

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### **Introduction and Summary Recommendations**

This memorandum address whether and how North Carolina representatives should enact comprehensive measures to promote local agriculture. I recommend that the State develop and adaptive management plan that (1) provides monetary support to local farmers, (2) offers businesses incentives to support local agricultural initiatives, (3) adopts a standardized local food labeling system, and (4) establishes a marketing program educating consumers about the benefits of local produce by 2015. Moreover the State should set more long term goals to (1) make local farming practices sustainable, (2) reduce local water pollution caused by agricultural runoff, and (3) support the health and stability of local communities.

### **Justification and Analysis**

Earth's natural resources are undeniably finite. As such, it is increasingly important to recognize how humans manage these fleeting supplies as they seek to balance exponential population growth with sustainable human and environmental health. A truly enduring solution must be socially desirable, economically feasible and ecologically viable. For agricultural matters, food scarcity and extreme environmental variability makes obtaining these three essential components even more challenging.

As the human population continues to experience exponential growth, it becomes increasingly important how we balance human and environmental health. Academics and professionals alike recognize the extreme hardships of transforming American agricultural policies. Nonetheless, these recommendations are comparatively simple measures that can be taken to spur local farming initiatives. Overcoming the present barriers will require educational efforts, political reform and a fundamental shift in the current market paradigm. Each of these components can be driven by well-designed, clear and appropriate legislation.

### **Summary of Facts**

A considerable number of materials have been prepared ranging from "how to" booklets for local farmers to highly quantitative economic analyses of the United States food system. Despite this great abundance of resources, few people have taken on the daunting challenge of integrating these materials into effectual public policy. Non-point source pollution from agricultural run-off has been identified as a major threat to both human and environmental well-being. What is more, current water and farm policies have been unsuccessful at minimizing these damages.

In 2004 the US Commission on Ocean Policy and the Pew Ocean Commission declared that America's waterways are in a state of crisis due, in large part, to contaminated sediments and nutrient pollution. In fact, agricultural sources still account for as much as 73 percent of the water degradation in a given area, nearly three times the pollution caused by municipal treatment plants, industrial activities, urban storm run-off and construction combined and continue to be

largely unregulated. Among the many problems that can arise are loss of oxygenated water available to aquatic biota, the filling of lakes and an incredible increase in disease.

The price that consumers pay for food at the store doesn't illuminate the true cost of agriculture due to multiple externalities. Scientists estimate that there is between \$5.7 and \$16.9 billion dollars each year in damages to human and environmental health. Damages to water alone cause approximately \$419.4 million annually. Unfortunately, the structure of the Farm Bill serves primarily to uphold the status quo and although there were \$286 billion dollars worth of changes proposed in 2007, little money was allocated to pollution prevention measures.

In addition to economic and environmental concerns there are similarly severe social problems. The general public has little say in where their food comes from because they have little choice in source variety. There is also an increasing concentration of producers and processors that provide access to the markets. Thus, a powerful few corporations can dictate the actions of many small farmers. This integration is partially responsible for the loss of 4.7 million small farms since 1935. In 2002 small farmers also have the lowest incomes since 1940 while corporate agriculture sizes have doubled since 1990. Moreover, the income structure supporting the farming industry further serves to favor large industrial operations over smaller operations thus making the big companies bigger and further marginalizing small, local farmers.

For large and small farmers alike who seek to make their practices more environmentally friendly, the EPA offers voluntary solutions that will help them to avoid potentially costly penalties that would further deduct from their already narrow profit margins. Despite the potential usefulness of these programs, research shows that adopting environmentally friendly agricultural practices is very cost prohibitive.

Best management practices are the primary method of environmental and human health protection. This set of practices are defined as effective, practical, structural or nonstructural methods which prevent or reduce the movement of sediment, nutrients, pesticides and other pollutants from the land to surface or ground water, or which otherwise protect water quality from potential adverse effects of silvicultural activities. Moreover, they include considerations for economic and environmental constraints. Jennifer Curtis, a local environmental consultant recently researched the absence of best management practice in local areas and found that farmers recognize the need for environmental protection and want to use best management practices, but are unable to do so because of costs

The income structure and market characteristics are self perpetuating. One way to break down this detrimental trend is to fund innovative approaches such as local produce or organic farming. However, the Farm Bill only allocates 7% of its funds to research and innovation. Some progressive farmers have joined programs such as the conservation reserve program that works to promote environmental sustainability. Though some farmers have success in these programs, many are denied because they do not meet the strict guidelines needed to obtain program funds. What is more, farmers are often subject to certain production patterns to obtain loans or contracts with processors thus preventing them from making the desired conservation efforts.

Local foods are growing in popularity as a potential solution to a variety of market, social and political problems. Publications such as the *The New York Times*, *The Boston Globe*, *Time*, *National Public Radio*, *Good Housekeeping*, *Successful Farming* and *Supermarket News* have all featured stories on the importance of local products. Despite their increasing success the W.K. Kellogg Foundation says that local foods face very substantial barriers to becoming a truly viable solution to environmental problems. They claim that the success of local foods will require a shift in public policy, perceptions and passions not seen since the Great Depression. In light of these hardships, many private research institutions assert that local foods are the best chance to increase the health of people and nature alike, stabilize communities and promote sustainable local economies.

A prominent study from Iowa reports that it can return hundreds of millions of dollars to the state just by buying local produce. In addition to these marked benefits, the increased profits from local agriculture now make best management practices a viable option because farmers are no longer inhibited by economic forces. Many researchers and professionals note that consumer education through marketing is key to promoting local produce. Even with education, availability in the marketplace is still the primary barrier to consumption.

Several local food campaigns have been quite successful in increasing availability and promoting consumer education. The Food Alliance has an environmentally friendly labeling program. All of the participants in this program have reported an increase in sales as well as diversity of vendors. Again it is important to note that increased revenues for farmers is dependant on consumers purchasing local foods over other foods if availability increases. While much research has been conducted regarding consumers' stated preferences, the lack of availability has prevented extensive revealed preference studies.

In summary, increasing availability in multiple vendors must occur for local foods to be truly profitable. In order to increase both availability as well as sales, the public must support local food initiatives and public policy must be adjusted to no longer favor industrial farmers over local farmers. Finally, a detailed solution must be socially desirable, economically feasible and ecologically viable. What is necessary in all solutions is the presence of clear goals and a monitoring plan that promotes adaptive management.

<b>How Far Does Your Food Travel?*</b>		
Grapes:	2,143 miles	1 State
Broccoli:	2,095 miles	3 States
Asparagus:	1,671 miles	37% Mexican
Apples:	1,555 miles	8 States
Sweet Corn:	813 miles	16 States
Squash:	781 miles	43% Mexican
Pumpkins:	233 miles	5 States

\* Data taken from the Leopold Center for Sustainable Agriculture.