

Loving Our Land

An Analysis of Support Systems for Sustainable Agriculture in Rhode Island



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Executive Summary

Ensuring adequate support for farmers using sustainable farming methods is critical considering the extensive ecological, economic, and social impacts agricultural operations have worldwide. Understanding to what extent sustainability is incorporated into farms in Rhode Island is just as critical so that local government and support groups can provide services to increase sustainable agricultural practices. To assess Rhode Island's support for sustainable agriculture and to what extent farmers use available programs, I ask the following question: *To what extent do farmers in Rhode Island utilize farm subsidies, tax programs, and other grant programs to enhance the sustainability of their operation and what are their motives for utilizing these services.*

In answering this question, I start by outlining the history of USDA federal subsidy programs, the growth of the "local food movement", the available state grant programs and local advocacy groups. I also identify a preliminary definition for "sustainable agriculture" based on an initial literature review which is challenged and revised throughout my methodology and recommendations sections. I note that there is increasing consumer support for locally grown food and a heightened interest in sustainable agriculture in Rhode Island, yet the support systems for this type of agriculture are not sufficient.

I identify the most useful programs available by using the subsidy database, an online survey distributed to Rhode Island farmers, and personal interviews with farmers and representatives from state and community programs. From this research I recognize several obstacles that farmers face in increasing the sustainability of their operation. These are centered on land acquisition and preservation issues, lack of support in the grant writing process, lack of technical training in how to incorporate low-pesticide growing into local farming operations, and the short time window for training and educational programs. To address these issues, farmers stated that there needs to be more cohesiveness and communication between government programs, a more intuitive grant application process, assistance for value-added product development and production, and grant programs that focus on research projects. Representatives from agricultural initiatives added that there is a need to connect new farmers with old farm land owners, expand training opportunities, and expand Cooperative Extension programs.

Based on these obstacles and stated needs, I recommend that the DEM, Cooperative Extension, and Farm Fresh RI collaborate on a variety of projects. These include applying for grants to support organic research, creating a grant database and grant writing workshops, advocating for permanent funding for the cooperative extension agent, and creating a land preservation program. These projects address the current obstacles farmers identified in trying to increase sustainability on their operations', and help streamline efforts taken by these groups to increase awareness and support for sustainable farming methods.

The creation of an online land preservation program and a grant assistance page are two recommendations currently being executed.

Acknowledgements

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Loving Our Land

To what extent do farmers in Rhode Island depend on subsidies, state grant programs, and community programs to enhance the sustainability of their farming operation? How can Rhode Island state programs and NGO's better serve sustainable farming operations in the future?

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The most insistent and formidable concern of agriculture, wherever it is taken seriously, is the distinct individuality of every farm, every field on every farm, every farm family, and every creature on every farm.

-Wendell Berry

Introduction

This study examines to what extent farmers in Rhode Island depend on agricultural subsidies and how federal and state programs and NGO's concerned with local food issues, food security, and environmental issues can better promote environmentally sustainable farming in the future. To address these topics I utilized records from the Farm Subsidy Database, the 2002 USDA agricultural census, the Rhode Island Department of Environmental Management, and information provided through interviews and questionnaires administered to farmers. In doing this study I hope not only evaluate farmers' dependence on external financial support for long term sustainability, but also to identify the opportunities available to farmers in Rhode Island that make sustainable agriculture financially viable within the state.

Statement of Problem:

According to the Environmental Working Groups agricultural subsidy database, nearly one third of all farms in the United States receives some form of government subsidies¹. Of those farms 7% are large-scale conventional operations with more than 1,000 acres and farm enterprises with revenues over \$250,000 per year². Yet that 7% receives more than 54% of federal subsidies. This creates an extremely skewed distribution of farm subsidies, leaving many small-scale farmers that operate on less than fifty acres and that often support a diversified crop base to receive less than \$5,000 per

¹ Environmental Working Group (2007). Table of Farms Getting Government Payments According to the 2002 USDA Agricultural Census.

² According to the 2003-2005 summaries of top beneficiaries of subsidy payments

year from the USDA farm subsidy programs³. Even less likely to receive subsidy assistance are organic and low-pesticide operations, which receive less than 1% of federal subsidies each year⁴. This is because many of these farms do not qualify for traditional subsidy programs or would only want to utilize a subsidy program for research- or community-based projects⁵. However, the 2007 Farm Bill proposes increased funding for organic agricultural research and increased funding for conservation programs. This will make subsidies more attainable for smaller scale, non-commodity focused farms such as sustainable farming operations⁶. “Sustainable farms”, for the purpose of this research include some certified organic, transitional, and community-supported agriculture farms, currently receive less than five percent of federal subsidies⁷ and could potentially benefit from the changes proposed by the 2007 farm bill. Therefore, it is important to understand the current utilization of farm subsidies among sustainable farmers, and how they might utilize farm subsidies in the future.

Although the current opportunities for financial support from national agricultural subsidies is limited for farms within Rhode Island, the expansion of market opportunities for local farmers over the past five years coupled with a high demand for local products has created a unique opportunity for sustainable agricultural operations within the state. For example, currently there are over 30 farmer’s markets held at various times throughout the year in Rhode Island⁸. Several of these markets are strategically placed to supply both rural and urban communities as well as to accommodate farmer availability

³ According to the Farm Subsidy Database National Summary Data

⁴ Environmental Working Group. Farm Subsidy Database. Figures for 2005.

⁵ Looter, Dan (2007). Organic Farmers Weigh in on 2007 Farm Bill. *Agriculture Online*. 2:2007.

⁶ Ness, Carol (9 Jul, 2007). The New Food Crusade. *Environmental Working Group Online Article Database*. 1-3.

⁷ Environmental Working Group. Farm Subsidy Database, Figures for 2005.

⁸ Farm Fresh RI.org Farmers Market Database 3.20.2008

and transportation logistics⁹. The number of markets and the demand for local products has drastically increased over the past three years with the support and management of programs such as Farm Fresh RI, the Southside Community Land Trust, and the Rhode Island Center for Agricultural Promotion and Education. These programs, which work to support and sustain food systems that are sustainable, local and community focused, are working to provide ample market opportunities for local farmers to ensure long-term financial security while also ensuring farming practices that nurture the surrounding environment. It is clear that farmer and community participation in these local organizations is high; however, to what extent these programs have provided financial security to farmers in Rhode Island is largely unknown.

Furthermore, the Rhode Island Department of Environmental Management (RIDEM) provides a tax reduction program and grant programs that help maintain a diversity of farm operations within the state. These programs also offer ample information and incentive for farmers to adopt economically, environmentally, and socially sustainable farming operations. Tax reduction programs such as the Farm, Forest and Open Space Act along with the Farm Viability Grants have the potential to aid farmers utilizing low-impact farming methods. The University of Rhode Island's Cooperative Extension also provides substantial support through their sustainable agriculture program, which links farmers with technical services like soil testing and on-site consultations.¹⁰ In addition, the NRCS and Farm Service Agency also manage several agricultural programs funded by the USDA subsidy fund that are conservation-based and widely-used among farmers in Rhode Island.

⁹ Farm Fresh RI.org Farmers Market Database 3.20.2008

¹⁰ URI Cooperative Extension Sustainable Agriculture Program. *Keeping Rhode Island Agriculture Sustainable*. <http://cels.uri.edu/sustainableag/>

These programs, in conjunction with support from the non-profit organizations mentioned above, allow for an extensive network to support farmers throughout Rhode Island. Yet as mentioned earlier, the exact benefits of these programs and their utilization have not been fully considered within the context of other programs that aid farmers throughout the state. Focusing on the current subsidy distribution along with agricultural programs unique to Rhode Island lends to a greater understanding of which programs are most useful to farmers looking to establish, or currently using, sustainable methods.

Thesis Question:

My research question is framed in three parts. First, to what extent do farmers in Rhode Island utilize agricultural subsidies, tax reduction programs, and other grant programs? Second, what are farmers' motives for using or not utilizing subsidies? Lastly, how does the Rhode Island "sustainable" farming model fit into the context of Rhode Island farming generally?

In regards to these questions I have made the following hypotheses:

- Rhode Island farmers generally do not receive significant payments from farm subsidy programs
- Conventional farm subsidies are not a sustainable solution for long-term farm profitability and security within Rhode Island.
- Voluntary conservation-focused farm subsidies have the potential to create a more sustainable domestic agricultural economy than commodity-based subsidies.
- Sustainable farmers utilize alternative grant programs, tax subsidies, and training resources more often than farm subsidies.

- Success of small-scale farming operations has greater potential in Rhode Island than other areas due to the market for specialty products in the Northeast and its growing culture of support for local/small-scale farming operations compared to states with commodity-based agriculture.

USDA Subsidy Program: A Brief Background

President F. D. Roosevelt, Congress, and the USDA established price supports and farm subsidies in 1933 as part of the New Deal's efforts to address food security, Dust Bowl-related problems and the economic hardship farmers experienced during the Great Depression.¹¹ From 1933 to 1938 dozens of programs, including the farm subsidy program, were established to control the market and to protect American agriculture from imports and foreign markets in hopes of keeping millions of Americans financially afloat during the Dust Bowl and Great Depression¹². Although originally intended to be a temporary program, farm subsidies have become an integral part of American agriculture and are the primary focus of farming legislation. Today, the U.S. Department of Agriculture is required by law to subsidize over two dozen commodity crops with an average of 13 billion dollars per year paid to US farmers under various subsidy programs¹³.

The three primary subsidy categories under the U.S. Farm Bill: commodity, conservation, and disaster programs provide financial incentives for farmers to engage in variety of different agricultural practices. The most well funded programs are generally

¹¹Gardner, Bruce (2002). *American Agriculture in the Twentieth Century: How it Flourished and What it Cost*. Harvard University Press, Cambridge, MA.

¹² Gardner, Bruce (2002). *American Agriculture in the Twentieth Century: How it Flourished and What it Cost*. Harvard University Press, Cambridge, MA.

¹³ Folsom, Burton Jr. (2006). *The Origin of American Farm Subsidies. Our Economic Past*, 1-2.

commodity programs, which provide a “price floor” to guarantee farm income, stabilize food prices and provide extra money to stimulate a competitive domestic and international market for crops such as corn, cotton, wheat, rice, and soybeans¹⁴.

Conservation programs, like the Conservation Reserve Program, Wildlife Habitat Incentives Program and the Herd Reduction Program pay farmers not to cultivate their land or reduce herd size, which can result in higher prices for crops and livestock due to scarcity. These programs have also allowed for the remediation and preservation of millions of acres of land throughout the US¹⁵. The last type of subsidy is the disaster subsidy, which provides compensation for farmers in areas hit by significant crop failures due to uncontrollable environmental disasters such as droughts and flooding. These tend to be occasional subsidies, meaning there are high fluctuations in the amount of money distributed for disaster payments each year in comparison to other types of subsidies.

The beneficiaries of federal subsidies have changed significantly since 1933 from largely family-run operations to corporate farming operations. Nearly 80% of sales in the commercial agricultural market are from large, corporate operations. With less than 2% of the American population residing on farms, very few subsidy dollars ever enter the pocket of the small family farmer¹⁶. That 2% makes up a significant population in the farming community, yet they receive less than 20% of funds available through the farm subsidy program. No doubt the partiality of corporate operations in subsidy distribution has made sustaining small farms difficult throughout the United States and conditions for industrialized, corporate mode of farming more favorable.

¹⁴ Farm Commodity Programs: A Short Primer, a Congressional Research Service Report for Congress, June 20, 2002.

¹⁵ Faeth, Paul (1995). Growing Green: Enhancing the Economic and Environmental Performance of U.S. Agriculture. World Resources Institute

¹⁶ Farm Subsidy Database. National Statistics

National Local Food Movement: An Oxymoron?

Although not the primary focus of many USDA federal subsidy programs, there is an inherent value in investing in small farms. In Rhode Island, small farms serve as stewards of nearly 60,000 acres of open space, which is 9% of the total land area within the state¹⁷. There is also a growing economic incentive to maintain small-scale, sustainable operations: everyone needs to buy their food. Looking more generally at national consumer trends, U.S. organic food sales have grown between 17 and 21 percent each year since 1997, while total U.S. food sales over this time period have grown in the range of only 2 to 4 percent a year¹⁸. Although “purchasing organic” does not necessarily mean “purchasing local”, it indicates that people are becoming more concerned with how their food is produced. Adorning the labels of many of these organic products is the story of a family, or a group of farmers, and their quest to save the family farm¹⁹. There is likely a connection: people eat organic for their health, but they also want to support an environmentally-sustainable farming model. It is important here to clarify that organic farming methods are not always synonymous with environmentally sustainable methods. Still, they market themselves as such and consumers, who want to support the wholistic farm image that organic products use for marketing, often buy the products in hopes of sustaining family farms, the environment, and their health. Looking at farmer’s market trends, the support for local farms becomes clearer: from 1994 to 2006 the number of farmers’ markets in the US went from 1,755 to 4,385 (see Figure 1).

¹⁷ Rhode Island Center for Agricultural Promotion and Education (RICAPE) (2008).

¹⁸ USDA, 2007 Summary Report: Organic Trends

¹⁹ Horizon Organics, SILK soy products, Earthbound Farm, Earth’s Best, Eden Foods, Organic Valley, Stonyfield Farm, Morningstar Farms, Rhody Fresh Milk

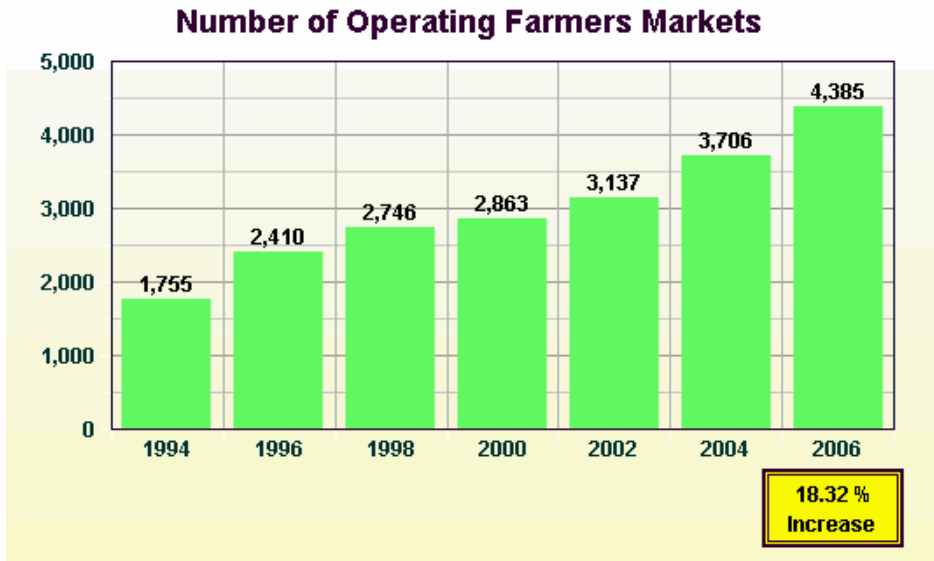


Figure 1: Trend in Number of Farmers Markets in the US from 1994-2006, USDA 2007.

This upward trend provides further evidence that there is a local food movement. Through these markets the public has the opportunity to learn about where their food comes from and who is growing that food. As stated previously, within Rhode Island there are over 30 farmers' markets which serve urban and rural communities throughout the year, up from only five markets ten years ago, an increase of 500%²⁰. Furthermore, there is increasing interest amongst local universities such as Johnson and Wales, Brown University, University of Rhode Island, and Rhode Island School of Design in increasing the percentage of locally produced food in their cafeterias²¹. Clearly, Rhode Island is participating in and helping to lead this local food movement, which is gaining momentum on a local and national scale.

Behind the food, the farmers' markets and the organic labeling, there is often a core of hard-working farmers with strong roots who are dedicated to sustainable farming practices. In Rhode Island, there are 21 certified organic and transitional operations, up

²⁰ Farm Fresh RI, DEM

²¹ After attending the Real Food Conference at Yale in 11/2007 several Rhode Island Universities formed a group called RI Real Food to lobby for more locally produced food on their campuses. This group includes students, professors, and chefs employed at various universities. Meeting attendance 11/4/07.

from one organic farm ten years ago²², with many other operations using no-pesticides or very few pesticides. To maintain their farms, and to expand their operations, these farmers need resources, just as conventional operations do, to assist them with the changing demands and needs of their operation.

Aid Available to Rhode Island Farmers: State Grant Programs

Today, Rhode Island is home to several programs to support and enhance the local agricultural community. The most widely utilized is the Farm, Forest and Open Space (FFOS) tax reduction program, which allows land to be assessed at its current use, not its potential value as developed land²³. The purpose of FFOS is to conserve agricultural and forested lands by decreasing the land's assessed value which can lead to a reduction in property taxes, which in the case of farmers makes their operation more viable and profitable. Currently 747 properties in Rhode Island have been approved through DEM for the FFOS tax reduction program, of which approximately 40% are agricultural lands²⁴.

The Rhode Island Department of Environmental Management offers other grants and loans to farmers to increase the practicability of farming. The Farm Viability grant is awarded annually to a small number of farms and agricultural programs each year when funds from the USDA's Specialty Crop Block Grant Program are distributed to the Rhode Island DEM. The grant is to be used to enhance agricultural programs and education with Rhode Island.

²² DEM Organic and Transitional Farm Database. USDA census information.

²³ Rhode Island Department of Environmental Management. FFOS fact sheet.

²⁴ Stephen Volpe, Rhode Island Department of Environmental Management, FFOS approved property list.

Another important program is the FarmWays loan program funded by the Rhode Island Center for Agricultural Promotion and Education (RICAPE), which provides assistance and support to agricultural tourism projects. Agricultural tourism, or agritourism, is defined as “the act of visiting a working farm or any agricultural, horticultural or agribusiness operation for the purpose of enjoyment, education, or active involvement in activities of the farm or operation”.²⁵ Through this loan program, \$250,000 is made available to Rhode Island farmers, with individual loans ranging from \$10,000 to \$25,000. Additionally, to these direct monetary supports to farmers, RICAPE also offers a variety of educational, marketing, and special events for their members. Please see table 6 for more detailed grant information.

In addition to the DEM and RICAPE, The USDA’s Natural Resources Conservation Service (NRCS) and Farm Service Agency also play important roles in aiding farmers throughout the state. NRCS offers a number of programs funded by the USDA’s conservation subsidy program to enhance conservation practices on agricultural land. These programs include the Wildlife Habitat Incentive Program (WHIP) and other land protection programs aimed at maintaining open space. Several farmers participate in these programs, which often involve multi-year contracts and collaboration with other governmental offices in the state. The Farm Service Agency provides a variety of loans and often works in conjunction with NRCS to provide information regarding subsidy availability.

The state programs available in Rhode Island are generally focused on supporting small-scale, diversified farm operations. Because Rhode Island farms are largely

²⁵ As Defined by the Rhode Island Department of Environmental Management

specialty-crop based ²⁶, the DEM's programs focus on expanding and supporting operations that enhance the state's agricultural "image" of being highly localized, accessible, and unique. This is advantageous for sustainable farmers throughout Rhode Island, which work to integrate community and environmental values into their operations.

Farms in Rhode Island: NGO and Community Programs

In addition to DEM programs, there is an extensive network of non-governmental organizations (NGO's) and community programs focused on supporting and expanding Rhode Island agriculture. The most well-known and ever-expanding program is Farm Fresh RI, which acts as an umbrella NGO organization for several programs to raise money for and awareness about farming in Rhode Island. Specifically, Farm Fresh RI strives to support and foster "a New England abundant with diverse family farms and fertile soils, with locally and honestly produced foods and flavors at the heart of every dinner table" ²⁷. The organization works to accomplish this by creating opportunities for farmers to establish a strong distribution network throughout the state. This is largely accomplished through their internet database, distribution route maps, farmers' markets, and special events.

Farm Fresh RI also works extensively with other local programs such as Rhode Island Center for Agricultural Promotion and Education (RICAPE) and the Southside Community Land Trust to increase community support and participation in the local agricultural community. RICAPE focuses its efforts primarily on hands-on farming

²⁶ Interview with Stephen Volpe, Department of Environmental Management, Agriculture Division, November 12th, 2007

²⁷ Farm Fresh RI.org, stated vision.

activities and bringing speakers to local schools and organizations. This helps raise awareness about farm culture in Rhode Island and helps make farms and nature-based sites more visible to people of all ages and interests²⁸. RICAPE's focus is primarily on historic agricultural areas, agritourism, and community outreach. This program is incredibly useful for farmers as it increases their visibility in surrounding communities and creates opportunities for residents to learn about and appreciate the farm work and life.

The Southside Community Land Trust has a different focus, but nonetheless works to partner with the community to increase the production and support of locally and sustainably produced food throughout the state. They provide access to land in two different locations: one is in urban Providence and another is a 50-acre plot in Cranston. There many inner-city families, both with and without previous farming experience, have the chance to grow food for their families and for profit. This particular program has facilitated a strong urban agriculture movement throughout the greater Providence area in the past two decades and “works to link critical urban environmental issues, such as lead poisoning, water conservation, open space preservation, and community development, with agriculture”.²⁹

At the root of each of these programs is a strong environmentally-focused ethic. Although each group focuses on a different aspect of farming whether it be history, advertising and networking or urban renewal, they all state in their missions and illustrate through their work that creating a united, diverse, and environmentally-sensitive agricultural community is essential. These values are inherent in sustainable agriculture

²⁸ RIfarmways.org

²⁹ Urban Agriculture Task Force (2006). *Urban Agriculture in Providence: Growing Our Community by Growing Good Food*. UATF publishing, Providence.

and demonstrate the deep commitment that community groups have already made to support such farming systems.

Defining the Terms: Introduction

It is important to identify the terms that define my work before addressing the research I have done. They will be used and referred to throughout the remainder of my research, and although they may seem somewhat intuitive, they are worth mentioning.

Defining the Terms: What is a farm?

The definition of a farm may seem fairly straight-forward. According to the Webster dictionary, a farm is “a tract of land cultivated for the purpose of agricultural production.” Other definitions are more specific to the type of cultivation or land use, but generally it relates to humans interacting and using the land to produce something for consumption or profit. Historically, the definition of a farm has evolved significantly. Since 1850 the criteria defining a farm as determined by the USDA has changed nine times³⁰. The current definition, for statistical purposes, is any place from which \$1,000 or more of agricultural products were sold *or normally would have been sold* during the year under consideration. This definition is agreed upon and used by the USDA, the Office of Management and Budget, and the Bureau of the Census and is the definition I will employ for my quantitative analysis. I have chosen this specific definition for the statistical analysis portion of my research because it allows for meaningful results when using subsidy data and statistics made available by the National Agricultural Statistics

³⁰ USDA glossary of terms

Service and is also how the Rhode Island Department of Environmental Management defines farms in Rhode Island.

Using this definition, Rhode Island is currently home to 858 farms covering over 61,000 acres, the majority small vegetable growers, along with oyster farmers, dairy farmers, ornamental grass farmers, and turf farmers³¹. However, when trying to define the actual number of active farms in Rhode Island, the numbers get a bit hazy. According to a farm list available through the DEM³² the number of active farms hovers around 450. This is substantially lower than the number cited from the USDA, which includes (as highlighted earlier) operations that normally would have had an appropriate annual revenue of \$1,000 to be considered a farm. Furthermore, past agricultural research done by Louella Hill in 2004 further indicates a discrepancy in the USDA farm list and the actual number of active farms. In her results she found of the fourteen farms she interviewed, four were no longer in business³³. Although a relatively small number of farms were sampled for this particular component of her research, it speaks to the large discrepancy between the number of reported and active farming operations within the state. I will take this into consideration throughout my research and project.

Defining the Terms: What is Sustainable Agriculture?

The term “sustainable agriculture” often defies definition. Is anything in our world truly sustainable? What exactly about agriculture are we trying to sustain? How can we attach this tenuous term to farming practices and food production systems?

Although this term implies many different things depending on the context, it has

³¹ USDA 2002 Agricultural Census.

³² RI DEM Farm list. <http://www.dem.ri.gov/programs/bnatres/agricult/farms99.htm>

³³ Hill, Louella (2004). *Localizing the Foodshed: What are the Barriers to the Production and Distribution of Locally Grown Foods in the Rhode Island Region?*

nonetheless proven a powerful cornerstone in many innovative ideas presented and practiced in the agricultural world today, and it holds promise for the future.

To break it down, the term “sustain” from the Latin word *sustinere* means to hold up, or sustain. More modern definitions are to supply with sustenance, to give support or relief, to prolong. The word “sustainability” as pertaining to environmental issues was not commonly used until around 1987 until the publication of the *World Commission on Environment and Development report, Our Common Future* coined the term³⁴. Here sustainability is defined as “meeting the needs of the present without compromising the ability of future generations to meet their own needs.” Although this document deals primarily with sustainable development, this definition was soon adopted for use in other environmental initiatives and is currently used by the EPA, DOE and the USDA.

Agriculture is defined as: “ the science, art, or practice of cultivating the soil, producing crops, and raising livestock and in varying degrees the preparation and marketing of the resulting products”³⁵ Other definitions are generally more broad, and refer only to the act of raising crops, and livestock³⁶. Therefore the term “sustainable agriculture” describes farming systems that not only able to produce crops, raise livestock, and sell farm products but are also “capable of maintaining their productivity and usefulness to society indefinitely.” (Ikerd, 1990)³⁷. Ikerd ventures further to say that these systems “must be resource-conserving, socially supportive, commercially competitive, and environmentally sound" to be truly sustainable.

³⁴ United Nations World Commission on Environment and Development (WCED) (1987). *Our Common Future*. Oxford, Oxford University Press.

³⁵ (Merriam-Webster dictionary, 2006 ed.).

³⁶ Thefreedictionary.com, dictionary.die.net, biology online.

³⁷ John Ikerd, as quoted by Richard Duesterhaus in "Sustainability's Promise," *Journal of Soil and Water Conservation* (Jan.-Feb. 1990) 45(1))

The North Central Regional Committee on Sustainable Agriculture defines sustainable agriculture as:

“A system that utilizes an understanding of natural processes along with the latest scientific advances to create integrated, resource-conserving farming systems. These systems will reduce environmental degradation, are economically viable, maintain a stable rural community, and provide a productive agriculture in both the short and the long term.”

This definition not only takes into consideration the *ethic* of sustainable agriculture, but also the *application* and integration of sustainable agriculture within the frame of modern technology.

The federal government has also defined sustainable agriculture. The 1990 Farm Bill, where the definition of sustainable agriculture was first presented, says: “The term sustainable agriculture means an integrated system of plant and animal production practices having a site-specific application that will, over the long term:

- satisfy human food and fiber needs
- enhance environmental quality and the natural resource base upon which the agricultural economy depends
- make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls
- sustain the economic viability of farm operations
- enhance the quality of life for farmers and society as a whole”³⁸

³⁸ US Code : 7 USC 64§ 3103(18)

The common thread that runs through each of these definitions is a required sense of a farm's impact on the greater surrounding area, whether this is on human communities, biodiversity, or watersheds. It precludes a narrow understanding or approach to agriculture and demands action and thought that is not only innovative but also environmentally-friendly.

A more effective way of addressing of what sustainable farms “look like” and how they function is to define tangible characteristics of sustainable farming operations. After extensive research for commonalities in sustainable farms on the East Coast, The Small Farm Success Project [SFSP] defined two sets of criteria, essential characteristics and production characteristics as stated below.

Essential Characteristics

- Local Marketing
- Diversity
- Relationship Building
- Educational Mission
- Stewardship
- Food Security Initiatives
- Obtaining Value from Nature
- Compromise and Flexibility
- Willingness to Question
- Knowledge and Experimentation
- Logistics and Management
- Financial Stability

Production Characteristics

- Crop Rotation and Cover Cropping
- Minimal off-farm Materials
- Holistic Pest Management
- On-farm Nutrient Sources
- Conservation Tillage
- Affordable Equipment
- Irrigation and Mulch
- High Tunnel Production

Although the essential characteristics are not as easily definable as the production characteristics, the SFSP rationalized that “that the individuality of the farm determines the agricultural strategies used on it”³⁹. Therefore, their criteria needed to remain broad enough to make room for individuality in farming technique, a quality that they deem to be one of the most important in a sustainable system.

For the purpose of my research, these criteria will be referenced when assessing the sustainability of Rhode Island farms but will later be modified to specifically address sustainability in Rhode Island. Although not all of the characteristics above are required for a farm to be considered “sustainable”, a true dedication on the part of the farm owner to adhere to and evolve with the needs of their community, land, and local ecosystem will be determining factors in a farm being defined as “sustainable”. Another way of thinking of the aforementioned attributes is as part of the ideal recipe or a continuum, for a farm needs many, but not necessarily all ingredients, to be sustainable.

³⁹ Gilbert, Leslie; Teasdale, John R.; Kauffman, Charles et al. (2003). Characteristics of Sustainable Farmers. *Small Farm Success Project and the Initiative for Future Agriculture and Food Systems [IFAFS] Grant Program*. 1-30.

Methodology

To answer the question, *to what extent do farmers in Rhode Island utilize subsidies, state grant programs, and community programs to enhance the sustainability of their operation*, I first completed an analysis of Rhode Island farm characteristics and federal subsidy distribution in the state. Then I summarized the types of grants and programs the state offers to farmers and identified obstacles regarding use of agricultural programs and services based on interviews with representatives from federal and state agencies and NGOs. I focused my research primarily on farms committed to farming methods such as IPM, no pesticide, and organic to gain a sense of what programs they find most useful. However, in my interviews I surveyed several different types of farms to gain a general understanding of Rhode Island farming. For a summary of methods, see Table 1.

Subsidy Distribution and USDA Agricultural Census Analysis

Subsidy data for Rhode Island is available from 1995-2005 through the Environmental Working Group's (EWG) database and when possible, an analysis of all years was completed. However, when using the USDA Agricultural Census as part of the analysis, which was most recently updated in 2002, only the subsidy data from 2002 was used. In my analysis I looked at what type of subsidies farmers in Rhode Island used most frequently between 1995-2005 and for 2002 and compared the subsidy dollar used per acre of harvested cropland to other states and the US as a whole. Furthermore, I used the 2002 USDA Agricultural Census to determine the top-funded subsidy programs in the state.

Interviews with State Agencies and NGOs

To gain a sense of what programs and resources are available to farmers at a state level, I interviewed representatives from five state agencies and NGOs. My interviews addressed what services each group provides for farmers, how those services contribute to farm sustainability, and the obstacles farmers face in Rhode Island. For interview protocol, see appendix 1.

Online Survey

I distributed an online survey regarding use of agricultural subsidies, grant programs, and other programs based on farming practices and history, subsidy and grant usage, and opinions on sustainable farming. This survey was sent to farmers through the Cooperative Extension and several mass emails. Email addresses were acquired through the Farm Fresh RI database and farm websites. For survey questions and results, see appendix 2.

Interviews with Farmers

As a follow-up to the survey, I completed nine interviews with farmers to learn more about the number and type of enterprises they manage, their opinions about sustainable farming, their personal farming history, and their usage and knowledge of subsidies, grants, and community programs. I also visited most of these farms for the interview itself or as a follow-up tour. See appendix 3 for interview protocol.

Observation at local farming conferences and forums

I attended the Northeast Organic Farming Association's (NOFA) winter conference along with the Farm Fresh RI Local Food Forum to observe how the different agricultural entities interact as well as to gain more information about prominent concerns and needs mentioned and discussed at a state and regional level.

Table 1: Summary of Methods	
Interviews	Farmers, farm regulators, representatives from non-profits
Literature Survey	USDA Agricultural Census, 1964-2002, U.S Farm Bill, 1985-2007, sustainable agriculture literature
Online Survey	Rhode Island Farmers
Conferences	Northeast Organic Farming Association, winter conference (January, 2008) Local Food Forum, Farm Fresh RI (February, 2008)
Subsidy Analysis	USDA Agricultural Census, 2002, Farm Subsidy Database, 1995-2005
Site Visits	Local farms throughout the state

Results

Farm Profile

Currently Rhode Island is home to 858 farms, down from 994 in 1997⁴⁰. The average size of each farm is 71 acres, although the most frequently observed farm size is 10 to 49 acres, with a total of 61,000 acres of farmland in the state. This is significantly less than the national average, which was 441 acres per farm in 2002 with the most frequent

size observed between 50 to 179 acres.⁴¹ Over 80% of farms in Rhode Island are family- or individually-run, with the principal farm operator depending on the farming operation for their primary occupation 50% of the time. Additionally, of the individually-run farms, 83% or 611 farms are small or medium sized operations ranging from 1-69 acres. The other 20% of farms are categorized as partnerships, corporations, or “other” which includes cooperatives, estates and trusts, and institutional farms.⁴² These types of operations are observed most frequently in medium-sized farms from 10-69 acres, with the majority of large farms greater than 70 acres categorized as corporations⁴³.

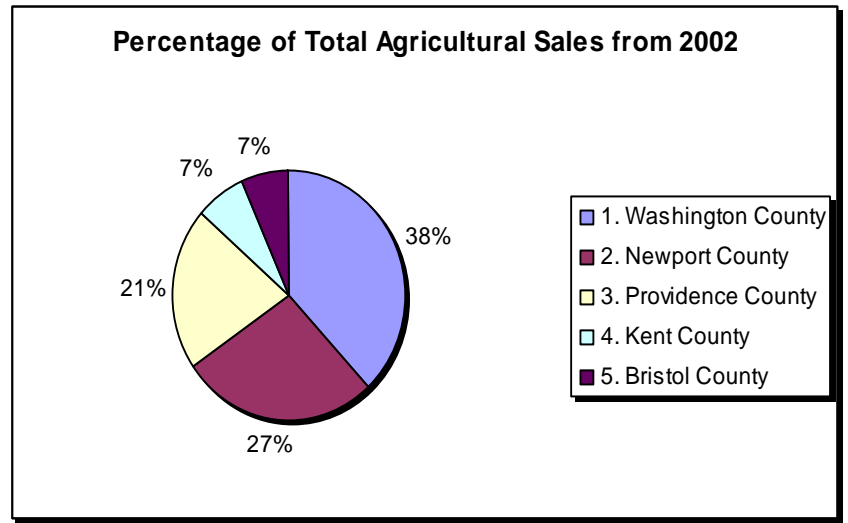


Figure 2: Percentage of Total Agricultural Sales from 2002 based on export sales receipts and wholesale sales receipts. It is important to note that some types of sales, for instance some farmers markets, Community Supported Agriculture sales, and farm stand sales are not necessarily included in this figure and in the other statistics presented in this section.

⁴⁰ 2002 Census of Agriculture- State Data. USDA National Agricultural Statistics Service

⁴¹ 2002 Census of Agriculture- National Data. USDA National Agricultural Statistics Service

⁴² 2002 Census of Agriculture Data- Fact Sheet. USDA National Agricultural Statistics Service

⁴³ 2002 Census of Agriculture Data- State Data, Summary by Type of Organization. USDA National Agricultural Statistics Service

The types of crops grown in Rhode Island are incredibly diverse. The top agricultural commodities recorded by the USDA in 2006 were greenhouse/nursery goods, dairy products, corn, aquaculture, potatoes.⁴⁴ However, the top export is turf, which is the second-largest mono-cropping farm operation (behind tree farms) in the state. The other top exports are seeds, vegetables, livestock, and feed. Of the goods exported, Washington County and Newport County, which also have the greatest number of farms, represent the largest percentage of agricultural sales in Rhode Island (see Figure 2). Nevertheless, the majority of farms in Rhode Island make less than \$10,000 in sales per year from exported goods and wholesale goods⁴⁵. In addition, the average value of crop output for the year averages out to be \$53,641 per farm and average net farm income per farm hovers around \$28,000 per year. Interestingly, Rhode Island was ranked number two in the country behind California for direct-marketing sales of fruits and vegetables from farms to consumers on a per farm basis this past year.⁴⁶ This suggests that many Rhode Island farmers sell within the local food-shed due to high consumer demand for locally farmed goods and likely prefer local markets above national food markets.

Looking at size specific characteristics, it becomes clear that crop concentrations are correlated with farm size. Small farms, those less than ten acres, are most likely to be vegetable or fruit operations. Medium sized farms, those 10 to 69 acres, are most likely to be hay, vegetable, or fruit operations. Large operations, those greater than 70 acres, follow the same trend as medium sized farms until acreages greater than 500, at which point there are no fruit and vegetable farms and only hay and grain farms. This suggests that the

⁴⁴ According to the USDA. However, this is based off of “for cash receipts” so is not wholly representative of top agricultural commodities in RI.

⁴⁵ This is according to export receipts and wholesale receipts, which do not necessarily accurately represent a farm’s total sales, or general profitability.

⁴⁶ According to a national survey sponsored by the USDA and recognized by RI DEM. USDA and NASS (2007). Direct Marketing of Vegetables and Fruits in United States Agriculture: A Summary.

largest farms in Rhode Island are not the primary growers of fruits and vegetables, so the majority of farms contributing to the direct-marketing sales of fruits and vegetables in the state are small and medium sized farms (see Figure 3).

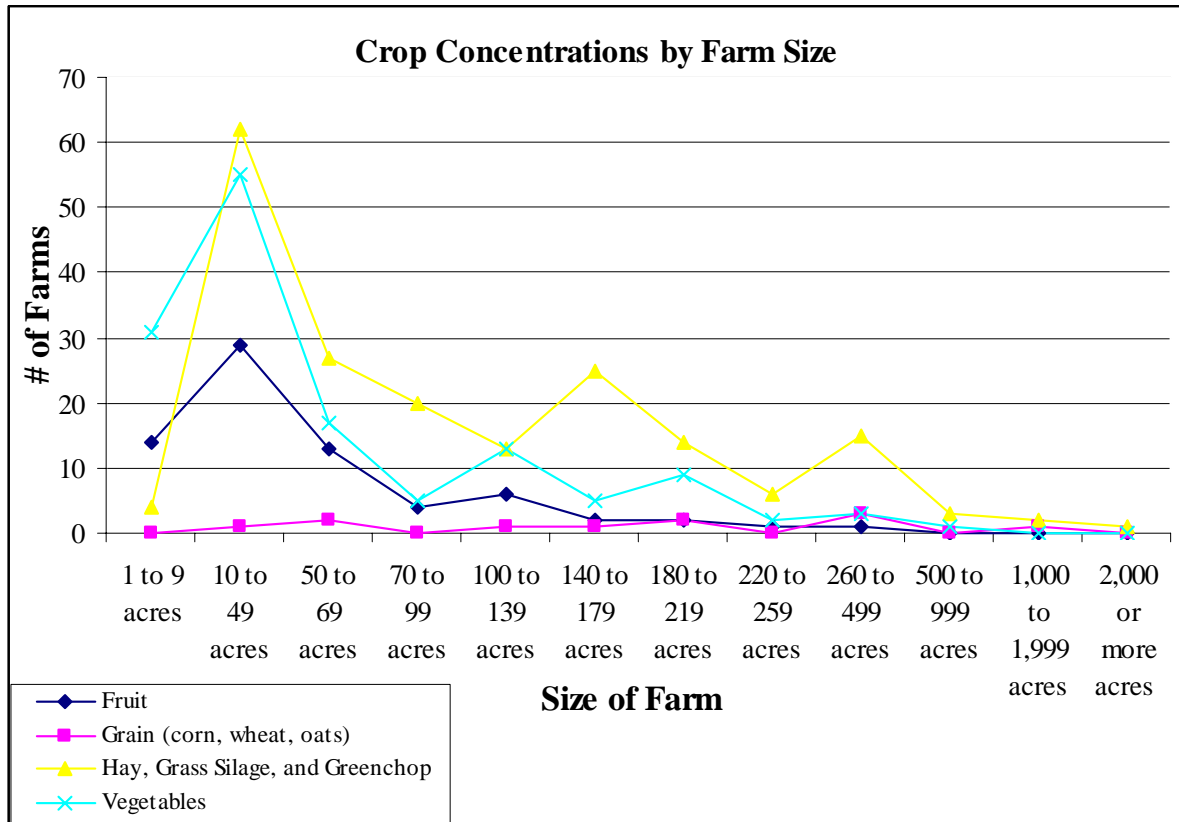


Figure 3: Crop concentrations by farm size. Source: 2002 Agricultural Census-State Data.

Subsidy Distribution and Agricultural Census Analysis

Rhode Island, home to several small farms, receives very little funding from the USDA subsidy program. Of the 858 farms in Rhode Island, a mere 6% used federal subsidies in 2006.⁴⁷ With a total distribution of \$5.83 million in federal subsidies between the years of 1995-2005, Rhode Island is ranked last in the total amount of subsidy money distributed to the states. The subsidy program that has paid the most money to farmers over the past ten years is the disaster program, which is the least

⁴⁷ Farm Subsidy Database. Rhode Island Summary Data.

consistent financial support the subsidy relief program offers (see Figure 4). This, in conjunction with the general lack of subsidy utilization throughout the state, speaks to the relative independence of Rhode Island farmers from farm subsidy payments and also to the non-commodity focus of farms in Rhode Island.

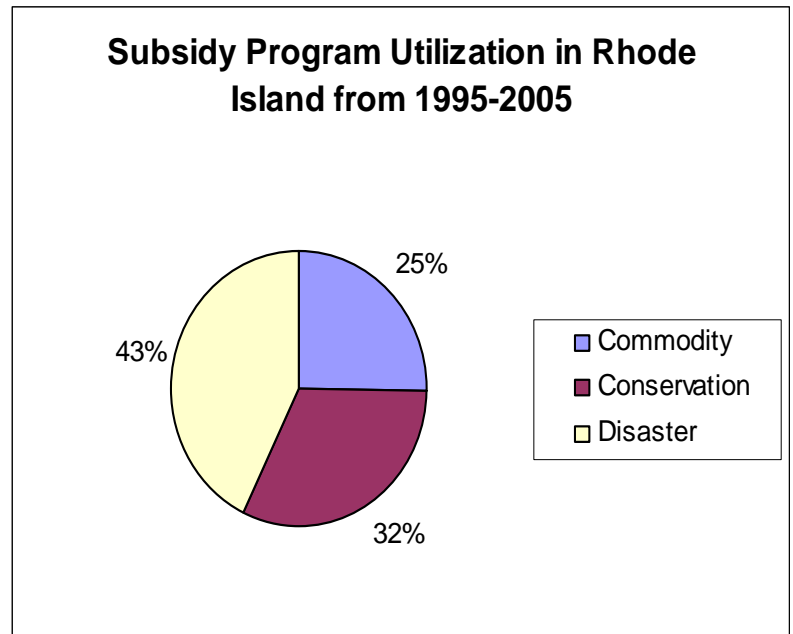


Figure 4: Subsidy Utilization in Rhode Island from 1995-2005. Farm Subsidy Database, Environmental Working Group. Based on sum of subsidies distributed in ten year period, and not on recipient numbers

As mentioned above, of the federal subsidy program money distributed to Rhode Island farmers from 1995-2005, 43% is from disaster subsidy programs. However, when looking at subsidy distribution from 2003-2005, the overwhelming majority of money is channeled into conservation subsidy programs, with the Wildlife Habitat Incentives Program (WHIP) and the Environmental Quality Incentive Program (EQIP) generating the greatest amount of funding in the state (see table 2 below)⁴⁸.

Table 2: Top Ten Subsidy Programs in Rhode Island from 2003-2005

Rank, Rhode Island	Program	Number of Beneficiaries program years 2003-2005	Total program years 2003-2005
1	Wildlife Habitat Incentives Program	16	\$875,493
2	Environmental Quality Incentive Program	76	\$706,450
3	Grasslands Reserve Program	11	\$342,392

⁴⁸ Conservation Subsidies are available to non-agricultural land owners, however these number reflect the amounts given only to agricultural land owners (don't include "non-farmers").

4	Dairy Program Subsidies	32	\$308,186
5	Corn Subsidies	48	\$189,700
6	Wetlands Reserve Program	2	\$76,500
7	Total Conservation Security Program	3	\$13,023
8	Conservation Reserve Program	1	\$4,189
9	Sorghum Subsidies	4	\$206
10	Wool Subsidies	2	\$171

These two programs, which encourage farmers to improve the environment on their farm, are important components of the farm subsidy program, but on a national scale receive less funding and recipients than commodity programs⁴⁹. Nonetheless, the Conservation Reserve Program, which focuses on soil, water, and natural resource projects, has remained a popular and well-funded project at the state and national level. This indicates that Rhode Island farmers are utilizing conservation subsidies more often and more money is being given to conservation subsidies from 2003-2005 than in past years. However, when looking at trends in subsidy payment distribution and number of recipients over the past ten years it is clear that there are no patterns in recipient numbers (see Figure 5), even though the amount of money going toward conservation subsidies has increased. This suggests that recipients are receiving greater amounts of money from the conservation subsidies than in previous years, but not necessarily that more people are utilizing the program.

⁴⁹ Farm Subsidy Database (2002)

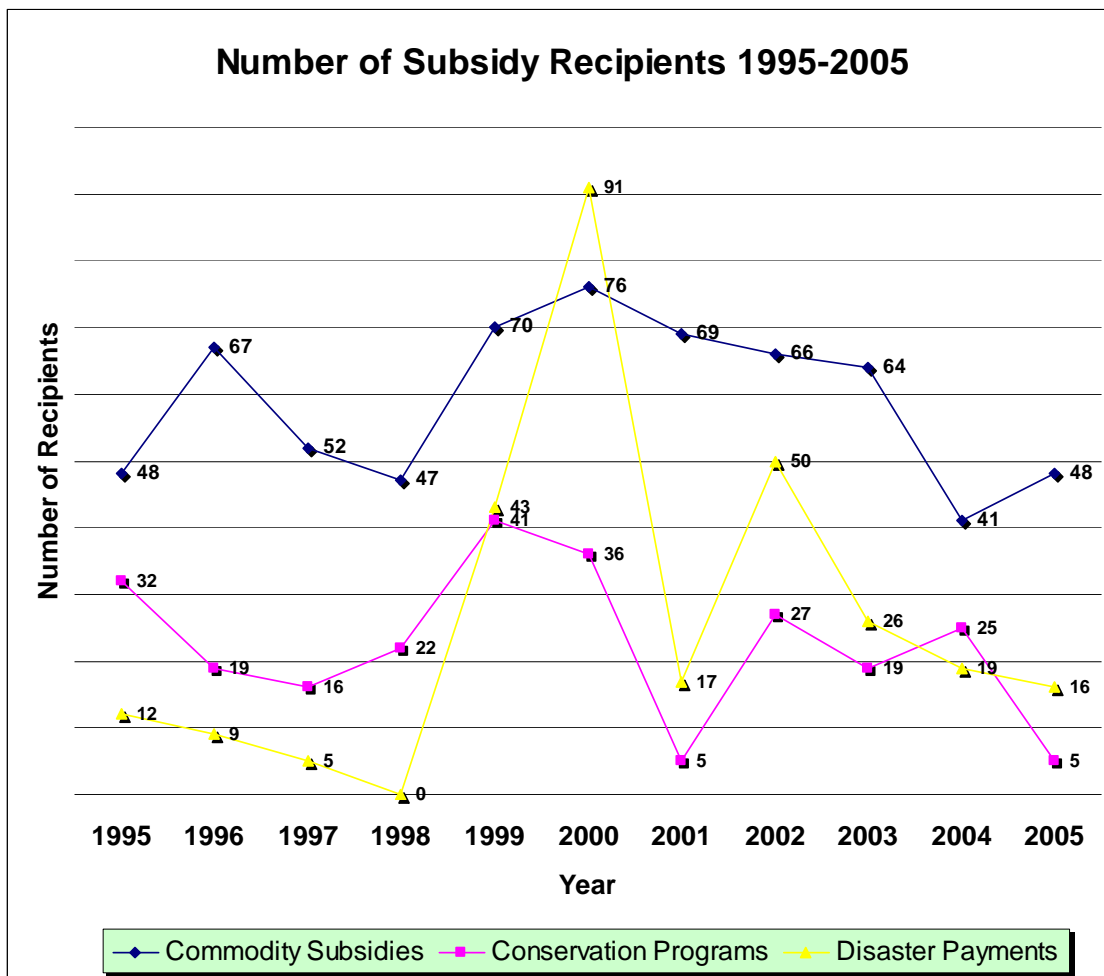


Figure 5: Number of Subsidy Recipients in Rhode Island from 1995-2005. Farm Subsidy Database, Environmental Working Group.

To compare Rhode Island federal subsidy usage and distribution to other states and the United States in general, I have included basic agricultural comparison information for each state and tables of the top ten subsidies utilized nationwide and those utilized within Massachusetts and Connecticut (see Figure 6 & Tables 3-5). It is clear through looking at the top programs listed in the tables that national federal subsidy usage is focused primarily on commodity programs. This is in contrast to Rhode Island, Connecticut and Massachusetts, which all share commonalities in the types of programs listed in their top ten list, specifically the conservation, dairy, and disaster programs. Looking more specifically at Rhode Island’s top ten programs, the high rank of the WHIP program is particularly state-specific, as it is the top subsidy program in Rhode Island but not listed for the US, Connecticut, or Massachusetts top-subsidy programs. Still, the

relatively low amount of money given to New England subsidy programs along with the low number of recipients suggests that New England, with its smaller, more family-oriented farms, is not a target for subsidy programs and funding.

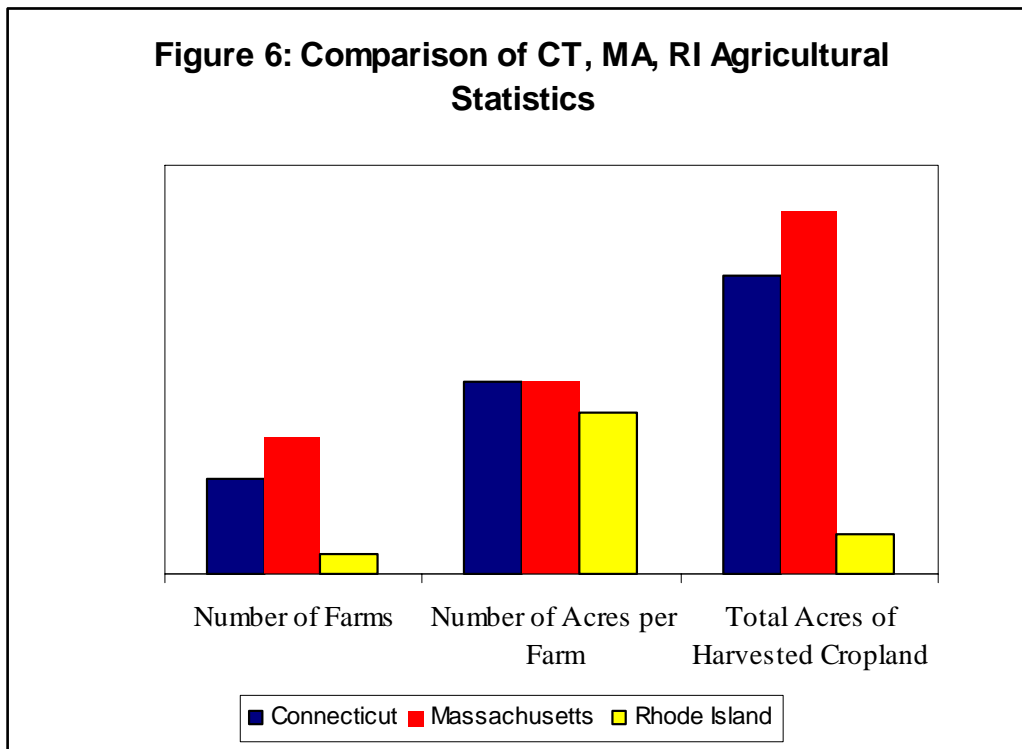


Figure 6: Comparison of CT, MA, RI Agricultural Statistics. National Agricultural Statistics Service. This is a scaled comparison and does not reflect actual numerical values.

Table 3: Top Ten Subsidy Programs in the United States from 1995-2005

Rank, United States	Program	Number of Beneficiaries program years 1995-2005	Total program years 1995-2005
1	Corn Subsidies	1,531,926	\$51,261,278,801
2	Wheat Subsidies	1,276,563	\$20,954,321,020
3	Cotton Subsidies	239,133	\$19,111,285,365
4	Conservation Reserve Program	732,877	\$18,439,035,726
5	Disaster Payments	1,243,520	\$14,990,590,041
6	Soybean Subsidies	957,046	\$13,596,373,606
7	Rice Subsidies	63,315	\$10,502,307,804
8	Sorghum Subsidies	572,518	\$4,218,957,588
9	Dairy Program Subsidies	147,635	\$3,128,991,887
10	Livestock Subsidies	754,098	\$2,894,012,238

Source: EWG's Federal Subsidy Database, National Summary Data,

Table 4: Top Ten Subsidy Programs in Connecticut from 1995-2005

Rank, Connecticut	Program	Number of Beneficiaries program years 1995-2005	Total program years 1995-2005
1	Disaster Payments	700	\$23,116,436
2	Corn Subsidies	601	\$19,086,540
3	Dairy Program Subsidies	414	\$11,058,664
4	Env. Quality Incentive Program	126	\$2,898,684
5	Livestock Subsidies	354	\$1,145,490
6	Apple Subsidies	53	\$724,512
7	Conservation Reserve Program	22	\$189,459
8	Wool Subsidies	132	\$47,602
9	Tree Subsidies	5	\$44,602
10	Sheep Meat Subsidies	51	\$41,020

Source: EWG's Federal Subsidy Database, National Summary Data

Table 5: Top Ten Subsidy Programs in Massachusetts from 1995-2005

Rank, Massachusetts	Program	Number of Beneficiaries program years 2003-2005	Total program years 1995-2005
1	Disaster Payments	1,537	\$34,192,472
2	Corn Subsidies	820	\$12,730,872
3	Dairy Program Subsidies	507	\$11,559,812
4	Env. Quality Incentive Program	290	\$2,576,926
5	Apple Subsidies	128	\$1,908,004
6	Livestock Subsidies	646	\$1,669,845
7	Conservation Reserve Program	19	\$104,533
8	Wool Subsidies	227	\$92,026
9	Sheep Meat Subsidies	113	\$79,756
10	Honey Subsidies	26	\$68,771

Source: EWG's Federal Subsidy Database, National Summary Data

Furthermore, when looking at how the subsidy dollars are distributed among farmers in New England, it becomes clear that agriculture in this region is not a target or focus for subsidy programs. The primary recipients of such subsidies are large

agricultural states, California and Texas. Below is a table containing normalized values for subsidy money distributed per acre of harvested crop land, with other state values added for comparison (see Table 6). Rhode Island receives the least amount of subsidy money per harvested acre compared to other states and the national average, with a staggering difference between Rhode Island and California or Texas. However when compared to New England states Rhode Island receives only slightly less per harvested acre than other states, which indicates that New England itself is not highly dependent or able to depend on most subsidy programs. What makes Rhode Island unique is that although the top recipients (farming operations that consistently receive the most funding, see appendix 4) of farm subsidies in Rhode Island primarily utilize a mix of disaster, commodity, and conservation subsidies, the trend in subsidy utilization (as indicated by the top ten subsidy programs in the state) within the state is moving toward conservation subsidies.

Table 6: Normalized Values for Subsidy Money Distributed per Acre of Harvested Crop Land

Area	year	subsidy total	harvested cropland in production (acres)	Subsidy \$/Acre of Harvested Land
US	2002	\$12,949,467,468	302,697,252.00	\$42.78
RI	2002	\$650,992	17,820.00	\$36.53
WI	2002	\$332,096,359	8,928,083.00	\$37.20
CA	2002	\$773,697,737	8,466,321.00	\$91.39
MA	2002	\$6,043,575	159,253.00	\$37.95
TX	2002	\$1,305,629,865	17,750,938.00	\$73.55
NH	2002	\$3,801,584	95,983.00	\$39.61

When looking specifically at individual recipients of the subsidies, this data elucidates the fact that the national trends of subsidy distribution do not hold true for Rhode Island. The money distributed among the top recipients of Rhode Island subsidy

programs are largely from conservation and disaster subsidies and are awarded to a variety of farming operations⁵⁰. Confreda Farms and Produce in Hope, RI is a large pick-your-own operation with several community outreach programs and a greenhouse. It was also the top recipient of subsidy money from 1995-2005, receiving \$567,648 in disaster subsidies during that ten year period. Other top recipients include several dairy farms, and one organic farm, Wishing Stone Farm, which used \$66,021 of disaster and conservation subsidies from 1995-2005. The diversity represented in the top ten recipients of subsidies in Rhode Island is repeated throughout the entire subsidy recipient list and suggests that subsidies are not focused on one type of farming operation and are used for conservation projects and disaster relief as opposed to a supplemental annual support⁵¹.

State Programs and NGOs

I conducted interviews with representatives from five different programs and NGO's. Overall the most useful information I gained from these interviews were opinions about what sustainability means in terms of agriculture, and what programs they offer and to what extent they are focused on sustainable agriculture. Interviewees also identified the overarching obstacles and opportunities farmers face in Rhode Island to be sustainable, and what programs and services sustainable farmers currently need/will need to remain viable in the future.

⁵⁰ Table of recipients is available through the farm subsidy database

⁵¹ Additional federal subsidy information (i.e. the amounts received from each subsidy program by each farmer) can be accessed through the EWG's Farm Subsidy Database online.

A Definition of Sustainable Agriculture

Opinions varied widely on the definition of sustainable agriculture, and largely depended of the mission of the program. Noah Fulmer, from Farm Fresh RI stated “having IPM and organic methods are certainly sustainable farming methods. You can’t ignore that holistic picture with the actual application. Making sure you are investing in soil quality, taking the waste from the season and composting it and then putting that back into the soil the following season, not using pesticides unless absolutely necessary...it involves stakeholdership in the land and how we grow....[and] programs that bring people back in touch with farmland are definitely parts of sustainable agriculture.” Fulmer also pointed out that environmental sustainability is high in Rhode Island due to the close proximity of farmland to houses, primary water sources, and other areas where high pesticide use or other chemically-intensive methods would not be wise or permitted. His definition largely focused on environmental and community sustainability, and applied primarily to farming methods.

Other definitions focused more on economic sustainability. Kristen Dame, the Cooperative Extension Agent from URI, asserted “Sustainability is such a big topic. It is saying yes we want to take care of the environment, but there is more to sustainability than the environment. There is also economics. In order for a farm to be sustainable they have to make money. If they are really good to the environment but they can’t pay their bills, that is not a sustainable farm. So we have to combine those two. And then there is the social aspect. You know, if they can pay their bills and they are good to the environment but the neighbors hate having the farm next door that is not sustainable because they will drive them out.” This definition, which places equal emphasis on

economics, community and the environment when dealing with agricultural sustainability, is also shared with RICAPE and other governmental institutions such as the DEM and NRCS.

Offered Programs

The definitions offered by the various interviewees often reflect the focus of their programs, which center on a wide array of agricultural promotion and sustainability issues. For instance, the cooperative extension is charged with providing technical assistance and training for the whole of farmers in Rhode Island, and therefore must consider the diversity of issues and obstacles farmers face on and with their land, which precludes a narrow focus on environmental sustainability issues. Still, there is an increasing focus on operational methods within the cooperative extension, which is working to become a better resource for small-scale vegetable farmers⁵². Farm Fresh RI, however, had a more pointed focus of supporting farms that focus on local distribution and sustainable methods. Specifically, they have provided a networking system that encourages environmentally sustainable behavior through connecting local food advocates and restaurants that largely support pesticide-free or low-pesticide growing systems with Rhode Island farmers. Securing a market allows many farmers in Rhode Island to explore and maintain alternative farming methods while also remaining financially viable through utilizing Farm Fresh RI programs and services.

⁵² Kristen Dame, interview 2/14/08

Farming Obstacles in Rhode Island

The definition of sustainability and the program focus differed amongst the departments and organizations, however there was a general consensus regarding the primary obstacle faced by farmers in Rhode Island. The number one identified issue, which was brought up as a concern in four of my interviews, was land security and acquisition. This concern was especially applicable to new farmers, especially very small-scale (1-5 acre) sustainable farming operations. New farmers have an extremely difficult time acquiring land (owned or leased) due to high land prices, and established farms struggle between selling development rights and the profitable option of selling to commercial developers⁵³. It is a complicated issue highlighted throughout each interview, but programs like Farm, Forest, and Open Space, as well as posting land availability on online bulletins, were cited as positive developments for RI farmland preservation.

Beyond land rights, there were various opinions regarding other farming obstacles. Stu Nunnery from RICAPE cited agricultural training logistics as a primary issue, stating, “You have 10-12 week training window. So it is not just a matter of certain [training sessions] not being available, it’s that there are many things working against it.” Eric Scherer, State Resource Conservationist at NRCS identified energy usage and security as a prominent issue and cites increased renewable energy research and utilization as helpful to reduce energy costs for farmers in the long term. Other concerns were focused primarily on lack of USDA funding for training and conservation programs and farmer outreach.

⁵³ Stu Nunnery. Interview 1/18.

Future of Agriculture in Rhode Island

However, there was an overarching consensus amongst interviewees that the future for farmers in Rhode Island is promising given the current agricultural services and programs' expansion and evolution over the next few years. The Cooperative Extension is currently highlighting the Farmlink program in Connecticut to "connect older farmers who are selling out with younger farmers who are looking for land [in Rhode Island]."⁵⁴ This service, which would be particularly useful to small-scale sustainable growers and new farmers, addresses part of the agricultural land security issue. RICAPE is working to expand their workshop schedule and to widen their focus more regionally which would allow them to offer more comprehensive services. Farm Fresh RI is working to attain funding for a multipurpose farm center that would house a commercial-grade kitchen, resource center, and distribution area for local farmers. Most respondents felt that the expansion of their programs' services along with greater USDA funding for diversified vegetable farmers' agricultural projects would help sustain farming into the future.

Online Survey

Thirty seven farmers representing 37 different farms responded to my online survey, with 34 farms fully completing the survey (completing at least 90% of the survey). I was able to get responses from a mix of sustainable and conventional farming operations. Here I will highlight some results of the survey, but for a complete summary of survey results, please reference Appendix 2.

The survey focused on operational methods, subsidy and grant usage, and opinions on sustainability issues. Of the thirty seven respondents, 27 were currently engaged in an environmentally-sustainable operation as defined in my introduction. As I

⁵⁴ Kristen Dame. Interview 2/14

did with my interviews with state and NGO agricultural programs, I first sought to determine what a sustainable farm meant to farmers in Rhode Island. In terms of production, drip irrigation, no till techniques, IPM, and no pesticide use were cited as the primary operational characteristics of a sustainable farm⁵⁵. For management techniques, CSA's were considered to be the most consistent operational technique with sustainable farming, especially in conjunction with farm-stand operations. A highly-localized distribution network was also deemed incredibly important. Another interesting response was that part of sustainability is selling development rights to governmental entities or land trusts, which would ensure that the land remained an "open space." Economically sustainable practices also included growing for a niche or specialty market and diversifying farm enterprises and distribution networks.

Lastly I wanted to highlight responses regarding long-term economic viability. Of the thirty-seven respondents, eight indicated that they had received federal subsidies in the last year (see appendix 2, questions 13-16). Four of these individuals exclusively used conservation subsidies, while others used a combination of conservation and commodity subsidy programs. Of these eight respondents, five indicated that they had used subsidies in the last five years in addition to this past year all of which were conservation subsidies. This finding suggests a relationship to the increased conservation funding in the past five years as indicated by the subsidy database and the NRCS. Looking further into other grants and programs, farmers indicated that they had received funding from Sustainable Agriculture Research and Education (SARE) funds; Community Food Security Grant; RICAPE grants, loans from the Farm Services Agency,

⁵⁵ Farmer Survey. Question 11.

and tax relief from the Farm, Forest, NRCS grants, New England Grass Roots, and the Farm Forest and Open Space (FFOS) tax reduction program.

Farmer Interviews

As a follow-up to the online survey, eight farmers were interviewed. Through these interviews I was able to gain a more in-depth understanding of their views on sustainable agriculture, the obstacles as well as benefits of farming in Rhode Island, what financial and technical assistance they find most helpful, and the potential for a more sustainable farming system in Rhode Island's future.

Sustainable Agriculture

Similar to my interviews with government officials and NGO representatives, the definitions given for sustainable agriculture varied significantly. However, they did tend to focus on specific operation methods. Katie Miller from Scratch Farm defined sustainable agriculture as a system where "everything that is used on the farm is created on the farm...all the compost comes from cover crop you plant or from compost from your customers. Not needing to buy gas for the tractor or cover crop seed, just being able to produce everything you need within your farm or the farm community". She also mentioned that this is the *ideal* for a sustainable system, and noted her operation has not reached this point.

In addition to the environmental and systems sustainability that Katie Miller mentioned in her definition of sustainable agriculture, most other interviewees tended to include economic considerations into their definitions. Jan Eckhart from Sweet Berry Farm stated that "sustainable agriculture to me is using farming practices that are not

going to degrade or deteriorate the quality of the land....that is strictly from the land perspective. ...As far as sustaining the farm itself...there are two aspects to it. One is the soil and land itself...and the business part--value added, trying new things, agritourism , hosting weddings, making cheese....the sky is the limit.” Jan’s definition reflects Sweet Berry Farm’s established dedication to agritourism and diversifying their farm’s enterprises. Riverside farm shared in this sentiment, citing the need to have a “holistic” view of the farm and to understand its impact on the surrounding community as primary considerations in sustainable farming operations.

Eric from Ledge Ends Farm had a more community-oriented response, saying sustainability stems from a commitment to “a very local-based business and tying it directly to the people that we feed. We want them to feel like they have a real stake in where their food is grown... Everybody has a better appreciation of where their food is coming from and therefore respects the process that goes into that. So, in turn it makes me want to be very conscious of how I am feeding these people.” This belief directly influences his farming methods, which are organic and as low-impact as possible.

Obstacles to Farming in Rhode Island

Stated obstacles to farming in Rhode Island spanned governmental concerns, land preservation issues, and fuel-use concerns. However, by far the largest concern was lack of cohesiveness amongst governmental agencies and the difficulty of applying for and searching for grants. One interviewee simply stated that “working with the government agencies is difficult” another citing “NRCS in what it is supposed to be is great. But with government cutbacks, the technical assistance is lacking.” Other comments centered on the lack of collaboration and communication between governmental agencies, which in

turn makes it difficult for farmers to address environmental management issues and apply for grants. Two farmers I spoke with were in the process of applying for grants through NRCS and DEM, and they expressed frustration with the lack of resources available to them to aid in the grant writing process. One mentioned, “It is extremely difficult to do the research...when you are working with grants to do the project, you can’t wait.”

Another stated, “The proposals are so difficult to come up with. ...It is more of a headache than a help.” There was a strong desire among these interviewees, and several others, to make the grant-writing process for federal and state grants more fluid and standardized between government agencies and departments.

Financial and Technical Assistance

Despite the mentioned obstacles, many farmers are still utilizing grants and training programs provided through the government as well as NGOs. Conservation programs and assistance from the Cooperative Extension agent were mentioned in all interviews except one. Ledge Ends Farm recently used the Environmental Quality Incentives Program (EQIP) to put up deer fencing and to dig a well, and also routinely corresponds with the Rhode Island Cooperative Extension Agent, Kristen Dame, regarding soil and plant issues. Cedar Edge also utilizes EQIP and the Extension service, but in addition cited the Farm Forest and Open Space tax reduction program (FFOS) “a huge help”. Cedar Edge attributed their success with FFOS to their township and cautioned that FFOS is only helpful with strong support from town government officials. Other grants, such as the Sustainable Agriculture Research and Education (SARE) grants were mentioned as being potentially helpful, but a lack of familiarity with these grants affected the farmers’ willingness to apply. Lastly, Farm Fresh was also referred to as

pivotal in increasing local marketing and establishing local distribution networks in all my interviews.

The breadth of knowledge and opinions regarding conservation programs and other state assistance programs was not mirrored when farmers were asked about subsidies. Generally speaking, there was a lack of understanding of the different types of subsidy programs and a disconnect between NRCS grants and conservation subsidies, by which many NRCS grants are funded. Still, the general sentiment toward subsidies is one of distrust, and most respondents felt it was not a permanent solution to ensure farm viability. Eric Eacker best summed up this sentiment when he said, “I have never done a farm subsidy.....I would take one if it was offered to me but I don’t feel that it is any kind of solution. I feel it is a kind of a band-aid.”. As a result, most farmers I spoke to have distanced themselves from their concept of ‘subsidy’ and have looked to other resources for farming assistance. This distance is likely a direct result of lack of availability, as farm subsidies are not focused on the type of agriculture that is prevalent in Rhode Island (please see subsidy analysis above).

Positive Trends

Beyond the confusion, frustration, and to some extent apathy toward subsidy and grant programs, everyone I interviewed was acutely aware of and excited about the business potential of consumers’ growing concern with buying locally-produced food. Jan Eckhart from Sweet Berry Farm noted that “buying local is beginning to supersede organic. People understand that buying local can be as important if not more important than buying organic”. In response to this, most were working to tailor their businesses to capitalize on the local ‘buzz’. Allan Hill mentioned focusing less on wholesale markets

and more on alternative markets which allows for a greater profit margin for his apples and experimenting with organic fruit growing methods. Jan and his wife are continuously expanding their value-added products, event schedule, and pick-your-own enterprise in response to people's heightened interest in the farm experience. It seemed the farmers' response to this movement often correlated to the number of enterprises on the farm, despite the lack of governmental support. Generally, having a diversity of farm enterprises allows for greater financial security for the farm operator, so this movement has the potential to give farmers dedicated to a localized distribution network a larger profit-margin than in the past.

Future of Sustainable Agriculture In Rhode Island

In looking at the future of farming in Rhode Island, farmers' concerns were similar to those of the governmental agencies and NGO's. High land values and land preservation issues were mentioned in nearly all of my interviews, with special concern regarding the inconsistency of the implementation of FFOS among various townships. Concerns regarding lease agreements and development rights were also mentioned in nearly half of my interviews. Interviewees who leased land or knew of farmers who leased land seemed to have the greatest concern for more long-term lease agreements. Eric Eacker, from Ledge Ends, mentioned "we are making really long-term investments now like in blueberry bushes and fertility issues and so I am pushing for a different type of lease [through the land trust]". Without long-term land security, it is difficult for farmers to invest in long-term projects that address the health of the farmland and operation. This was also an issue mentioned by Katie Miller at Scratch Farm, who said "you can't afford to buy land here, property prices are out of control...that is easily the

biggest barrier to anything around here. Unless you have a lot of money from your family or you have land already, you are not going to be able to start a farm.”

For farmland owners, the concern was less on leasing issues and was more on preservation and taxes. Kevin and Jane Durning from Riverside Farm expressed concern about preserving their land after they were unable to farm or afford the property taxes. As it is becoming less likely for children to take on the family farming business, maintaining the family traditions and connection with that land is becoming more difficult. Sweet Berry Farm shared a similar concern, but cited that land acquisition was far more difficult than preserving and maintaining it as open space, especially for small farmers.

Beyond land acquisition and preservation, there were some more specific concerns that farmers wanted addressed within the coming years. To address energy efficiency, Eric Eacker from Ledge Ends farm mentioned the potential of a bio-diesel cooperative. He said “It is so daunting just as your own farm to say, ok, I am going to make bio-diesel,” but he felt that if several farmers were interested in collaborating, the project would help farmers reduce their environmental impacts by using a more environmentally friendly fuel source. Alan Hill expressed a need for pesticide-free training programs for Rhode Island fruit growers. This would not only allow Rhode Island fruit growers to compete with the wholesale organics market (especially to Whole Foods and large chain groceries), but would also help sales in smaller, local markets. There are currently no programs focused on organic fruit growing in Rhode Island, and few resources on organic fruit growing for New England Region in general. Lastly, Jan Eckhart from Sweet Berry Farm suggested that a grant program for purchasing machinery would be incredibly helpful for the future of sustainable agriculture in Rhode Island. As many of the sustainable operations in Rhode Island are small and are incredibly labor-

intensive, increasing efficiency in planting, weeding, and harvesting through mechanization would help farmers with time efficiency. Furthermore, increased efficiency would help farmers expand the scope of their operation, which could help financial viability. Jan simply stated, “it is one thing that farmers could use more than anything”.

Conference visits

I attended the NOFA winter conference and the Local Food Forum to determine if the issues and questions concerning sustainable farming in Rhode Island apply more generally to New England agriculture. I was able to sit in on several workshops and roundtable discussions regarding new farming techniques, business strategies, and farmer concerns regarding local agriculture.

Again, similar concerns regarding land acquisition and preservation, enterprise viability and expansion, and funding were raised. One workshop, which focused on a small organic farm in Massachusetts, dealt with the issues and the possibilities of leasing small parcels of land to expand a farming operation to ensure financial and environmental sustainability. This was a well-attended workshop of 30 farmers, and the overwhelming interest in the topic suggests that land security, especially for new farmers who are dealing with land leasing, is a relevant and imminent concern for farmers beyond Rhode Island. Another experience at the Local Food Forum echoed this concern and issue, as well as identified the need for increased funding for sustainable agriculture research in the region.

Because sustainable farming is growing throughout the Northeast and farmers are running into similar financial and technical support issues that farmers face in Rhode

Island, my forthcoming recommendations may have broader implications reaching beyond Rhode Island sustainable agriculture. Sustainable farming operations seem to have great momentum within the Northeast, and the heavy emphasis on networking through these conferences provides a critical tool for sustainable farm viability. Still the overarching impression I got from these conferences was that sustainable agriculture is growing rapidly and with extensive support can provide food and many other benefits to urban, suburban, and rural communities throughout the Northeast.

Analysis and Recommendations

Throughout this research I have returned again and again to my original thesis question and the hypotheses that accompany it, to ensure I have thoughtfully engaged with my topic and research. The results of my research support several of the hypotheses I put forth in chapter one, and here I will present the key findings of my research within the framework of my hypotheses. Because my recommendations are directly linked to key findings, I will present my recommendations as they pertain to specific findings. For a summary of my key findings, please reference table 7 below.

Subsidy Programs: Conservation Subsidies

It became clear throughout my subsidy research and questionnaire that farmers in Rhode Island tend to use other technical assistance, property tax relief, and alternative grant programs more than they turn to federal subsidies. In addition only 52 farms of 858 farms, or 6%, utilized federal subsidies this past year in comparison to nearly 300 farms, or 35%, who applied for the FFOS tax reduction program⁵⁶. Therefore one of my key findings, which confirms my first hypothesis, is that Rhode Island farmers are generally not heavily-dependent on subsidies generally. Furthermore, of the three types of subsidies available, they are least likely to use commodity subsidies. Related to this was another important finding that farmers felt conventional subsidies could not offer them long-term security. These two key findings alluded to a general distrust of USDA programs and suggest that farmers are not likely to begin using conventional subsidies in the state. This is important, especially when looking at the future of sustainable agriculture, due to the tension that exists with conventional commodity programs, and the principles inherent in

⁵⁶ EWG's Subsidy Database, Rhode Island Summary Data. DEM FFOS approved landowner list, provided by Stephen Volpe 1/28/2008.

sustainable agriculture⁵⁷. What is promising is the connection between increased funding for NRCS conservation programs, the prominent use of these programs among many of the sustainable farms involved in my study, and the high level of awareness farmers had established about conservation programs. Interestingly, NRCS is a USDA subsidiary, but many farmers did not connect the issues they had with conventional subsidies and the USDA with the NRCS and the conservation programs they manage. Of the subsidy program types--commodity, disaster, and conservation--the conservation subsidies are the most focused on establishing long-term systems that improve the surrounding environment. This is an important component of the environmental pillar of sustainability, which makes this program incredibly supportive of farmers who are working to be more sustainable.

Despite the resulting environmental improvements from the utilization of conservation subsidies, many new small-scale sustainable operations do not know about NRCS programs or believe they do not qualify⁵⁸. They do not necessarily think to contact the NRCS to address issues on their farm. Therefore, my first recommendation is for the NRCS to do more outreach work, particularly to new, small-scale and urban farms and to emphasize this type of subsidy use in the state above other types of subsidies. Eric Scherer from the NRCS identified this as an issue that the NRCS is seeking to address, however, he noted it has been a huge challenge. He declared that the “NRCS needs to continue to get these new sustainable farms in the system” and plans to visit many of these new farms in this upcoming season. Funding for this recommendation will come directly from the NRCS, as they have already committed themselves to “using federal

⁵⁷ For instance, mono-cropping, whole sale to national and international markets, no focus on community building and research to improve surrounding environment.

⁵⁸ Finding from interviews

funds to secure small farms in Rhode Island”⁵⁹ and want to extend that possibility to sustainable farmers. Implementation of this recommendation would likely increase demand for conservation subsidy money at the state level and would help acclimate “new users”⁶⁰ to the state programs and available grants.

Funding for Organics Research

With agriculture grossing over 100 million dollars per year, pumping 48 million dollars directly back to the Rhode Island economy,⁶¹ it is important to support innovation and entrepreneurial ventures within the field to ensure farms are able to meet the demands of their customers. These include the demand for agro-tourism, the “farm experience,” and no-pesticide/organic food products which have become more popular over the past few years⁶². In my findings farmers in Rhode Island indicated that they would like to have a greater scope of services available to them, specifically training on how to incorporate organic/no-pesticide crops into their operation.

From this finding I recommend that the University of Rhode Island, Rhode Island’s land grant institution, apply for the Integrated Organic Program grant through the USDA for doing research on organic growing methods in Rhode Island. This grant could be used to address a diversity of organic growing issues, such as organic fruit growing and pest control programs for transitional and organic growers. To learn more about the specific award amounts and project types, please see chart below. URI is the appropriate

⁵⁹ Eric Scherer, NRCS.

⁶⁰ This means farms that are on the urban fringe, in urban areas, and/or other small sustainable farms within the state. Eric mentioned that these farms have not been the focus of grants in the past, mainly because they haven’t been applying for them. However, with the increasing number of these types of farm operations within the state, the NRCS sees a need to focus in on these farms.

⁶¹ Donald Carcieri. Speech given for Rhode Island Agriculture Day. May 22, 2007. Also found DEM (2008) Agricultural Division. Agriculture/Marketing and Promotion Unit, Overview.

⁶² As shown by increasing support for local initiatives run by Farm Fresh RI, RICAPE, and figures cited in the their Rhode Island Agriculture Day Brochure, May 22, 2007.

institution to apply and manage these grants because they have already developed a sustainable agriculture program focused on technical support programs, so they have the infrastructure in place to apply and to utilize the grant money most effectively. If URI is unable to manage this program, then I suggest the DEM manage the program as they have the infrastructure to manage grant distribution and management.

Grant Database

Looking beyond USDA conservation grant programs, many farmers expressed concern about the lack of cohesiveness in the grant application process. The shared sentiment among many farmers and agricultural advocates was that the resources to support sustainable agriculture do exist but are not readily accessible to farmers or are not organized in a convenient central location. This finding leads to my second recommendation which seeks to address this issue through the creation of an online grant and loan database for Rhode Island farmers. This database would allow farmers to search for grants available through NRCS, DEM, RICAPE, USDA, and other organizations based on operational and environmental criteria provided by the farmers. It would help address the immediate needs and services required for farmers within the state to take on conservation projects along with other experimental projects that could enrich the information about sustainable agriculture within our region. The focus of this database would be largely on grants to promote sustainable agriculture, such as the Sustainable Agriculture Research and Education (SARE) grants, and the Rhode Island Conservation Innovation Grants to respond to the growing interest in sustainable agriculture statewide.

The organization best suited to manage the database depends on several factors. It became clear through my interviews that Farm Fresh RI and the URI Cooperative

Extension are both considering creating a central database for agricultural grants and services. With the shifting focus of the Cooperative Extension toward vegetable growing and sustainable agriculture coupled with a full-time Cooperative Extension agent, the Cooperative Extension may in the long-term be able to draw a greater number of farmers to utilize the database. However, Farm Fresh RI's website with its database of farms and businesses may prove to be the most popular and accessible site for farmers to use presently. Furthermore, with the expansion of Farm Fresh RI's services into Massachusetts and Connecticut, this service could be offered to a greater number of farms in surrounding communities. I recommend that the Cooperative Extension and Farm Fresh RI collaborate on this project, with management of the database determined by the entity best suited to support information technology (IT) expansion.

The funding for this project would most likely come from a variety of sources. Although not a consistent source of funding, the Farm Viability Grant program managed by the DEM would be an ideal start-up funding source as this project is well within the bounds of the eligibility requirements for this type of grant⁶³. Grants through this program are often given to educational and promotional projects throughout the state. Another promising source of funding would be grants awarded through the Northeast Sustainable Agriculture Research and Education [SARE]. There are several types of grants offered by SARE, but the most appropriate for this type of project would be the Sustainable Community Innovation Grants. These grants focus on projects that support "appropriate growth, improved quality of life, a cleaner environment, and farm diversity and profitability."⁶⁴ For more information about these grants, please see Table 6 below.

⁶³ Refer to the DEM website. To qualify for the grant, there must be at least a 50% compatibility with the stated criteria

⁶⁴ http://www.uvm.edu/~nesare/grants_scomm.htm

Although not an official grant provider, the RI Economic Development Corporation (EDC) may also be a good source of funding for this project. Open space has been defined by the EDC as one of the most important aspects of maintaining quality of life, and farmland is a critical source of open space in the state. With an expressed interest in expanding their small business counseling service to farmers⁶⁵ and the recognition of Rhode Island agriculture as a network of 854 small businesses, agriculture is a growing priority and concern for EDC. The database project would support the long-term viability and environmental progress of these businesses and would contribute to the sustainability of open space in Rhode Island. Therefore, to ensure these lands remain an asset to the economic development of the state through enhancing the quality of life for Rhode Island residents, the EDC would be an appropriate source of funding and support for this project.

Grant Writing Workshop

Beyond identifying suitable grants, many of the farmers involved in my study mentioned having issues with the grant writing process itself. As mentioned earlier, farmers would like the grant writing process to be more cohesive and transparent amongst the various governmental agencies and other agricultural organizations. The confusion associated with different grant criteria often discourages farmers from applying for all the types of grants in which they are interested. Furthermore, with the quick turnaround of many grants⁶⁶ and the limited time farmers have to dedicate to the grant-writing process, writing efficiency is a critical skill for farmers who would like to apply

⁶⁵ Meeting with Stu Nunnery, RICAPE director, 1/25/08.

⁶⁶ Many grants provide funding for short term projects and longer term farm projects often require re-applying for grants or applying for several within the time-span of the project.

for a variety of grants. This leads to another important finding: many farmers find the grant writing process difficult and time-consuming.

As a complementary program to the aforementioned grant database, I recommend that Farm Fresh RI and the Cooperative Extension provide grant-writing workshops for farmers on an annual basis in addition to access to a grant-writing resource center to address this issue. In providing this service the farmers would be able to better work through the technicalities of the grant writing process, which may allow them to apply for a greater number of grants.

These entities would best manage a grant-writing workshop and resource center for several reasons. Because the Extension Service and Farm Fresh would likely be involved in the grant database project, it makes sense to also work with them on this recommendation. Also, Farm Fresh is currently working on attaining a permanent space for a farmers' market, kitchen, and other agriculture-related activities, so they have the greatest potential for providing a space for a grant-writing service center and central meeting point for farmers. In conjunction with finding the space, the Extension service likely has the contacts and resources available to organize a training program and to provide ongoing support for farmers' questions and concerns. Furthermore, with the extensive online resources available through both services, they would also be able to host an online grant "how to" page for farmers to reference during the application process.

Funding for this recommendation, which would provide yearly grant-writing workshops, a writing center with regular hours, and an online grant self-help page, could be funded through several grant programs. However, there are two in particular that fit well with the goals of this recommendation and, on average, award large grants in

comparison to other sources. This would allow for further development of the project and help provide long-term funding for the services provided. The first is the National Research Initiatives Agricultural Prosperity for Small and Medium-Sized Farms. The stated mission of this project, to “improve our understanding of the interactions between the economic and environmental components important to the long-term viability, competitiveness, and efficiency of small and medium sized farms,” is in line with the needs of this recommendation.

SARE also offers a Sustainable Community Innovation Grant which seeks to “forge connections between sustainable agriculture and rural community development” and is available for the Northeast region. Applying for this grant would warrant less of a generalist focus on grant writing and a more in-depth focus on grants facilitating sustainable agriculture, which would complement my recommendation to increase the promotion of NRCS conservation grants, among other environmental sustainability grants. For further grant details, please see table below.

Funding for Cooperative Extension Agent

Generally, most states fund several Cooperative Extension agents through the USDA Cooperative Extension service that specialize in specific crops or management issues. However, Rhode Island has only one Cooperative Extension agent who must manage a variety of programs and address production issues regarding a variety of crops. Kristen Dame, the current agent, depends on grant funding to pay for her position and each year must seek funding to ensure Rhode Island will continue to have a Cooperative Extension agent. The lack of long-term security for this position is problematic, especially because the agent is a highly utilized resource for many farmers, conventional

and sustainable alike, and Kristen in particular is praised as being incredibly knowledgeable and helpful among most farmers I interviewed. Additionally, with the Cooperative Extension's commitment to expanding their services to sustainable and organic farming operations, maintaining this service will be crucial for farmers transitioning to more sustainable operations in the coming years.

To ensure Rhode Island is able to maintain this vital resource, I recommend establishing a permanent position for an Extension agent through the Land Grant Institution, the University of Rhode Island. As a Land Grant Institution, URI receives funding from the government each year to run its Cooperative Extension programs, and the demonstrated need for this position should be considered when budgeting for the Extension programs. Due to the generally small amount of money given each year to this program, which hovers around \$50,000 per land grant institution according to the USDA⁶⁷, the position would not be able to be completely funded by this money. Because nearly 13% of jobs in Rhode Island are directly related to farming in the state⁶⁸, the EDC would also be an appropriate funding source. The EDC's mission is to "strengthen the Rhode Island economy through policies, programs, and projects, which enhance and enrich the business environment for public and private sectors in order to create prosperity for all Rhode Islanders."⁶⁹ Supporting Cooperative Extension would be ensuring the continuing prosperity of those job holders who depend on agricultural sustainability. I recommend the Cooperative Extension meet with the EDC to explore

⁶⁷ Nelson Amendment to the Morrill Act, which provides a permanent annual appropriation of 50,000 per state.

⁶⁸ Rhode Island Department of Environmental Management, 2006.

⁶⁹ <http://www.riedc.com/>

funding options and lobby for greater support from URI to cover the entire cost of employing one full-time Cooperative Extension agent.

Land Preservation Program

In nearly all of my interviews land preservation was identified as a key issue. With development pressures and increasing land values, it is often lucrative to sell off farmland to developers, especially during times of economic hardship or when farmers are looking to get out of the farming industry. According to the USDA the acres in farmland decreased from 65,083 acres to 61,223, or by 6%, from 1997 to 2002, confirming that farmers are indeed selling their land and that the acreage of farmland in the state is declining. Furthermore, many farmers I spoke with mentioned that their children were not interested in farming, and therefore when they were too old to farm, they would either have to sell their land or find another couple or family interested in farming their land. This is an important finding, especially when considering increasing number of farmers leasing land in this area.

To give farmers a resource to post their land in conjunction with providing an online forum for land seekers to find suitable space, I recommend there be an online “land connection” resource used exclusively for land ownership transitions and leasing. This would allow for older farmers to connect with new farmers looking for land, which would help maintain open space and farmland within the state.

Luckily, several different groups are working to create online resources for land transfer and preservation within the state. RICAPE, within its weekly email bulletins, sends updates highlighting local farms that are for sale along with farmers looking to lease land to potential farm owners. Although they are not actively working to expand

this service, it has helped connect new farmers with old farmers in the state. In addition, the Cooperative Extension is working to create a more extensive online program similar to Connecticut's Farm Link program. This program serves as a clearinghouse for the transition between generations of farmers with the goal of keeping farmland in production⁷⁰. It provides resources for new farmers to plan for and acquire their own farmland and on how to incorporate alternative energy into their operation. In addition, the program offers consultations and information regarding estate planning and preservation resources. Through this program farm land owners and land seekers fill out an application that is posted on the webpage, which registered users can browse and use to contact various farmers. Currently the Farm Link program does take Rhode Island offers and requests; however the URI Cooperative Extension hopes to create a new Rhode Island program. Lastly, Farm Fresh RI has just created an online bulletin board for agricultural land transfers, job postings, farm equipment and other farm-related classifieds. This bulletin, created in March of this year, could be an incredible resource if promoted and managed well in the coming months.

Although the development of these individual programs is positive, the relative independence through which they were developed is problematic. With too many disjointed resources, farmers will be less likely to fully benefit from the programs and may not be aware of all the land programs and services available. The programs mentioned above, which include weekly emails, agricultural classifieds, and a more formal land exchange program, would be most effective if pooled into one comprehensive land link site. This would require collaboration between RICAPE, Farm Fresh RI, and the Cooperative Extension in the coming months as each works to develop

⁷⁰ <http://www.farmlink.uconn.edu/>

their land preservation programs. This would allow land owners and seekers to access land information more easily and effectively. Lastly, the collaboration of these groups will allow for extensive advertising and outreach opportunities to a variety of farmers and farm advocates, as each program reaches and services different groups within the state. This will maximize support and use of the site, making it more successful than the current individual efforts to maintain local farmland and open space.

Sustainable Agriculture: Identified Characteristics

Pinning down a more regionally-focused definition of sustainable agriculture was a large component of this research. I obtained different opinions on the components of sustainable agriculture through the interviews and surveys as well as my preliminary research on more generally-accepted and used definitions. As became clear in my results section, there is no real agreement on the exact attributes of “sustainable agriculture” in the state. Many people had similar overarching ideas and some specific characteristics overlapped, but there turned out to be a broad spectrum of characteristics mentioned.

Nevertheless, there were some commonalities that became apparent when addressing the topic of sustainability in interviews and the survey. These generally centered on adhering to a specific mentality toward one’s operation, or rather that “sustainable” is a commitment on the part of the farmer to think about and understand his/her farm in the context of the local economy, environment, and community. This commitment to being “aware”, however intangible the concept is, was mentioned much more often than any specific characteristics and was a concept to which most respondents were already committed. This is a positive finding, as it suggests that most farmers in Rhode Island are concerned with and dedicated to using as many sustainable practices as

possible in their operation. In addition, they may also be more sympathetic to and involved in sustainability initiatives in the future.

Although this “sustainable mentality” was talked about more often than specific farm attributes, many interesting and important characteristics of sustainability were mentioned. Below is a summary of these characteristics. Despite the wide spectrum of the ideas presented, they paint a general picture of what ideas farmers have regarding what sustainability looks like currently, and what it could evolve to be in the future. I chose to use a two tiered model because most farmers indicated a difference between a “truly sustainable system” and a “workable sustainable system” with the resources currently available. Tier one, has less stringent standards and provides a base for what sustainable agriculture is and can reasonably be given the current resources. Tier two focuses on the ideal characteristics of sustainable agriculture. These could be attainable to a variety of operations in the coming years with the increasing support and potential implementation of the recommendations set forth in this paper coupled with other agricultural initiatives in the state.

The purpose of creating this summary is to help farmers and agriculturally-oriented organizations better understand how to support agricultural sustainability in specific areas. For instance, the DEM can use this model to gear grant money to help farmers achieve one of the tier-2 sustainability characteristics. The Cooperative Extension can look specifically at the tier-2 production characteristics and work to provide technical support for farmers transitioning into a system closer to tier-2, or even a farm looking to switch from conventional to tier-1. Having a two-tiered definition gives farmers more tangible benchmarks for making their operation more sustainable, which

was a priority for all the farmers that I interviewed and for most of the farmers who participated in the online survey.

Here it is important to clarify several points regarding this summary which in many ways acts as a series of recommendations. First, this table was not created in hopes that organizations would use it to reshape or change all aspects of Rhode Island farms, specifically conventional farms. However, it was created to provide information regarding farmers' ideas about sustainability that could aid the creation of a new grant program or community program to support sustainable methods. No one farm will likely adhere to all these characteristics, and indeed may only identify with a few of them.

Therefore, my second point lies in the caveat that no farm should be expected to adhere to all these characteristics, and no program in the state should isolate farms that are unable to satisfy to the majority of these characteristics. Farms in Rhode Island are incredibly diverse, and their needs and capabilities are often different. In addition, sustainability is largely the mastery of balance—environmentally, socially, and economically- so a skewed focus on one type of sustainability is, in its nature, unsustainable. Lastly, it is important to mention that for some farming operations, certain characteristics may not be feasible, and therefore should not be applied to them. This table is an attempt at creating a readable, summarized version of a definition that is incredibly dynamic and complicated, so it should be used with caution and with an understanding of the complexities of sustainability issues for different farming operations.

Table 6: Sustainable Agriculture in Rhode Island: A Two-Tied Model

Tier One: The Present		Tier Two: The Future	
Management Characteristics	Production Characteristics	Management Characteristics	Production Characteristics
Sell mostly to local markets with some sales to wholesalers and national markets	Low pesticide use, IPM (especially for fruit growers), certified organic	Sell mostly to local markets, sell to wholesalers and national markets if necessary to maintain a reasonable profit margin	Organic growing techniques, possible organic certification if useful to operation
Diverse crop base with some heirloom varieties and hybridizing	Minimal off-farm materials used for production	Diverse crop base that is focused on maintaining genetic seed diversity	Minimal off-farm materials used for production (same)
Works in collaboration with some state programs and NGO's on marketing, grants, and various research and outreach projects	Many nutrient sources produced on-site with some supplemental supplies provided by off-site sources	Works in collaboration with several state programs and NGO's to increase enterprise diversification and increase farm sustainability. Commitment to invest in local programs	Nutrient sources such as manure and compost produced and used on-site
Willingness to learn about new farming methods	Cover crops and crop rotation sometimes used, looking to use more often	Willingness to learn about new farming methods and pursues funding to test them at farm	Cover crop and crop rotation are essential to operation and used often
Interest and some work with public education and outreach work.	Implementation of some water conservation practices such as drip irrigation and mulching.	Commitment to community involvement in operation through hosting classroom visits, educational tours, demonstrations, and other outreach work	Implementation of several water conservation practices such as drip irrigation, mulching, and tailwater return systems.

Flexible in most aspects of farm life, adapts to changes and needs of farm and community	Use of some machinery and some sharing and borrowing of machinery, but not organized into a cooperative use system. ⁷¹	Flexible in all aspects of farm life, tries to adapt to changes and needs of farm and community	Expand mechanization through cooperative use of machinery amongst area farmers. Increase efficiency while decreasing individual capital investment in machinery
Uses federal commodity subsidy programs only when necessary.	Uses bio-diesel and practices fuel and oil conservation techniques.	Does not use commodity subsidy programs.	Uses biodiesel for most of operation, obtains other energy from renewable energy sources.
Works with volunteers sometimes, but has an interest in doing more work with volunteers and interns.	Uses some season extension practices through use of re-mat, high tunnel production, and/or greenhouses. Sells at winter farmers market.	Hosts volunteers and interns when possible, size permitting.	Uses many season extension techniques and practices. Sells at winter farmers market and other winter venues.
Participates in training programs provided by RICAPE and conferences such as the Local Food Forum and NOFA to learn about new enterprise opportunities.	Minimizes tillage as much as possible and often uses conventional till practices.	Integrates a variety of enterprises such as agrotourism, value-added products, and additional services into operation.	Uses conservation till practices, and no-till where feasible to reduce soil carbon emissions and erosion ⁷² .

⁷¹ This characteristic is aimed primarily at small operations that would not be able to mechanize independently of a cooperative investment. This characteristic is therefore not necessarily useful or efficient for larger operations or for a group of medium sized farms that may have too high of a demand for use of the equipment on a consistent basis.

⁷² U.S. Department of Energy Office Of Science (2006). Less is more: No-till agriculture helps mitigate global warming. Accessed on 12 March, 2008 at <http://www.eurekaalert.org/features/doe/2005-09/dnnl-lim091605.php>

Table 7: Summary of Grant Programs

Name	Type	Max Amount	Who is eligible?	Frequency	Deadline
Farm Viability Grant	State, Department of Environmental Management	\$10,000	Agricultural and educational organizations and associations	Irregular	Proposals generally due mid-February
Integrated Organic Program	National program through CSREES and the USDA	None	Cooperative extension, local governments, community non-profits, producers	Annual	Application due early January
NRI Agricultural Prosperity for Small and Medium-Sized Farms	National program through CSREES and the USDA	\$500,000	Land grant institutions, local governments, nonprofits, individuals, small businesses, higher education institutions	Annual	Application due early June
SARE Research and Education Grants	Regional Grant Program, USDA	\$150,000	Scientists and producers	Annual	Pre-proposals due May 31, 2008
SARE Sustainable Community Innovation Grants	Regional Grant Program, USDA	\$10,000	Community nonprofits, cooperative extension, local governments, educational institutions, planning boards, farming cooperatives, and incorporated citizens' groups	Annual	Proposals due mid-November

Table 7: Summary of Key Findings and Recommendations

Finding	Recommendation	Implementing Entity	Funding Source
Farmers in Rhode Island tend to use other state and community programs more than they turn to conventional subsidies	NRCS should do more outreach work, particularly to new, small-scale, and urban farms and to emphasize this type of subsidy use in the state above other types of subsidies	NRCS	NRCS
Rhode Island farmers are not heavily dependent on subsidies generally			
Farmers felt conventional subsidies could not offer them long-term security			
Many new small-scale sustainable operations do not know about NRCS programs or believe they do not apply			
Farmers in Rhode Island indicated that they would like to have a greater scope of services available to them, specifically training on how to incorporate organic/no-pesticide crops into their operation	URI, Rhode Island's land grant institution, should apply for the Integrated Organic Program grant through the USDA for doing research on organic growing methods in Rhode Island	Cooperative Extension Service	USDA Integrated Organic Program
Farmers expressed concern about the lack of cohesiveness in the grant application process	Creation of an online grant and loan database for Rhode Island farmers	Farm Fresh RI & Cooperative Extension Service	Farm Viability Grant, SARE Sustainable Community Innovation Grant, Rhode Island Economic Development Corporation
Resources to support sustainable agriculture are not readily accessible to farmers and are not organized in a convenient central location			
Many farmers find the grant-writing process difficult and time-consuming	Provide grant-writing workshops for farmers on an annual basis as well as access to a grant-writing resource center	Farm Fresh RI & Cooperative Extension Service	National Research Initiatives Agricultural Prosperity for Small and Medium-Sized Farms, SARE Sustainable Community Innovation Grant

<p>The Cooperative Extension agent must seek outside grant funding each year to fund the agent position. Annual funding is not available through the Extension service for the agent in Rhode Island</p>	<p>Establish a permanent position for an extension agent in Rhode Island</p>	<p>Cooperative Extension Service</p>	<p>USDA annual budget for Rhode Island Cooperative Extension Program, Rhode Island Economic Development Corporation</p>
<p>The Cooperative Extension agent is a highly utilized resources for farmers, conventional and organic, within the state</p>			
<p>Land preservation is a key issue for Rhode Island farms</p>	<p>Create an online “land connection” resource used exclusively for land ownership transitions and leasing</p>	<p>Cooperative Extension Service & Farm Fresh RI</p>	<p>*Program already being considered and developed, continued funding from Farm Fresh RI and Cooperative Extension</p>
<p>There is no real agreement on the exact attributes of sustainable agriculture in the state</p>	<p>Farmers utilize the two-tier model created for this research to integrate goals of sustainability into new programs and grants</p>	<p>All local agricultural programs</p>	<p>n/a</p>
<p>A variety of farms, conventional and organic, utilize programs or are interested in utilizing, programs that enhance sustainability</p>			

Conclusion

Throughout this study I have used a variety of methods to address the question: *to what extent do farmers utilize subsidies, state grant programs, and community programs to enhance the sustainability of their operation?* I have been able to decipher what resources are available, what resources farmers actually use, and what resources should be available to better aid farmers in increasing social, environmental, and economic sustainability. I have found that sustainable farmers need more financial and skill-based resources, especially to address issues of land security, technical training and research, and grant writing. To address these key issues, I have made several recommendations for local agricultural support programs such as the Cooperative Extension and Farm Fresh RI to assist farmers, and have also created a summary of sustainability characteristics to aid farmers and agricultural programs in setting sustainability goals for the future.

It is my sincere hope that through doing this research I have provided useful information for farmers and the general public about the federal, state, and community-based opportunities available to farmers in Rhode Island. In addition, I hope I have conveyed how unique Rhode Island agriculture is in the context of the rest of the United States and the vast potential of our agricultural system. Ultimately, this work serves as a starting point for future work to increase sustainability initiatives within the Rhode Island farming community, and to encourage others to learn about and appreciate the farmers that grow the food that nourishes our bodies each day. Kevin Durning, from Riverside Farm said it best when he stated, “The only reason people [farm] is because they love to do it.” Supporting a livelihood that protects our open space, our communities, our health, and our wellbeing is one of the most important things we can do for ourselves, and for Rhode Island.

Appendix 1

Interview Questions- State Agencies, Departments, and NGOs

General

- 1) What programs does _ have in place to assist farmers in maintaining and experimenting with sustainable methods?
- 2) Where does _ “fit” into the RI agricultural community (liaison, educator, etc.)
- 3) How do you feel sustainable farming fits into the overall goals of _?
- 4) How do you define “sustainable”? Why have you chosen this definition?
- 5) What programs do you see _working on in the future to further support small scale farming in the Northeast? Do you have money available for conservation subsidies or farmer grants?
- 6) How many total years of experience do you have working with _?
- 7) What has been your specific focus in your work with the RI “food” community?
- 8) Do you feel that there are adequate financial and skill oriented resources available in Rhode Island for farmers using sustainable methods?
- 9) What does sustainable agriculture mean to you in terms of production methods?
- 10) Do you feel that community provided labor/financial support/creative support is necessary for a successful sustainable farm?
- 11) What other factors do you think contribute to a successful sustainable farming operation?
- 12) Do you feel these factors are regionally focused or do they apply generally to the sustainable farming community?
- 13) Are you satisfied with the grant programs available to sustainable farmers in Rhode Island?

- 14) What changes to the 2007 farm bill do you think would be most beneficial to sustainable farmers?
- 15) Do you feel that extra financial support for Rhode Island sustainable farmers is needed?
- 16) Where do you see the future of the agricultural community in RI over the next few decades? Increase in urban decrease in rural? Focus on micro-markets vs. general markets ,etc.

Appendix 2

For online survey results, please see attached CD.

Appendix 3

- 1) How many total years of experience do you have farming? ____
- 2) How many total years of experience do you have doing your current (sustainable) operation? ____
- 3) How many years has this farm been in operation? ____
- 4) How many years has this farm been organic/chemical free/integrated pest management system? ____
- 5) What is the total number of acres in production on your farm? ____
- 6) Of those acres, how many are involved in the sustainable farming operation? ____
- 7) What types of crops are grown/raised on your farm?
 - A. Mixed Vegetables ____
 - B. Commodity ____
 - C. Fruit ____
 - D. Livestock ____
 - E. Specialty (i.e. flowers, honey, value added goods, etc) ____
- 8) Why do you believe _____ is a good farming method? What motivated you to adopt this farming method?
- 9) Do you feel that there are adequate financial and skill oriented resources available in Rhode Island for farmers using sustainable methods?
- 10) Do you utilize grant and volunteer programs available in your community for support in your farming operation?
- 11) If so, which ones? What skills/resources do they offer?
- 12) What does sustainable agriculture mean to you in terms of production methods?
- 13) Do you feel that community provided labor/financial support/creative support is necessary for a successful sustainable farm?
- 14) What other factors do you think contribute to a successful sustainable farming operation?
- 15) Do you feel these factors are regionally focused or do they apply generally to the sustainable farming community?
- 16) Do you utilize state grant programs or farm subsidies?

- 17) If so, which ones:
- 18) What incentive do these programs provide? (i.e. money for financial viability, incentive for environmentally friendly practices, supplies/ability to do research on farm, etc.)
- 19) Are there particular subsidies that you utilize exclusively, and others that you do not apply for?
- 20) Why do you apply for only these particular subsidies?
- 21) Do you utilize aid such as tax subsidies or other grant programs outside the scope of farm subsidies to make your farming operation financially viable?
- 22) Are you satisfied with the grant programs available to sustainable farmers in Rhode Island? (Does the DEM and NRCS adequately support farmers with their programs and grants)
- 23) What changes to the 2007 farm bill do you think would be most beneficial to sustainable farmers?
- 24) Do you feel that extra financial support for Rhode Island sustainable farmers is needed?
- 25) What do you think would need to change (a new organization, greater influence and involvement of DEM and NRCS) in RI to ensure farming remains viable in the future?

Appendix 4

Top Ten Recipients of Subsidies in Rhode Island from 1995-2005

Rank	Recipient	Location	Total USDA Subsidies 1995-2005
1	Confreda Farms And Produce	Hope, RI 02831	\$567,648
2	Alfred P Defazio	Cranston, RI 02921	\$333,863
3	Cottrell Homestead	West Kingston, RI 02892	\$253,927
4	Brook Knoll Farm	Hope Valley, RI 02832	\$193,895
5	Tomaquag Valley Farm	Bradford, RI 02808	\$181,512
6	Wrights Dairy Farm Inc	North Smithfield, RI 02896	\$168,983
7	David S Frerichs	Warren, RI 02885	\$101,500
8	Louis Escobar	Portsmouth, RI 02871	\$100,172
9	Confreda Greenhouses	Hope, RI 02831	\$98,688
10	Perreault Farms Inc	Hope Valley, RI 02832	\$87,336
11	Frank A Panciera	Westerly, RI 02891	\$86,960
12	Joseph F Dutra	Jamestown, RI 02835	\$84,546
13	Raymond J Polseno	Cranston, RI 02921	\$82,236
14	John F Bettencourt	Tiverton, RI 02878	\$79,457
15	Newport Vineyards & Winery LLC	Middletown, RI 02842	\$77,672
16	Harbet Farm	Wakefield, RI 02879	\$68,371
17	Washington County Turf Inc	West Kingston, RI 02892	\$67,113
18	Wishing Stone Inc	Little Compton, RI 02837	\$66,021
19	O'farrell & Sons LLC	Providence, RI 02906	\$63,860
20	The Bailey Farm Gen Partnership	East Greenwich, RI 02818	\$62,698

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