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Inaugural Issue
Volume 1, Issue 1 / August 2010

Special Topic:
Growing New Farmers

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Cover: Natalie Soghomonian of Soghomonian Farm in Fresno, California, shows off her family's organic grapes. Natalie is the third generation of her family to produce these grapes and hopes one day to take the reins of this highly successful family business.

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Welcome — and Thanks To So Many!

DUNCAN HILCHEY

Published online August 2010

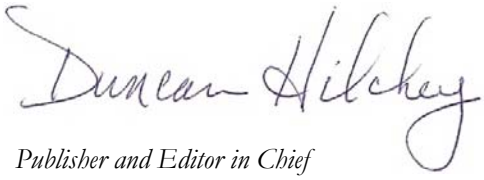
Welcome to the ***inaugural issue*** of the *Journal of Agriculture, Food Systems, and Community Development!* JAFSCD is an international, online, peer-reviewed journal that focuses on agriculture and food systems and bridges the interests of development professionals (including activist farmers and businesspeople), educators, consultants, and the academic community. While kindred journals focus on critical sustainable food production practices, community food security, and the sociology and political economy of food and agriculture, there has not been a journal supporting the community of practice that is rapidly integrating and evolving around these issues. We look forward to fostering an applied research literature where these interests meet — and may sometimes collide — and the nascent field of agriculture and food systems as a whole advances.

It has been about a year since we completed a survey to gauge interest in this journal, gathered input, and announced our first call for papers. We knew from the beginning we had our work cut out for us. For the authors in this issue, time has virtually stood still as we fussed over details. For those of us in the publishing office, it has been whirlwind race to get to this point. Yet there is still much to do; even as we work on the second issue, we also are planning enhancements to the AgDevJournal website as well as the journal's companion website, soon to be launched — AgDevONLINE. While we're still in our start-up phase, it sure feels good to get this first issue online! Access to the journal will be free until October 1 to give everyone a chance to try it on for size. However, please support the journal by subscribing right away, and share it with colleagues.

The launch of JAFSCD would not have been possible without the countless hours contributed the members of our advisors and editorial committees. These folks have made a leap of faith to work with New Leaf to launch JAFSCD, and they made that leap with a passion for the work that has inspired us to produce the best journal we could. There are a several people I would like especially to recognize: **Sandip Banerjee** of Hawassa University, Ethiopia, for being our top reviewer; **Ken Meter** of the Crossroads Resource Center who helped develop our "accessible scholarship" concept; **George Chronis,** of Express Academic Services and CyberSense.US, for his assistance in developing our websites and his remarkable technical support over the past year; and publishing consultant **Joachim Engelland**, who provided superlative expertise in business planning. I also want to thank the authors of this inaugural issue for their trust in this new publishing entity, and their patience and persistence. We put them through the wringer as we worked out our processes as well as tampered at length with their manuscripts in our search to find the elusive balance between the needs and interests professionals and academics in food systems and agriculture development — what we refer to as

accessible scholarship. Finally, I want to express my deep gratitude to managing editor **Amy Christian,** whose mark has been made on each and every paper in this inaugural issue. She is a remarkable talent and partner in running JAFSCD, as authors and reviewers are getting to know.

Enjoy the inaugural issue and please feel free to contact me with suggestions and constructive criticisms: duncan@NewLeafNet.com.



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IN THIS ISSUE

DUNCAN HILCHEY

Journal of Agriculture, Food Systems, and Community Development inaugural issue and special topic focus: *Growing Farmers*

Published online August 2010

I recently taught a 2-hour workshop on mapping a regional food system network for a new group called the Groundswell Center for Local Food and Farming here in Ithaca, New York. More than a beginning farmer program, Groundswell helps youth and adult learners develop the skills and knowledge they need to build sustainable local food systems. In this particular class of college students I saw tremendous enthusiasm, intelligence, and righteousness coupled with just a touch of naiveté. They hung on every word, they asked great questions, they relished the opportunity to map the relationships between all the players in our Finger Lakes regional food system. It was fun, and everyone, myself included, learned something. Yet as I drove home reflecting on the workshop, the feeling was rather bittersweet as I considered the myriad challenges that await these young idealists. Whether they end up working on or owning a farm, starting a cheese-making business, founding a community nutrition program, making a policy argument in a legislative office, or running a nonprofit organization, the global food system is still largely stacked against them.

But was I projecting my own experience of the previous 28 years on them? When I got home I checked my email and there were three JAFSCD manuscript submissions that had just arrived from Africa, Canada, and the U.S. — reminding me that things have actually changed dramatically since I was a VISTA volunteer back in 1982 working for the Central New Hampshire Agricultural Marketing Project. And it dawned on me that these future activists, leaders, farmers, and nutritionists are hitting their stride at just the right time, when both popular opinion and government policy are increasingly on their side. Indeed, as a publisher I have the privilege of hearing about things going on around the world and I can tell you that from where I sit, it is only a matter of time. The local food movement is successfully engaging the mainstream, crafting innovations, influencing policy, and more. It is great to see young folks eagerly considering how they can build a life around the movement. I have faith that, despite the challenges, many will succeed in their careers, as well as in pushing us just that much closer toward a sustainable future. We are lucky that programs like Groundswell are in a position to incubate new sustainable farmers, as well as new talented agriculture and food system development professionals.

Special Topic Call for Papers: *Growing New Farmers*

The topic for this first issue, "Growing New Farmers," was chosen based on response to a poll we conducted on the JAFSCD website. The poll showed that beginning farming issues are a huge priority across the board. Replacing retiring farmers with individuals who can effectively navigate complexities of today's farming and food systems is of growing concern around the world. The response to the call was phenomenal. In this issue we present papers by **Matt Lobley, John R. Baker,** and **Ian Whitehead**, who examine several studies to compare farm succession and retirement in North America and Europe. **Kim L. Niewolny** and **Patrick T. Lillard** review the wide range of adult agricultural education opportunities for beginning farmers and suggest that they are taking on new forms and patterns to support and sustain a new generation of famers. **Jan Perez, Damian Parr,** and **Linnea Beckett** provide us with an evaluation of the 43 year old Apprenticeship in Ecological Horticulture program at the University of California, Santa Cruz; **Marcia Ostrom, Bee Cha** and **Malaquías Flores** describe their experiences providing alternative strategies in sustainable farming education to Hmong and Latino new farmers; and **Gilbert Gillespie** and **Sue Ellen Johnson** explore the factors for success in a study of farm start-ups in the Northeastern U.S.

Open Call for Papers

In addition, we offer several applied research papers on a range of agriculture, food systems, and community development topics. **Carmen Byker, Nick Rose,** and **Elena Serrano** studied the experiences of 19 adult volunteers on a one-month 100 mile diet. **Christopher Sneed** and **Ann Fairhurst** applied an activity system map to a farmers' market to suggest how it might improve strategic planning and long-term viability. And finally, **Brannon Denning, Samantha Graff,** and **Heather Wooten** identify a potential legal barrier to local food marketing of which practitioners should be aware.

Commentary

This inaugural issue also features a commentary ruminating on "Why Aren't There Any Turkeys at the Danville Turkey Festival?" by **Howard Sacks**, professor of sociology at Kenyon College. Howard has seen dramatic change in the agriculture community in his corner of Ohio and is doing some innovative work with students at Kenyon to bring local food to campus and to help build a regional food network.

Columns

In this inaugural issue we are introducing regular columns by four distinguished authors: two agriculture and food system professionals (**Joseph McIntyre** of the Agriculture Innovations Network, and **Ken Meter** of the Crossroads Resource Center), and two scholars (retired economics professor **John Ikerd,** and **Rami Zurayk** of the American University of Beirut). The purpose of these columns is to bring you, our reader, some fresh ideas and stimulate discussion on current issues. We invite you to comment on the columns in the JAFSCD Forum.

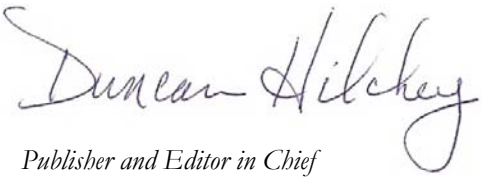
- *The Economic Pamphleteer* by John Ikerd
- *Views from the Food System Frontier* by Joseph McIntyre
- *Metrics from the Field* by Ken Meter
- *Global Views or Local Food Systems* by Rami Zurayk

Book Reviews

Finally, we offer three insightful reviews of books. We select books on timely subjects that are likely to be of interest to both professionals in the field and the academic community.

- *The Town That Food Saved: How One Community Found Vitality in Local Food* by **Ben Hewitt,** reviewed by **Valerie Imbruce.**
- *The Call of the Land: An Agrarian Primer for the 21st Century* by **Steven McFadden,** reviewed by **Kim Niewolny** and **Nancy Franz;**
- *Closing the Food Gap: Resetting the Table in the Land of Plenty* by **Mark Winne,** reviewed by **Cornelia Butler Flora;** and

We hope you relish the work of your colleagues in this inaugural issue, and plan to share your work and also share this new publication with your colleagues.



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Why aren't there any turkeys at the Danville Turkey Festival?

Commentary by Howard L. Sacks, Kenyon College

Published online August 2010

Twenty-five years ago, my in-laws came to visit us in central Ohio. They were city folks from Philadelphia who couldn't understand why my wife, Judy, and I had moved to the country.

We timed their visit to coincide with Knox County's Heart of Ohio tour. Each fall, this self-guided driving tour along the area's scenic back roads features stops at farms, grange halls, and other sites that offer a glimpse into local rural life. This particular tour included a local turkey farm outside the town of Danville. Danville was well known for its many turkey operations; we were always thankful that it was easy to get a fresh bird for the Thanksgiving table.

It remains a family story to this day of how Grandpop Irv felt compelled to let out a gobble during our visit, only to generate a vocal response from what seemed like thousands of birds in the adjacent field.

This paper was presented at the conference "Fast Food World: Food and Globalization in the 21st Century," at Bowling Green State University on April 11, 2008. An abbreviated version of this paper appeared in 2008 as "We Learn What We Eat: Putting Local Food on the Table and in the Curriculum," *The Chronicle of Higher Education 50*(13):A31–32.

Howard L. Sacks teaches sociology at Kenyon College in Gambier, Ohio, where he has also served as senior advisor to the president and provost. As director of the Rural Life Center, Dr. Sacks coordinates educational, scholarly, and public projects to ensure the vitality of local rural life. In addition to two books, his publications have appeared in a wide variety of scholarly journals, magazines, and newspapers. Dr. Sacks has served on panels of the National Endowment for the Arts and the National Endowment for the Humanities, and he regularly consults with organizations and communities nationwide on rural development and culture. He is the recipient of over 40 grants and fellowships for scholarly research and public programs, for which he has received numerous state and national awards. Dr. Sacks currently serves on the governor's Ohio Food Policy Advisory Council to build an indigenous agricultural system that addresses the food needs of all Ohio residents. He raises sheep with his wife, Judy, on their farm in Gambier. For more information on the Rural Life center, visit http://ruralllife.kenyon.edu.

A quarter century later there's barely a gobble to be heard around Danville, and the only talk of turkeys is at the annual Danville Turkey Festival. Why aren't there any turkeys at the Danville Turkey Festival? The answer is simple enough. The local processing plant moved 200 miles north into Michigan, in keeping with the trend toward centralization so characteristic of the current global food system. For local farmers, 200 extra miles was the difference between profit and loss, and so turkey farming disappeared.

The story of Danville's turkeys can be told about any number of farm products in hundreds of agricultural communities throughout Ohio and the Midwest. The general pattern evident in Knox County is commonplace. Farmers have shifted from diversified operations producing for regional distribution to a few cash crops for a global market. To justify the increasing use of technology and other farm inputs, farm size has increased, and the number of farms has decreased. Family farmers find it difficult to compete with highly integrated industrial agriculture, and most take off-farm jobs just to make ends meet. Young people can't afford to get into farming in the first place; today, the average farmer in Knox County is 58 years old.

These changes raise serious concerns about the future of our food supply nationwide, as fewer farmers must provide food for a growing population. We increasingly put our faith in new technologies that promise ever-increasing yields and in global food sources affected by an unstable political climate. But the globalization of our food supply has profound implications as well for the communities that have long supported agricultural life.

In the broadest sense, we can think of this effect as involving the loss of rural character. Rural character permeates every aspect of our agricultural communities. We can see it plainly on the landscape. Drive along any township road in Knox County, and you are surrounded by green space — rolling fields and pastures, punctuated by the occasional farmhouse and unique cluster of outbuildings. Sitting on the front porch of my farmhouse at night, I'm surrounded by absolute silence, save the occasional sound of nature, and absolute darkness, save the heavenly bodies in the evening sky.

But along the next road west of my place, the fields have been split into five-acre lots, and the lights from modular homes and starter mansions now obscure the stars at night. The new inhabitants don't think much of the scent of farm life, or the way machinery runs day and night at harvest time.

Even now, much of the county economy relies on agriculture. The grain silo at the farmers' co-op remains the tallest building in the county seat; for the moment, corn prices are high with the demand for ethanol. Implement dealers still sell and repair tractors, hay elevators, and bush hogs. But here in Ohio's sheep capital, hundreds of animals are now sold at a livestock auction that once sold thousands every Wednesday.

Rural character also denotes a certain kind of sociability, an intimacy rooted in connection to place. Old-time farmers speak of knowing the inside of everyone else's kitchens a generation ago, when neighbors would take dinner together as they moved from farm to farm in collective labor to bring in the harvest. Neighbors still gather at the grange hall, located just a half mile up the road. But like the farm population generally, grange membership is aging and in rapid decline.

Knox County's agricultural heritage also embodies a distinctive set of cultural values: neighborliness, hard work, and independence. When Judy and I first moved onto the farm, a neighbor came up to the house to introduce himself. "Folks in these parts believe that what you do on your farm is pretty much your own business," he said. "But if you ever need help, don't hesitate to call me." Today, longtime residents don't quite trust newcomers who won't bother to get to know their neighbors and treat the area as a bedroom community or weekend retreat. For their part, new residents often find their older neighbors a bit standoffish.

It's easy to romanticize the physical beauty, honest labor, intimacy, and solid values associated with rural character. We can see nostalgia for that way of life in the village festivals that glorify farm life even as it's disappearing — Danville's Turkey Festival, Fredericktown's Tomato Festival, and the Centerburg Old Time Farming Festival. Cynics in our midst argue that family farmers fail because they're just bad at business, or that the centralization of agriculture is no different than the economic forces that replaced the family hardware store on Main Street with the big box store on the outskirts of town.

The reality, of course, lies somewhere in between the romantic and the cynic. The globalization of our economy is a powerful force, though the outcome of that force is not as inevitable as the cynic would have us believe. And the romantic ideal speaks to a deeply experienced world, one that provides a critical perspective against which we can assess current realities.

The truth is that Knox County is engaged in a struggle between a century old way of life and profound changes associated with the globalization of our food system. The reality is further complicated by exurban sprawl associated with the expansion of metropolitan Columbus. Land developers now offer farmers five-to-ten times the agricultural use value of their land. It's little wonder that an aging farmer, land rich and money poor, whose children have moved away for better economic opportunities, responds to such an offer by deciding it's time to retire in town.

To their credit, Knox Countians have not taken this situation lying down. In the late 1990s, some forward-looking citizens saw the changes coming our way, and they decided to do something about it. They convened a series of public discussions on the future of our community; focus groups replaced conversations in the grange hall or after church. What did we value in our community and wish to preserve? How might we direct the changes that seemed inevitable in such a way as to improve things?

This discussion built upon an earlier initiative of Kenyon College's Rural Life Center, which I direct. In the Family Farm Project, students visited farms, livestock auctions, and implement dealerships, interviewed dozens of farm families, and took hundreds of photographs that documented agricultural life. We fashioned these materials into a series of public projects — radio series, school curricula, and articles in the local newspaper — to stimulate a broad discussion about the place of family farming in community life.

Overwhelmingly, Knox Countians affirmed the need to preserve rural character, and they asserted the importance of family farming to achieving that goal. More than a romantic vision, maintaining a vital agricultural community was now officially endorsed as part of the county's long-range plan.

The question, of course, is how to do it. Communities have employed several tactics; the first involves the use of protective zoning. The idea is to pass zoning regulations that reserve rural farmland exclusively for agricultural use, prohibiting residential development or other uses that would compromise family farm operations.

I served as chair of my township zoning commission for five years, and I still have the scars to prove it. While your intentions might be noble, there's no faster way to alienate your neighbors. The reason is clear: However much rural residents want to preserve community character, most are strongly opposed to any assault on their private property rights.

Interestingly, some of the most vocal resistance to protective zoning comes from farmers themselves. Let's say you have a 200-acre operation, which is the typical farm size in Knox County. The agricultural use value of the land is $2,000 per acre — that's what it's worth as productive farmland. A developer comes along and offers you $10,000 an acre for your farm; that's $2 million, a handsome retirement fund. So the farmer at the zoning meeting asks: "If we pass this new zoning regulation, I can't sell my land to the developer. But my neighbor just down the road, who happens to live in the

next township, can sell out and make all that money. Is that fair?" It's a reasonable question.

A second approach to preserving farmland involves the purchase of development rights. Continuing with our example, if the difference between the agricultural use value and the market value for development is $8,000 per acre, we'll pay the farmer that difference in exchange for the rights to develop that land. These development rights will be kept, presumably in perpetuity, by a community land trust like Knox County's Owl Creek Conservancy.

This approach certainly overcomes a major objection to protective zoning. Farmers get that development value for their land up front. They can continue to farm as long as they want, and then they can sell their land for agricultural use. But a problem exists with this strategy as well. If the development rights for our hypothetical farm amount to $8,000 per acre, it would cost $1.2 million to protect that single 200-acre operation. There are over 1,200 farms in Knox County. Where would the money come from to protect so many family farms? As any public official will tell you, if there's one thing rural residents like even less than restrictions on their private property rights, its new taxes.

Despite the difficulties, these strategies have been put to good use on a limited basis. Protective zoning efforts often target prime farmland, and land conservancies focus on farms that lie along an important waterway or that have special historical significance. But there's another problem: Both approaches focus on preserving farmland, rather than on supporting the farming operation. If family farming is not economically viable, nobody will farm; and land preservation efforts will only result in a lot of abandoned, overgrown pastures and fields.

The Rural Life Center offered a third approach. The easiest way to preserve family farming is to enable farmers to make a decent living. From our continuing field research, we've learned that farmers want to farm. In interviews they'll go on at length about the many difficulties involved in farming — the long hours, the dangers, the economic uncertainties. But ask them why they do it, and they'll tell you it's "in my blood." They value the independence of being self employed and the fulfillment that comes from making things grow. Their children often want to stay close to the farm as well. Some get degrees in veterinary medicine or high-tech applications for agriculture so they can return to the communities in which they were raised.

What we proposed was the creation of a sustainable local food system, one that would offer a dependable alternative to the uncertainties of a global market. This system would put a greater share of the food-buying dollar into the hands of the farmer. These dollars would, in turn, recirculate in the local economy, benefiting all businesses. Consumers would receive a greater variety of safe, fresh, nutritious foods. Everybody wins, and it doesn't require new regulations or taxes.

A local food system offers great economic potential. Last year, Knox County residents spent over $130 million dollars on food and beverages. But most of those dollars quickly left the local economy for the corporate headquarters of major supermarket chains. And most the food came from sources far removed from the local foodshed. Capturing just ten percent of these food dollars would represent a new $13 million industry — that's significant economic growth in a rural community. And unlike other industries, a local food system requires no new tax abatements. Rooted as it is in the land, this industry won't move to Mexico or China in ten years.

The idea of creating a local food system has been warmly received throughout the local community, in part, because of current events that demonstrate the vulnerability of our global food system. A decade ago, terms like "E. coli" and "mad cow disease" weren't part of our everyday vocabulary. Few of us feared that global terrorism might disrupt our food supply. And high-priced oil has resulted in rapidly escalating food prices. As a result, more and more people are asking where

their food comes from and finding added value in locally sourced products.

The challenge to building a local food system lies less in gaining enthusiasm for the project than in building the *infrastructure* necessary to link the producer and consumer. To give but one example, Knox County is the largest sheep producer in the state, and one of the very largest east of the Mississippi River. There's a growing demand for lamb among many ethnic populations in nearby Columbus. But the lamb you find in area supermarkets is imported from New Zealand. The development of a global food system has enabled businesses to acquire food from across the planet more easily and more cheaply than it can from the farmer just down the road.

Our effort to change this situation began by forging a direct link between individual producers and consumers. Building on our ongoing work with area farmers, we compiled information on producers who were willing to sell directly to consumers. To this list we added information on the seasonal availability of local foods and the many reasons to buy local. The resulting publication, called *HomeGrown,* is now in its second print edition, with 12,000 copies in circulation. The county extension office maintains a version on the internet.

Convenience is a significant factor affecting consumer food purchases. *HomeGrown* enables people to see what foods might be available in their immediate locale. But we know that consumers are less willing to drive across the county to get a gallon of maple syrup or an organic chicken. So as a next step, we organized a farmers' market on Mount Vernon's Public Square. We selected this location for several reasons. Public Square is a lovely area in the historic downtown district, with a well-kept lawn and plenty of shade trees to guard against the hot summer sun. Like many rural county seats, downtown Mount Vernon has lost much of its economic vitality to those big box stores. Placing the farmers market here gave people a new reason to come into town.

For the first day of the market, some six years ago, we found nine brave farmers who would give it a try. We had no idea what level of interest we would find. To our delight, the farmers sold everything they had in the first twenty minutes, and when they retuned with more goods, they sold all of those, too. Today, the market features 45 farmers and a wide variety of products; and three additional markets have opened in smaller villages throughout the county.

I often send my students to the farmers market to observe what goes on there. They consistently report that while consumers spend about twenty minutes purchasing food, they often remain as much as an hour. Parents play on the lawn with their children, and people visit with friends they don't see at other times during the week. It's just this kind of casual exchange that strengthens community bonds, a sociality that's fundamental to rural character. You're less likely to find this kind of interaction in the cold, fluorescent-lit isles of a mega-supermarket.

Local food guides and farmers' markets enable many individuals to buy locally, and they provide a lucrative market for small-scale producers with specialty items. But to capture more of that $130 million food economy and provide incentives for mainstream farmers to produce for a regional market, institutional buyers must be brought into the system as well.

Getting restaurants, hospitals, and school cafeterias to buy local raises significant new challenges. For example, Kenyon College's food service prepares 2,500 meals each day when school is in session. When the food service director needs 40 bushels of tomatoes, she just brings up a national food distributor on her computer and clicks on a few boxes to place her order. The shipment arrives just when she needs it, and the billing and paperwork are handled automatically. Order after order, she's assured of a dependable supply and a consistent level of quality. And if there's ever a problem, the food distributor carries several million dollars of liability insurance to protect the dining service.

What if she wants to buy local tomatoes? In Knox County, she can now go to a local produce auction, about 25 miles away. Assuming farmers have brought the product she needs, she can spend the morning waiting to bid. Of course, she may have to buy several lots with different varieties of tomatoes, only some of which will be suited to the slicing or dicing required for whatever dish is on the menu. It will be her responsibility to load the product into a vehicle she provides and deliver it to the dining hall. She'll likely have to pay cash, and she'll have to do the paperwork later. And there aren't any locally grown tomatoes in central Ohio after October 1, just four weeks into the semester.

Multiply these difficulties by a hundred food products each week, and you begin to appreciate the challenges of institutional buying in a local food system. But I'm happy to report that after three years, 36% of Kenyon's food purchases are locally sourced, most within the county. The college's new dining hall, set to open this summer, is designed throughout to maximize the use of local foods — the first facility of its kind in the country. The building includes a variable-height loading dock to accommodate farmers' pickup trucks, a flash freezer to quick freeze summer fruits and vegetables for winter use, expanded washing and preparation space for fresh ingredients, and a servery featuring several locations for cooking individual dishes to maximize the value of fresh, local foods.

Kenyon's dining service initiative has served as an important case study, teaching us lessons that we can use to enable other institutions to buy local. To address the growing demand for local foods, we're developing a local food center that will include a licensed commercial kitchen to create value-added products that are sought as specialty items by neighborhood grocery stores. A flash freezer will extend the seasonal availability of many products, and cold storage will enable farmers who need sufficient inventory to sell direct to individual or institutional buyers. We hope to share this facility with organizations that serve the neediest members of our community. Through an arrangement between these groups and local farmers, foods that go unsold on the retail or wholesale market could be purchased at or near cost by these service organizations, providing quality fresh food for the hungry and establishing an economic floor for area farmers.

We're also in the process of converting a warehouse in the historic downtown into a year-round local food market, in response to the growing popularity of the summer market. Central Ohio Technical College has opened a new campus just one block north of the warehouse, and the Mount Vernon Nazarene University will open facilities for its art department, with a public gallery space, just across the street. These institutions will bring 1,000 people downtown each day, and they'll get hungry.

Education continues to play a significant role in all our activities. Unless people think about where their food comes from and why it matters, whether or not their food is locally sourced will be of no concern. Working with students and faculty throughout Kenyon College, we've created a wide variety of public projects that educate the community about local foods as we educate our students into the community. *Foodways* featured a series of essays and accompanying material about the many ways food touches local life, from hunting to ethnic foods, eating out to feeding the hungry. The series ran throughout the summer in the county newspaper to complement the weekly farmers market. A promotional film — *Where Does Our Food Come From?* — explores the value of buying local; it's shown in schools, to civic organizations, and on the local cable channel. And an extensive exhibit by the same name, that traces food from farm to table, has traveled across Knox County to community events like the Danville Turkey Festival.

Efforts like these require broad collaboration among civic groups, farm organizations, businesses, and educational institutions. Knox County's Local Food Council provides an effective forum to address the many issues we encounter in furthering this initiative. Perhaps as importantly, by bringing together individuals representing every part of the food system — farmers, processors, institutional

buyers, and consumers — we've begun to reintegrate a food system that has become increasingly fragmented and opaque to everyone.

I think educational institutions like Kenyon College have a pivotal role to play in such efforts. Ohio is blessed with many small colleges and universities, situated in or near rural areas. They constitute a valuable resource for addressing the needs and interests of our agricultural communities in ways that simultaneously further their educational mission. For too long, agriculture has been understood as a subject suitable for study only in agricultural programs at large land grant universities. Until very recently, these programs relied exclusively on technological innovations and new economic models to address the challenges facing today's farmers.

In contrast, liberal arts colleges, dedicated as they are to holistic education, appreciate the inextricable link between healthy agriculture and healthy communities — of the necessity of putting "culture" back in "agriculture." Today at Kenyon, students examine rural land use policies in a course on practical issues in ethics, explore the significance of food to Asian cultures in a course called "Rice," and examine the dynamics of rural ecosystems through farm internships as part of a course on sustainable agriculture.

Evidence already exists that the next generation of farmers may be drawn from these students and others like them. More broadly, any education that seeks to prepare young people for life must engage the many issues surrounding food, which is the source of life itself. All of us must recognize that the decisions we make each day about what we eat represent an important civic act, one that profoundly affects us as individuals and as a community. If we become more thoughtful consumers, places like Danville stand to retain their economic and cultural heritage. 

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THE ECONOMIC PAMPHLETEER
JOHN IKERD

Rethinking government policies for growing farmers

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"We can't solve problems by using the same kind of thinking that created them." At no time have these oft-quoted words of Albert Einstein been more appropriate than in addressing the problems of today's farmers. Between 1940 and 1990, with the industrialization of agriculture, the number of farms in the U.S. dropped from more than six million to just over two million. This drop in the number of farms has since leveled off, but the ability of farms to support farm families has continued to decline. Over the past couple of decades, around 90 percent of farm family income has come from nonfarm sources.

*Why did I name my column **"The Economic Pamphleteer"?** Pamphlets historically were short, thoughtfully written opinion pieces and were at the center of every revolution in western history. Current ways of economic thinking aren't working and aren't going to work in the future. Nowhere are the negative consequences more apparent than in foods, farms, and communities. I know where today's economists are coming from; I have been there. I spent the first half of my 30-year academic career as a very conventional free-market, bottom-line agricultural economist. I eventually became convinced that the economics I had been taught and was teaching wasn't good for farmers, wasn't good for rural communities, and didn't even produce food that was good for people. I have spent the 25 years since learning and teaching the principles of a new economics of sustainability. Hopefully my "pamphlets" will help spark a revolution in economic thinking.*

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In spite of all of the political rhetoric about supporting family farms, government farm programs have consistently subsidized the industrialization of agriculture. As a consequence, farm programs have contributed both directly and indirectly to the demise of family farms. Subsidized, standardized, routinized, and simplified farm management has effectively coerced or forced fewer farmers on larger farms to produce more food at ever lower economic costs. However, these same strategies are directly responsible for the lack of agricultural sustainability. We can't solve the ecological, social, or economic problems of agriculture today with the same kind of thinking that created them.

Official government estimates for the current stimulus program exceed $90,000 in government funds per job created. Why not subsidize the creation of new, permanent employment for farmers instead?

We need a new kind of farmer to tackle the challenges of farming today. Sustainable farmers must manage diverse crop and livestock systems in ways that restore soil fertility, manage pests, and sequester solar energy, rather than relying on synthetic fertilizers and pesticides and other fossil-energy–based inputs. Sustainable farmers must manage their farms in ways that reconnect them in positive relationships with their neighbors and their customers. Sustainable farming is inherently management intensive, meaning that it will take more farmers on smaller farms to feed the nation. The food may not be as cheap, but sustainably produced food will be worth paying the full environmental, social, and economic costs. And in order to grow more crops and livestock more sustainably, we also must grow more sustainable farmers.

As stated in the inaugural call for proposals for this journal, "Over the last two decades, a myriad of programs have been started to stem [the loss of farmers]." Some of these programs have met with modest success, such as the USDA Small Farms program. Others have only accelerated the decline, such as those subsidizing beginning farmers in conventional commodity production. Government programs to grow more farmers must be based on thinking very different from thinking of the past.

Today's approach to farm policy probably made sense until around the middle of the last century. The manufacturing sector of the economy was growing rapidly and good-paying jobs were readily available for most of those who left agriculture. At that time, many of the negative ecological and social consequences of industrial agriculture were unknown. Neither of those conditions exists today. The good-paying manufacturing jobs have gone to other countries. Unemployment is hovering just under 10 percent, with little prospect for ever recovering the good-paying manufacturing jobs of the past. With growing recognition of the negative environmental, social, and public health impacts of industrial agriculture, farm policies of the past no longer make economic or political sense.

The only legitimate justification for government involvement specifically in agriculture is food security. Farm policies since the 1950s have focused on food security through economic efficiency and international trade. Farmers are subsidized to produce feed grains for export while we rely on food imports for security. Food security based on international markets is not real food security, as many countries discovered with the skyrocketing food prices of 2008. The new thinking would focus farm policy on long-run, domestic food security, through restoring the natural fertility of the land and growing farmers committed to stewardship of the land. As Wendell Berry has written, "If the land is to be used well, the people who use it must know it well, must be highly motivated to use it well, must know how to use it well, must have time to use it well, and must be able to afford to use it well."

How might this kind of thinking reshape farm policy? A quick search of the internet will show that federal, state, and local governments are routinely shelling out subsidies of $30,000 to $50,000 per private-sector job, in their effort to reduce unemployment. Many of these jobs are not new but rather are jobs relocated from one community to another. The subsidies include direct payments, tax abatements, infrastructure, worker training, and other publicly funded economic incentives. Official government estimates for the current stimulus program exceed $90,000 in government funds per job created. Why not subsidize the creation of new, permanent employment for farmers instead? Farm programs could be redirected to create new opportunities for farmers in both rural and urban communities who are committed to staying in those communities and caring for the land. Federal funds budgeted each year for current farm commodity programs could facilitate the creation of at least 400,000 new sustainable farms.

The details of such policies would need to be worked out through a deliberative process involving taxpayers, consumers, and farmers — excluding agribusinesses. Perhaps they would come up with a "New Farmstead Act," a program to establish new farms and farmers in both rural and urban communities. Beginning farmers could be given $50,000 — a no-interest, nonrecourse government loan — for a down payment on a farm. The farmer would have five to 10 years, depending on the nature of the farming operation, to establish a sustainable, commercial farming operation with at least $100,000 in annual sales.

To ensure that farmers are able to "use the land well," the purchase price of the land could not exceed $500,000 — about 100 acres of good farmland in the Midwest, a few acres on the urban fringe, or a vacant city lot. In addition, the principle farm operators would have to earn 75 percent of their total income from the farm in order to validate their personal commitment. The purchase would place an agricultural easement on the land, to protect against later sale for development. After a successful "proving up" period, 20 percent of the loan would be written off each year until the loan were erased. If farmers failed to prove up their farmsteads, their land would be sold to another farmer, or to the government, at no more than the original purchase price.

The intent here is not to propose a specific new program, but rather a new way of thinking about farm policy. Regardless of the details, a dramatic rethinking will be necessary if the U.S. is to grow enough new farmers to ensure the nation's food security.

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VIEWS FROM THE FOOD SYSTEM FRONTIER

Emerging trends, dilemmas, and opportunities in the changing global food system

JOSEPH MCINTYRE

Measuring agricultural stewardship: Risks and rewards

The case for the Stewardship Index for Specialty Crops

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As a process facilitator working exclusively on food system issues, I spend a lot of time on the road talking to farmers and other food system actors about sustainability. The two most frequent comments I hear, particularly from producers, are "what the heck does sustainability mean?" and "if we were not sustainable, we would not be here today."

The dialogue from this point may follow one of several paths. We can try to define sustainability abstractly, and inevitably someone will bring forward a definition that mimics the Brundtland[1] formulation: Sustainability means meeting the needs of the present without compromising the ability of future generations to meet their own needs. Others may say that sustainability is a set of practices, such as organic or biodynamic farming. Still others suggest that it has an ever-shifting end point, never reached and also never fully defined.

In the end, all of these exchanges prove unsatisfying. Without a common understanding of what stewardship means and how it ties to the everyday realities of producers and the communities and environments that the food system depends on, the conversation is just not productive.

For the past 18 months, a coalition of United States–based producers, nongovernmental organizations, and buyers have been trying another approach. What if, rather than trying to define stewardship and sustainability abstractly, we figured out what specific impacts of food production on people and place matter most to good stewardship — and then measure them? (More details are in "Stewardship Index Partners and Funding.")

This is the core goal behind the Stewardship Index

[1] The Brundtland Commission, more formally the World Commission on Environment and Development, developed the first popularized framework for "sustainable development" in the mid-1980s.

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This is the first in an ongoing series of columns by Mr. McIntyre on emerging trends, dilemmas, and opportunities in the changing global food system.

for Specialty Crops[2] (www.stewardshipindex.org), an effort to establish a series of broadly agreed upon "stewardship" metrics for specialty crops supply chains grown in the United States. (See "15 Proposed Stewardship Metrics.") Specialty crops are defined as essentially every food product other than the commodity crops of corn, wheat, soybeans, rice, and cotton.

The participants in the Index development process, who are working on 15 distinct indicators of stewardship, are not debating definitions, but rather focusing on the *performance* that can be measured. This is information that would give producers, buyers, and the public real data on the impacts of the specialty crop sector of the food system on the environment and society.

A metric approach is quite different from a practice-based one, such as certified organic or integrated pest management (IPM). One of the principles of the Index is that sustainability is the sum of the actual *impacts* you generate regardless of the practices you employ. Rather than require specific practices, the Index hopes to inspire a cycle of continuous improvement and innovation in practices based on real data. In the arena of sustainability this approach is particularly critical, because there is still so much we do not know about which particular practices will generate the best overall sustainability results.

The task quickly becomes a technical one, rife with challenges. For example, how do you measure, farm by farm, agriculture's contribution to greenhouse gas production? Immediately we get into complex biogeochemical processes that vary greatly by field, by crop, by region. Water use is clearly something that should be measured, but is it important in areas where water is not scarce? And then there are social metrics: what is the right way to account for wages? Can we use average wages paid to workers or should it be the percentage of

Stewardship Index Partners and Funding

The Stewardship Index is a unique collaboration between organizations and individuals representing food production and processing, such as Western Growers Association and the National Potato Council, food buyers such as Sodexo, Sysco, and Del Monte, and civil society organizations including the National Resources Defense Council, California Rural Legal Assistance Foundation, and Defenders of Wildlife. Over 425 individuals from across the United States have signed up to participate in creating the project's metrics. Early funding for the project has come from the Packard Foundation and a U.S. Department of Agriculture Conservation Innovation Grant.

15 Proposed Stewardship Metrics

The Stewardship Index is developing metrics in 15 distinct areas of impact at the farm, processing, distribution, and retail and food service levels. They are broken out here in a triple-bottom line formulation.

PEOPLE

Human resources (worker health and safety, employment practices, etc.)
Community (local sourcing, local hiring, etc.)

PLANET

Air quality
Biodiversity and ecosystems
Energy use
Greenhouse gas emissions
Nutrients
Packaging
Pesticides
Water quality
Water use

PROFIT

Green procurement
Fair price and incentives

[2] For the past year Mr. McIntyre has served as the lead facilitator for the Stewardship Index for Specialty Crops, and his organization provides administrative services for the project.

wages relative to a "living wage"? (See "Inside a Metric.")

Despite the hurdles, the group has progressed far enough to begin piloting eight metrics on almost 100 farms and facilities, a substantial success. The goal of the pilot phase is to determine if the metrics themselves are workable, the data accessible, and the collection process sufficiently user friendly. Extreme care is being used to protect the security of the self-reported data during the pilot phase to assure all participants that incomplete or misleading data is not disclosed. A core principle of the Index is that the data created by participants belongs to them and may only be disclosed by them.

Based on the information collected in the pilot phase, the metrics will be further refined and then the Index will be rolled out for widespread use in the industry. A successful Index is envisioned as "one-stop shop" for a producer's sustainability reporting, avoiding expensive duplicative requirements that occurred in the leafy green food safety case. Producers would have a consistent set of measuring sticks to compare themselves with their peers and to report performance to their supply-chain partners. Buyers would have data to assess the stewardship performance of their entire supply chain, since metrics for off-farm processing and distribution are included in the Index, and identify opportunities for improvement. Commodity groups and civil society organizations would have aggregated and anonymized data from the Index to report changes in specialty crop stewardship performance.

If only it were that simple. The development of metrics brings into focus the current challenges in specialty-crop business relationships. Producers are concerned that collecting, and in particular *sharing,* stewardship information could be used against them by buyers who would have new data to pit one producer against another. The deep imbalance in influence between producers (particularly small and medium producers, but also very large multi-national agribusinesses) and the biggest buyers, such as Walmart and Tesco, intensifies the fear that many already have about sharing data.

Geography also plays a large role: consider a water metric that included information about water scarcity (which is not currently part of the Stewardship Index). Ninety-eight percent of California agriculture is irrigated, much of it in arid regions that require water imports to be productive. How would buyers and consumers rate produce from California, realizing that some of it came from potentially overdrafted groundwater, versus rain-fed produce from Michigan? Measuring stewardship will inevitably reveal regional disparities in production practices that result in more or less use of fertilizers, crop-protection chemicals, energy, and a host of other stewardship variables that are now hidden.

Inside a Metric

The members of the Stewardship Index's Metric Review Committees have been charged with determining exactly what to measure for each metric. The goal has been to select metrics that have real impact and can be measured in a cost-effective manner using current technologies and understanding.

The Water Metric, which has been approved for pilot testing in the field during the summer of 2010, includes two specific measurements:

1. Simple Irrigation Efficiency

$$\text{Simple Irrigation Efficiency} = \frac{\text{Crop evapotranspiration}}{\text{Applied water per acre}}$$

2. Water Use Efficiency

$$\text{Water Use Efficiency} = \frac{\text{Crop yield per acre}}{\text{Applied water per acre}}$$

Producers are not the only ones with reservations about the metrics; agricultural input companies have also expressed concerns. The Pesticide Metric Review Committee of the Index is considering adopting the IPM Institute of North America's Pesticide Risk Mitigation Engine, a new tool that looks at the on-field toxicity of crop-protection regimes. Consistent with the Index's goal of measuring impacts and not practices, the tool attempts to give farmers a view of the actual impact on insects, animals, and humans of their pesticide use. One implication is that it is possible to use a combination of integrated pest management and lower-toxicity chemicals and applications and still get an acceptable yield. This of course could affect the mix of crop-protection chemicals growers select.

Meg Wheatley, an American change management thinker, wrote in her book *Leadership and the New Science,*

> The most profound strategy for changing a living network comes from biology.…If a system is in trouble, it can be restored to health by connecting it to more of itself. …The system needs to learn more about itself from itself.

My experience is that this is true. Increased flows of information and rekindled relationships are powerful tools for change. Despite the challenges, efforts like the Stewardship Index *must* succeed. Moving toward sustainability means understanding what sustainability looks like on the ground in the form of the actual impacts on people, planet, and profit. With that knowledge in hand, we can generate a new cycle of innovation in the way we grow and process food. The fears are real (and are being addressed in a variety of robust dialogues the Index is conducting), but the opportunity is great as well. Information from the Index can help the entire supply chain reduce input costs, improve soil health, and increase the confidence consumers have in the foods they eat.

Get Involved

Development of the Stewardship Index for Specialty Crops is an open process that is open to the participation of anyone interested. You can join a Metric Review Committee or get more information at www.stewardshipindex.org.

A first effect of measuring actual stewardship performance of the specialty crop supply chain may be the uncovering of uncomfortable information. We might learn that we are not as sustainable as we need to be. As troubling as that might be, it is critical data to quicken the pace of innovation in the farming and processing of the fruits and vegetables we all need. And that is good news indeed.

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METRICS FROM THE FIELD
Blending insights from research with insights from practice
KEN METER

Letting food systems emerge
How do we measure progress in an emergent system?

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What if we assessed food systems as *systems that are adapting,* and not simply as static objects of research? What if we examined their underlying dynamics, rather than limiting ourselves to measuring only performance or impact? What if we embraced the complexity of the moment, and moved beyond linear models? These questions are gaining primacy as the global food movement both grows in complexity and gains momentum.

Consider what is taking place in the U.S. this summer of 2010: urban dwellers till vacant lots, lay irrigation pipes, swap seeds, challenge each other to exercise and eat better, and aggregate fresh produce to sell at commercial scale; immigrant farmers adapt seasoned skills and intensely effective work habits to their new homelands, creating highly productive farms; twenty-something, college-educated urban young adults start farms on rooftops; farm commodity groups try to define their stance on local foods; year-round greenhouses move off the fossil fuel grid; urban, suburban, and rural regions launch local foods coalitions; and farm and food businesses explore ways to collaborate with each other to reduce costs and expand market opportunities.

The movement promoting community-based foods in North America is already larger than the Civil Rights movement, in terms of the number of people and the number of communities engaged. Yet for all of our work to reconfigure food systems, we often fail to use systemic approaches. In this column ***Ken Meter*** *suggests how we can assess the movement's impact in ways that don't confine its emergent character.*

Ken Meter *is president of Crossroads Resource Center in Minneapolis, Minnesota. He has performed 51 local food-system assessments in 22 states and one Canadian province; this information has promoted effective action in partner communities. He coordinates the review process for USDA Community Food Project grants, and has taught economics at the Harvard Kennedy School and the University of Minnesota. A member of the American Evaluation Association's Systems Technical Interest Group, Meter also serves as an Associate of the Human Systems Dynamics Institute. He serves as a contributing advisor to* JAFSCD.

Each of these erupts rapidly as well as independently. Scattered and vibrant, they stretch boundaries. It is hard to see, let alone measure, changes in, the "food system." Yet, even with all this complexity, there are ways to conduct food system assessments that don't confine the options for action by imposing simplistic measures.

In "complex adaptive systems" such as these, controlled research may be impossible. Systematic academic inquiries of individual components (e.g., the producers, consumers, processors, and distributors in a "supply chain") may be necessary, but may not be necessarily sufficient, to inform public policy or guide effective actions. For example, even if each of the components of a "supply chain" were to gain strength, the system as a whole might fail due to some underlying dynamic affecting the synergies of these components.

In an adaptive context, the measures of success may themselves change over time. Indeed, no single perspective will be sufficient to understand how the system is functioning; embracing multiple points of view is critical. Both objective knowledge and subjective insights will be required.

My recent study of the Minnesota food industry (Meter, 2009) aimed to present such an adaptive systems view. By focusing on emergent business networks, the study revealed key systems shifts that are already underway — patterns that show how the system is adapting. Essential new insights were gained by looking at global, national, and regional forces *from the perspectives of people in communities*.

Guiding assumptions of this work included the following:

1. Analyzing patterns that appear in time-series data (in this case, farm cash receipts and production expenses) is a critical quantitative element;

2. Tracing financial flows through communities is essential in food-systems assessment;

3. Examining the dynamics found at the margins of the system, where it interfaces with its external context, can give crucial insights into the system itself;

4. Adopting the viewpoints of multiple observers reveals key insights not visible from a single perspective;

5. Considering what is emergent in the system (that is, the structures, patterns, and properties that arise from self-organization) will lead to many of the most robust insights;

6. Gleaning expert insights from "wise practitioners" (those with seasoned experience in the field) is vital for building a fairly complete understanding; and

7. Recognizing that while working from a detached perspective is essential, it is also important for the researcher and the audience to accept that we all work in, live in, and are influenced by the food system itself, such that this analysis is inherently performed from within the system, and cannot be considered wholly objective.

The Minnesota study began with a brief narrative covering four key food industries in the state: dairy, vegetables, beef, and apples. This allowed complex dynamics to be encapsulated in the stories of specific places and people. An historical economic overview followed, using quantitative data to outline key financial dynamics. Finally, four leaders of emergent food industries offered insights into the workings of the sectors in which each trades. Several appendices added reference data covering specific foods and markets.

As I prepared to interview the owners of several multimillion dollar businesses, mentioned below, each of whom is on the cutting edge of creating a new food system in Minnesota, I had expected to glean deeper insights into competitive pressures in a stressed economy. Indeed, such insights were certainly there to be found. Several CEOs naturally

considered hard-nosed cost-cutting critical to their successes. Yet, they added, something else was even more significant: developing relationships of trust with suppliers and consumers. These "soft" business skills, they said, were the most critical to their success. As one owner put it, "If I don't trust my suppliers and customers, or if they don't trust me, this business fails."

Moreover, the CEOs of these firms surprised me by pointing out that despite their successes in shaping an emergent community-based food industry, the economic contexts in which they worked were often their biggest obstacles. One business owner told me that his family had worked for three generations to produce a high-quality product — yet the market had almost no way of rewarding that quality. The apples he shipped gained more value in the 36 hours after they left his warehouse than they had in five months of being carefully nurtured in the orchards — despite the fact the family's brand is highly regarded. The financial benefits went elsewhere.

Another CEO told me that his medium-sized meat-processing firm carried costs that were far higher than the conventional commodity economy — his work costs 35 cents per pound, compared to three cents per pound for competing processing. Yet because he has built niche markets (including quality items priced low enough for an average family) at both the national and local levels, he continues to employ 60 employees. He credits his success with forming strong relationships of trust with workers, suppliers, and buyers. He has even helped related businesses to spin off, not only to bring himself new trade, but out of a civic commitment to building a stronger region.

Looking over the findings of these exceptionally candid interviews with successful food businesses, three qualities distinguished their approaches to commerce.

1. **Relationships:** Each formed relationships of trust with suppliers and customers, and devoted their firm's resources in part to strengthening this loyalty, not simply to trimming costs. Each saw itself working as part of a cluster of businesses, not as a stand-alone firm. Some devoted their attention to helping other firms they could depend upon over time.

2. **Resilience:** Each firm anticipated potential shortages of oil, climate, and unpredictable changes in consumer demand. They relied on a blend of distant and close markets, and opted for greener technologies as they could.

3. **Recycling:** Each firm made conscious efforts to build financial flows that recycle money and other resources through their locale; each helps build local economic multipliers.

Focusing business strategy in these ways moves system "levers" that shift the food system toward a community basis. I have come to believe this is true in the U.S. as a whole, not just in Minnesota. These same strategies strengthen urban gardens, immigrant farms, and food business clusters alike.

Focusing business strategy in these ways moves system "levers" that shift the food system toward a community basis. These same strategies strengthen urban gardens, immigrant farms, and food business clusters alike.

Which brings us back to the assessment question. How can we perform food-system assessments in ways that recognize how food systems adapt? When we view food systems as adaptive systems we look for patterns of emergence, rather than relying solely on comprehensive counts of inputs and outputs. If we speak with those most

affected by the system, gaining insight from the metrics used by those in the field, we may learn underlying dynamics that are not visible from an external viewpoint. If we embrace the complexity of the moment, we might release energy rather than contain it.

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GLOBAL VIEWS OF LOCAL FOOD SYSTEMS

Reflections on the growing worldwide local food movement

RAMI ZURAYK

Family farmers are struggling everywhere

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Family farming is not doing very well around the world. In the U.S., the oldest continuously operating farm, Tuttle farm, founded in 1632 in Dover, New Hampshire, is currently up for sale. The *Boston Globe* ran a story about it,[1] and many in New England and beyond are lamenting this sad event. Farm owner Will Tuttle expressed his feelings very clearly: "Looking forward, I don't see much opportunity for small farms to thrive. It's a tough grind." His words echo those of Morse Pitts,[2] who has been farming in New York's Hudson Valley for 30 years. Pitts is recognized as a pioneer of local, sustainable food and has been celebrated by the leaders of the Local Food movement such as Slow Food founding member Alice Waters. But Pitts is quitting farming, even though he has been doing everything by the "local" book, and successfully too: he sells at high prices directly to consumers; his clientele is large and faithful; and his produce is sold in New York's Union Square Market. Yet according to his calculations, his earnings are just USD7 an hour. Considering the amount of time and effort he deploys to produce sustainable food, this is — to say the least — unsustainable.

But what brought New England and New York into a column dedicated to issues of the Global South? Well, for one, I happen to be writing this from New England, where I am spending a few weeks on leave from the American University of Beirut, where I usually teach, to participate in the EcoGastronomy program offered by the University of New Hampshire. The program, the first of its kind in the U.S., is offered as a dual major in collaboration with the University of Gastronomic Sciences (UGS) in Pollenzo, Italy. The UGS, also known as "the Slow Food

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[1] See the story at www.boston.com/news/local/new_hampshire/articles/2010/07/27/nations_oldest_running_family_farm_put_on_market_in_nh/

[2] See http://prospect.org/cs/articles?article=slowed_food_revolution

University," "takes students to the field, the kitchen, the lab and Italy to study the complexities of sustainable food systems."[3] In return, students from UGS following a similar program, spending a term at UNH, where they get to learn about family farming and local, sustainable food in New England. In other words, the EcoGastronomy students are trained to be aware of the links between field, food, and farmers, which is unique in the academic world.

My stay at UNH has given me the opportunity to try and better understand farming in the U.S. Having studied in France and Britain and worked extensively in the Arab world, I find American agriculture a land of mystery where thousands of community supported agriculture programs rub shoulders with industrial biofuel production. After all, the U.S. is the country that gave us both the locavore and the supersized meal!

The realization that family farming is in disarray in places like New England came as a bit of a shock to me, in view of the flurry of farmers' markets and of restaurants and eateries that advertise their use of locally produced food. Surely if there are so many people who are eating local, sustainably produced food, the laws of the market dictate that local, sustainable farmers must be doing better, not worse. This "paradox of plenty" certainly deserves deeper study.

The global demand for sustainably produced food, specifically organic food, has grown so much and so rapidly in the past decade that it has sometimes resulted in aberrations, and not only in the U.S. Take Egypt for instance, whose precious water resources are used by large-scale farms to produce organic fruits and vegetables for export to supermarkets across Europe. However, Egypt is a food-deficit country where 20 percent of the people live below the poverty line on less than USD1 a day. It is also a recipient of food aid,[4] and a country where many rural and urban people are food insecure! The small- and medium-sized Egyptian farmers face difficulties similar to their French and American counterparts: they are unable to compete with the economies of scale and the control over the value chain that characterize capitalist agriculture. Our technical and scientific advances in sustainable agriculture, including organic farming, have been appropriated by the industrial food system to satisfy the growing demand for "healthy" food by global elites at the cost of reduced food security.

The question remains whether any form of agriculture truly can be considered sustainable if it does not contribute to sustainable livelihoods of small farmers and to the food security of the poor.

Research into how to improve the environmental sustainability of farming has gained strength in universities and research centers over the past decade. Environmentally sound farming is now of interest to granting agencies, and many schools of agriculture are refocusing their curricula on sustainable agriculture. This new interest has permeated other sectors: for example, the adoption of sustainable farming practices is often requested today as a precondition to agriculture development aid to countries of the global South.

The question remains whether any form of agriculture truly can be considered sustainable if it does not contribute to sustainable livelihoods of small farmers and to the food security of the poor. And while universities and research centers may have deployed serious efforts to discover and test new techniques and technologies to make agriculture less environmentally damaging, they

[3] See more at www.unh.edu/news/cj_nr/2008/sept/bp2eco.cfm

[4] www.wfp.org/countries/egypt

have done little to ensure the survival of small- and medium-sized farmers who constitute the vast majority of the poor food producers of the planet.

Organizations in the global Food Movement, including groups such as La Via Campesina and Slow Food, have stepped in to plug that gap. Many are attempting to change the rules of the game in favor of small- and medium-sized farmers, albeit in very different ways. La Via Campesina, for example, is an activist international movement that aims at achieving social justice and food sovereignty.[5] Its 148 member organizations come from 69 countries from Asia, Africa, Europe, and the Americas, but they organize and act in unison and provide mutual support. Slowly but surely, they are making their voices heard at all the food forums. Organizations such as Slow Food[6] operate in a very different manner. Slow Food started as a reaction against global fast-food companies, and in spite of its declared ethos of "good, clean and fair," it is better known for its convivial approach to the appreciation of sustainably produced local food rather than for its social justice agenda. One common critique of Slow Food is that the "fair" component of the triptych too often is treated as the poor cousin. However, it is specifically this component that is most needed for the survival of small- and medium-sized farmers — both in the Global North, where the welfare safety nets are being dismantled, and in the Global South, where these nets have never existed.

The tensions in the food system, in the food research agendas, and in the food movement partly explain the paradox of plenty. And while the shift toward sustainable agriculture is today inescapable for small as for big farmers, in the North as in the South, it appears that the food security of the poor and the survival of rural society may need more politics and less lifestyle.

[5] http://viacampesina.org/en/index.php?option=com_content&view=category&layout=blog&id=27&Itemid=44
[6] www.slowfood.com

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Success in farm start-ups in the Northeastern United States[a]

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Abstract
On one hand, food system analysts have been concerned about many topics: the rising age of farm operators, declining farm numbers, lack of adoption of practices and systems supporting greater ecological sustainability, and interest in increased food production for local markets. On the other hand, many energetic and enthusiastic people express interest in farming and producing more community-based food. Many of these people also claim values related to sustainability. Despite prospective and new farmers' strong interest and enthusiasm, most face numerous challenges in their start-up phase and many do not continue, even those showing considerable promise. In this paper we focus on the results from in-depth interviews with current and former start-up farmers in the Northeastern U.S. We illuminate four sets of factors related to "success" in farm start-ups: social context, personal characteristics, business characteristics, and luck. We then make three recommendations for the consideration of policy-makers, farm start-up advisors, and beginning farmers: advising and mentoring, conceiving of farms as parts of a larger food system, and focus on playing to strengths.

Keywords
Farm Start-Up, Farm Exits, New Farmers, Beginning Farmers, Interviews, Management, Mentoring, Northeast, Survey

Introduction

Challenges to Entry
The complex and changing contexts for contemporary agriculture greatly affect the prospects for success in entering farming in the U.S. In general,

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mainstream farming has been becoming less labor intensive and more capital intensive (Cochrane, 1993, 2000). Farm enterprise size has been increasing and contemporary farm numbers are less than one-third of those in the 1920s (see the chapter on "Farm Numbers and Land in Farms" in National Agricultural Statistics Service, 2009). Moreover, the bulk of actual production of many commodities is increasingly coming from a relatively small percentage of the largest farms (MacDonald, Hoppe, & Banker, 2006). And larger farms tend to have lower production costs due to labor-efficient technologies and volume buying (MacDonald, et al., 2006), as well as better access to and higher prices in output markets (Martinson & Campbell, 1980). Community-building practices of shared labor have been in decline with increasing farm size, increasing investments in machinery and other inputs, and growing variation in farm sizes (Harper, 2001). Many of the foregoing factors raise the costs of farm start-up and create other barriers that can make farm entry challenging. Those who succeed in farm start-ups need to find ways of navigating these challenges and finding niches where their enterprises can take root.

The challenges and opportunities for farmers also vary geographically. Historically, farm characteristics have tended to vary by region, due in part to patterns of continually emerging specializations rooted in climate, topography, markets, transportation systems, and other factors (see, e.g., Cochrane, 1993). Although agro-ecological conditions vary widely in the Northeast, where this study was conducted, typical soil characteristics, field sizes, rainfall amounts, and proximity to major urban centers have yielded conditions conducive to dairy farming compared to some other parts of the country, although typically such farms have been on a smaller scale than dairy farms located in western states (see, e.g., Gilbert & Akor, 1988; Gilbert & Wehr, 2003). The situation regarding fresh vegetable production would be similar, with even more pronounced change brought by technical innovations that include refrigeration and changes in the retail sector like the rise of large supermarkets (Friedberg, 2009). Recently trends of regional divergence have continued, with the Midwest and Great Plains having farm losses due to consolidation of commercial farms (Gale, 2000). In contrast, the Northeast and other areas that are "high in amenities" or in close proximity to large urban centers have been gaining farms, many of which are small, part-time operations (sometimes dubbed "lifestyle" and "retirement" farms, reflecting an interpretation of such farms based on their relatively small net returns).

The declines in numbers of commercial farms and the increases in the average age of farm operators in recent years are connected to the patterns of farm exit and entry. Indeed, declining farm numbers may result more from decreasing rates of farm entry than from increasing rates of exit (Gale, 1994). The increasing average age of farmers reflects the trend of farming households not replacing themselves in agriculture. For the U.S. as a whole, the 2007 Census of Agriculture showed that the average age of farm operators had increased to 57 years, about 2 years older than in 2002 and nearly 7 years older than in 1978.[1]

Opportunities for Entry

Despite the challenges to conventional farm entry, market opportunities for food and agricultural enterprises that differ from the dominant trend are also emerging (Lyson, 2004). Significant and growing numbers of customers want foods with particular properties, such as fresh, local, unique, or produced without particular production practices that these customers deem environmentally unsound, risky, inhumane, etc. One trend in supplying this market is the rise of a diverse range of small-scale, alternative agricultural enterprises producing for specialized and local markets, e.g., through farmers' markets, community supported agriculture (CSA), farm stands, and mail order.

[1] See www.agcensus.usda.gov/Publications/2007/Online_Highlights/Fact_Sheets/demographics.pdf. For comparison, if a typical farmer began farming at age 25 and retired at age 65, the mean age of farmers would be expected to be around 45. We note, however, that the Census of Agriculture practice of requiring someone to be identified as the principal farm operator probably inflates the average age slightly by undercounting younger people who are active in managing farms and building farm equity in intergenerational partnerships, family corporations, and similar arrangements.

Another emerging trend is toward more middle-size enterprises — "agriculture of the middle" — whose operators tend to specialize in producing particular agricultural products, but have become embedded in alternative marketing arrangements that bring them greater returns (e.g., Lyson, Stevenson, & Welsh, 2008). Many of these smaller and mid-size operators use production strategies and practices that differ from the mainstream and their operators strive to differentiate their produce from that of the mainstream, using clearly labeled practices like organic or grass-fed. These small and mid-size agricultural enterprises offer numerous opportunities for entry to new farmers, but typically also present complex production and marketing challenges that make getting sufficient returns to labor and capital for household livelihoods problematic. As a result, most such farms rely heavily on nonfarm income and benefits (USDA Economic Research Service, 2005). Still another trend is the rise of "social movement" organizations of farmers that support the small and alternative enterprises that were dismissed by land grant university researchers and Extension agents for many years. These organizations of farmers have provided locally situated knowledge and social support for those engaging in such enterprises. Examples include grass-based livestock production (Hassanein & Kloppenburg, 1995) and organic vegetable production, e.g., the Northeast Organic Farmers Association.

Themes from previous research on farm entry informed this study. Studies on dairy farming in the Midwest (Agricultural Technology and Family Farm Institute, 1995; Barham, Jackson-Smith, Stevenson, & Taylor, 2001a, 2001b; Buttel, Jackson-Smith, Barham, Mullarkey, & Chen, 1999; Center for Integrated Agricultural Systems, 2001; Jackson-Smith, 1994; Program on Agricultural Technology Studies, 2001) suggest that a wide variety of dairy farm start-up strategies can be successful for new farmers from different kinds of backgrounds, that family succession is not the only route into farming, and that entry on a modest scale can succeed. They suggest the need for good matches between the characteristics and skills of the operating household and the scales and types of enterprises. They also suggest the need for a variety of policies that would help to increase net returns to farming, make affordable credit available, and implement programs that assist start-up farm enterprises. Authors of a study in Michigan concluded that start-up dairy farming was feasible with innovative management techniques that reduce operating costs (Schwarzweller & Viera, 1996).

Other studies of farm start-ups have looked more broadly than dairy farming. In the late 1990s, the Northeast New Farmer Network (NENFN) project examined start-up farmers in the North-eastern states with the goal of developing the infrastructure needed to support farm start-ups (Johnson, Bowlan, Brumfield, McGonigal, Ruhf, & Scheils, 2001). Based on a series of focus groups, they developed a typology of new and prospective farmers with two main categories: prospective (with subcategories of recruits, explorers, and planners) and beginning (with subcategories of start-up, restrategizing, and establishing). To assist in planning programs for new farmers, Johnson, et al., also analyzed a variety of attributes of such farmers, their social contexts, their farming and financial goals, and their learning and assistance preferences. Their recommendations include tailoring programs to meet the needs of different types of prospective and start-up farmers, broadening the range of topics considered and covered in programming (e.g., family goals, social support system). Work from this same group led to a set of policy recommendations around important issues of farm start-up: "access to capital and credit"; "access to land"; "access to information, training and technical assistance"; and "access to markets." In the context of Iowa, Paul Lasley (2005) examined the social context of Iowa agriculture with an emphasis on farm succession and how this context both discouraged young people from entering agriculture and created barriers to doing so. Lasley offered recommendations for policies that would assist beginning family farmers by improving the profitability of their farms and lowering their risks, and by improving the services provided by land grant universities and their Cooperative Extension arms.

We undertook a qualitative study to better understand the processes of decision-making embedded in social and ecological contexts that led to continuation and exit among those engaged in farm start-ups in the Northeast. Unlike many previous studies, this one is focused substantially on the social aspects.

Methodology

This study had two phases; in this paper we primarily report on the findings of the second phase, but we briefly describe the first phase because it provides an important backdrop. The first phase was a survey of a broad range of continuing and exited farmers who had begun farming in the Northeastern U.S. The second phase was in-depth qualitative interviews with a subset of these farm operators. Because qualitative studies are not common in this topic area, in the rest of this section we briefly describe the approach.

Sampling and Sample Characteristics

For the purposes of this study, we defined farming as undertaking agricultural activities with intent to produce products to sell commercially to generate profit (Johnson, et al., 2001). Start-up farmers were those who had been actually engaged in farming for 10 or fewer years, regardless of the scale of their enterprises or net income levels. Since no lists of start-up farmers from which to draw a sample were known to exist, in the first phase we recruited participants at a range of events that beginning farmers were expected to attend. We also asked Extension staff, staff at nongovernmental organizations, and other farm service providers who worked with such farmers to invite their clients to participate. Through these means, we obtained a nonrandom, purposive sample of 99 beginning farmers from the 10 Northeastern states with farms that ranged from full-time businesses to small, sideline enterprises (see table 1).

Table 1. Survey Responses by State

State	N
Connecticut	2
Delaware	1
Maryland	7
Massachusetts	11
Maine	15
New Hampshire	10
New Jersey	5
New York	13
Pennsylvania	20
Rhode Island	1
Vermont	13
West Virginia	1
Total	99

The second phase of the study involved qualitative interviews with 36 start-up farmers who had participated in the first phase. We selected these cases from the pool of 62 cases who had both returned their questionnaires in time to be considered and had indicated that they would be willing to be interviewed in person (table 2). From this pool we chose cases that reflected the range of both farm types and social contexts for start-up farmers. Our goal was improve our chances of detecting potential substantial differences because of these variables ("theoretical sampling" as described by Glaser & Strauss, 1967). We surmised that the most important source of variation that we could meaningfully explore in this study would be type of commodities produced, with geographic context being another significant source. Accordingly, three considerations drove our selection of cases to represent: (1) the different states in the Northeast (shown in table 3), (2) the range of common farm types and circumstances (see tables 4 and 5 for indications of the range), and (3) both continuation in farming and exits.

One complication was that many of the farms were quite diversified and, therefore, not neatly classifiable. Since dairy farming represents one of the more specialized and common farm enterprises in the region, seven cow dairy cases, with herd sizes ranging from about 70 cows to 500, were chosen

Table 2. Interviews from the Cases Selected from the Completed Surveys

Category	Cases
Interviewed	36
Willing, not interviewed	2
Not chosen (e.g., represented by similar cases)	12
Not eligible	1
Not able to locate	8
No response/refused	3
Total	62

Table 3. Interviews by State

State	N
Maryland	2
Massachusetts	5
Maine	5
New Hampshire	3
New Jersey	2
New York	5
Pennsylvania	5
Rhode Island	1
Vermont	7
West Virginia	1
Total	36

for interviewing. Other than the dairy farmers, most of the farmers marketed their products directly to consumers, with a few marketing in both ways, often by direct wholesaling to restaurants rather than selling in mainstream commodity markets (see table 5). Several of the start-up farmers operated community-supported agriculture (CSA) enterprises. Beyond the cleaning and packaging typical of preparing vegetables and other products for direct sale, at least three of the farm households did substantial on-farm processing of milk or herbs to add value to their products. Livestock producers who marketed their meat and other products directly to consumers typically used other firms for processing. We did not get detailed income information in the interviews, but judging from the interviewees' living circumstances, kind of farming enterprises, age, occupational history, and family employment information, we would expect that fewer than half of the farm households interviewed would have earned the bulk of their household income from their farming enterprises. Some had substantial resources from off the farm to invest in their farming enterprises, while others had very limited resources.

Table 4. Main Enterprise Type of Interviewed Farmers

Category	Cases
Cow dairy	7
Goat or mixed dairy	3
Beef	2
Sheep or deer	2
Mixed livestock/poultry	4
Vegetables/herbs	3
Berries/fruit/cranberries	3
Flowers/ornamentals	2
Mixed vegetables/berries/etc.	4
Mixed crops & poultry/livestock	6
Total	36

Table 5. Main Market Type for Produce of Interviewed Farmers

Type	Cases
Retail	21
Mixed	6
Wholesale	9
Total	36

Our third criterion was to get a balance between farmers who were still farming and those who had exited. Unfortunately, few already-exited farmers participated in the survey and many of those who exited between the time they completed the questionnaire and when we tried to contact them proved difficult to contact and to interview. Some

of these had nonvalid addresses and phone numbers and we were unsuccessful in internet searches to find contact information for them. Of the 26 survey respondents whom we considered for interviewing, but did not interview, eight fell into this category. We surmise that they were no longer in farming during the time of our interviews. As a result, only three farmers who had exited farming were interviewed, although one of these was a partner in another, currently ongoing farm started initially by her spouse.

Recruitment and Interview Procedures

We mailed each of the farm households selected for interviewing a letter acknowledging their participation in the survey, describing both our reasons for asking them to be interviewed and the interview process, listing the benefits and risks of being interviewed, and indicating that they would be contacted. In the letter we requested that any adults who were directly involved in managing the farm enterprise participate in the interview.

Most of the interviews, conducted between mid-April 2003 and late April 2004, took place on the interviewees' farms, either in their homes or at other suitable places on their farms. The exceptions were the two operators who did not live on their farm sites and who were interviewed in the winter and the three cases who had left farming. One of these exited farmers lived in another part of the country, so was interviewed by telephone. Almost half of the interviews involved more than one interviewee. Some of those who were interviewed individually had no current domestic or farming partners. Some had domestic partners who had little or no interest in the farming enterprises. Others had farming or domestic partners who were involved, but were not present for a variety of reasons, including the interviewees' apparent choice, difficulty in scheduling the interview around partners' off-farm work, partners who chose not be interviewed, and unanticipated demands for transporting children. All interviews were tape-recorded, though the information from one was limited due to tape recorder failure. The interviewer casually observed each farm upon his arrival and departure and accepted most offers for tours of the interviewees' farms.

The interviews consisted of nine open-ended questions that we intended to elicit the "stories" of the interviewees' farm start-ups and the rationales behind the important decisions they made. In contrast to more typical approaches in which the observations might have been guided, interpreted, and analyzed from an outside frame of reference — such as farm management principles — we let the interviewees tell their own stories with the goal of gaining insight into how they themselves understood the processes and challenges of their start-ups. Our questions were: (1) How did you get into farming?; (2) What were the three most important decisions or steps taken since the time of active exploration of farm start-up?; (3) Where have you been most successful in your farming experience so far?; (4) Where have you been least successful?; (5) What were your greatest challenges in farming?; (6) As you were first getting started, what were the most important things that you thought you needed, but did not yet have?; (7) After you had started up and had been in business for little while, what were the most important things that you found you needed, but did not yet have?; (8) What information and assistance did you receive or could have received that would have been the most helpful, and from whom?; and (9) What do you think is the most important advice that you could give to someone who wants to start a farm? The conversations elicited by these questions and associated questions for obtaining elaboration and clarification typically lasted a little longer than an hour.

Analytic Approach

Since the analytical approach used in the second phase is not typical in this field, some explanation will be helpful for interpreting the findings. Because we were investigating the decision-making processes of start-up farmers and were unwilling to presume that we already knew what these processes were, we adopted a sociological approach well-suited to learning about this (see, e.g., Glaser & Strauss, 1967; Strauss & Corbin, 1994). Since the authors already "knew" much

about farming and beginning farming, we adapted the approach by starting with a set of working hypotheses based on our knowledge about farming from the literature, our previous research, and our personal observations. We then shared these hypotheses with selected others, including Richard Brzozowski, Seth Kroeck, and Duncan Hilchey, all of whom provided helpful comments for additions and elaborations. We continually "tested" and refined each of the hypotheses on the list by systematically reviewing it after each interview to assess whether it really fit the empirical information from the interview. As the study progressed, particular hypotheses needed to be modified to be consistent with the observations and some new hypotheses were added. The modified list of hypotheses that are consistent our observations appears below in the findings section, along with notes on how these were revised in the course of the study.

Findings: Factors Relating to Continuation in Farm Start-ups

In the processes of conducting the interviews and of analyzing the data, our focus was on two broad questions framed by the perspectives of our interviewees: (1) In what specific ways were the start-up farm enterprises doing well or poorly, and (2) what were their unmet needs?

Although the term "success" appears in the title of this paper, we use the terms "continuation" and "exit" rather than "success" and "failure" to describe the outcomes of farm start-up attempts. Our reason is that many factors are involved in whether a particular farmer continues or exits. Farm start-ups (and their continuations) are complex events that unfold in changing ecological, social, economic, and operator conditions. Some farmers may have the resources to continue chronically unprofitable farm enterprises, while other farmers with well-run and profitable enterprises may not be able to continue because of short-term cash flow insufficiency, health problems, or family issues. Some exits result from business analyses that project net income or production outcomes that the operators deem unsatisfactory. To a certain extent every farmer guides the unfolding of his or her enterprises by making choices: choices that may result in solving particular problems, making them worse, or even creating new problems. It was apparent that farmers we interviewed learned from their experiences and this led to changes in their farming and business strategies, views of farming, and visions for their farms. The outcomes of these choices often became apparent only in retrospect, though some of these outcomes might have seemed obvious to experienced farmers (who sometimes might also have been wrong in their anticipations). Moreover, the farmers who produce the best products or who are the best stewards of their soil or livestock may not survive financially, while those who survive financially may not excel in these categories.

Below we report our findings on each of the four categories of factors of continuation in farming: social context, personal characteristics, business characteristics, and luck. We begin each section with the rationale for the general hypothesis, then present its details based on our data, and finally discuss how it was modified during the research.

Conducive Social Context

Typical materials for farm management tend to emphasize economic and individual operator factors. Although these are very important, they tend to reflect an individualistic emphasis (see, e.g., Bellah, Madsen, Sullivan, Swidler, & Tipton, 1992) and a tendency to credit "good things" and "bad things" to individual operators (e.g., the "just world phenomenon" of Lerner, 1980). However, a farm, even a sole or family proprietorship, is not just an individual activity that occurs in a vacuum. Rather it is embedded in the conditions of the society of which it is a part, and these days, a society in which agriculture and food production, while fundamental, are no longer central, especially in the Northeast. In other words, any farm is affected greatly by the governments, support businesses, communities, and social relationships that make up its social context. Social structures related to food and agriculture typically contain many contradictory elements. For example, small farms tend to be equated with the American dream,

while, simultaneously, manual labor and operators of small farms tend to be denigrated (Berry, 2002), leading to what one commentator has called "our hidden wound" (Chapter 3 in Logsdon, 2000). Focus groups for another project indicated that many people seem to want the low consumer food prices that are facilitated by government-subsidized, large-scale, highly specialized agricultural enterprises at the same time that they want to see a working landscape of small family farms around them (Hilchey, Gillespie, Kay, & Smith, 2008). The complex and sometimes contradictory social world both enables and constrains agricultural enterprises, shaping opportunities and challenges in ways that vary over time and across social and geographic spaces. This generates niches that might be wonderful for particular kinds of farming enterprises and prohibitive for other kinds and is the basis for the hypothesis that continuation in farming will be more likely with a conducive social context — specifically, one that includes the following attributes:

1. Access to land, equipment, livestock, facilities, operating capital, etc., that are adequate and appropriate for the kind of farm enterprise and that are on "reasonable" terms given contemporary product market conditions;

2. Practically available farm input suppliers, information providers, and service providers (defined roughly as having veterinarians, agricultural chemical suppliers, consultants, etc., who are both willing to serve and located close enough to make using their services economically reasonable) and, preferably, be committed to helping a start-up farm operator;

3. Practical availability of "good" markets for products (defined roughly as access to conventional mass, established specialty niche, self-created niche, or other markets on terms which allow adequate net profits, e.g., have willing buyers, low transaction costs, and high selling prices);

4. Supportive family members and significant others who value farming and who accept the associated work hours, constraints, risks, and inconveniences, and, preferably, are willing and able to contribute labor and other resources — including benefits and income that allow for risk-taking — as needed;

5. A supportive agricultural "community" (perhaps geographically diffuse) with shared commitments and trust that enable both reciprocity in sharing knowledge, equipment, and labor and transactions among members, including bartering;[2]

6. Neighbors who support the particular kind of farm, or at least accept it;

7. Uses of surrounding land that are compatible with the particular agricultural enterprise (e.g., in areas with considerable urban sprawl, enterprises that do not produce substantial noise or offensive odors);

8. Taxation of farm income, sales, and property as well as permit and regulatory fees and associated costs that, taken together, are reasonable relative to the opportunities for farm income;

9. Suitable policies (i.e., laws and regulations) pertaining to farming and agricultural product marketing that manage land uses and ensure public safety without strangling farm enterprises; and

10. Access to "adequate" health care and other benefits, through a government program, organizational membership, or attached to a farm household's off-farm employment.

Of these ten hypotheses, two were added as a result of the information from one or more interviews: the ones referring to supportive neighbors and compatible uses of surrounding land. Several of the eight original ones were

[2] Sources of "community" identity can include shared history, religion, or commitment to particular farming approaches, like using organic practices.

modified in small ways, mostly by adding the illustrative examples.

We offer two notes on interpreting these findings. First, not every hypothesis was explicitly pertinent to every case. For example, issues with neighbors were not mentioned in all interviews, but we had no cases which suggested that opposition from neighbors might improve prospects for continuation in farming. Second, we claim that the above propositions are "provisionally true" for and useful for understanding the situations of the type of start-up farmers that we interviewed, that is, they are consistent with what we observed in the interview data (see, e.g., Popper, 1968). As we discuss in the concluding section, neither our sampling nor our data analysis approaches speak to the topic of the prevalence. The comments in this paragraph also apply to the three categories of hypotheses that follow.

Appropriate Personal Characteristics

As in any small business, the operator or operating team of a farm enterprise is central to its operation and outcomes. For smaller-scale farm enterprises, few things happen without the operator's or operating team's initiative and attention. Therefore, the match between the attributes of the operator(s) and the characteristics of the particular enterprise are critical. An enterprise like a dairy farm that requires early morning labor 365 days per year for its effective operation would not be a good fit for a person who cannot function before 11:00 a.m. Therefore, continuation in farming will be more likely if the farmer(s) has appropriate personal characteristics for the specific farm enterprise undertaken, including in general:

1. Willingness and physical capacity to work hard and long hours;

2. Appropriate managerial knowledge and technical skills for producing, harvesting, storing, delivering, marketing, etc., the products produced, including the ability to "work smart," to multitask, and, if needed, to manage other people effectively;

3. Flexibility and innovativeness in the face of challenges;

4. Ability and motivation to gain needed information from a wide variety of sources and astute personal observations that enable avoiding mistakes as well learning from any mistakes made;

5. Aptitudes for the skills needed for producing any products in a farm's portfolio;

6. Appropriate technical knowledge and skills for producing, harvesting, storing, delivering, and marketing farm produce of acceptable quality and with good timing;

7. Willingness and capacity to curb personal consumption in favor of current operating expenses and investment in the business;

8. Wisdom to avoid too rapid growth, undertaking too many new things at once, and other sources of overstretching management and resources;

9. Ability to take outside perspectives — such as those of urban customers in the case of direct marketing — in evaluating products and identifying marketing opportunities;

10. Skill in communicating and negotiating combined with the cultural knowledge needed for initiating, being open to, and maintaining effective working relationships with important others who provide needed and timely labor, services, information, financing, equipment, materials, and markets (reciprocity and community);

11. Strong entrepreneurial motivation to do what is needed to produce successfully and efficiently and to market effectively; and

12. Persistence and perseverance.

Ten of the above 12 hypotheses relating to personal characteristics were in the original list.

Added were "wisdom to avoid too rapid growth…" (a key problem affecting two of the former farmers) and "skill in communicating and negotiating…" (a distillation of the challenges described by a number of the interviewees). Many of the original 10 were elaborated with additional small details and refinements.

Suitable Business Characteristics

Farms can be configured in many different ways. Some require the full-time, year-round labor and management of their operators, while others are very part-time and seasonal. Some provide all the income for their households, others provide little or no income. Some produce high-value products in relatively small quantities, others produce low-value commodities in relatively large quantities. Some use new equipment, others depend mainly on used equipment, and still others rely on custom operators. Some have considerable debt, others have no debt. Therefore, a farm's business characteristics need to be internally consistent. Continuation in farming will be more likely if a farm's business characteristics are suitable, including having:

1. Adequate resources from accumulated capital, current farm income, current nonfarm income, lenders, or other investors for cash flow;

2. A sound, rational farm vision and business strategy that may be manifested in (a) in regularly-revised business plans that incorporate realistic scenarios, include contingency plans, balance diversification and specialization, rationally set rates of expansion or contraction, and match production and marketing opportunities, (b) slow, incremental business development kept well within the means and abilities of the operators, or (c) an appropriate balance between these opposing tendencies; and

3. A good match among production scale, production technologies, and available labor for each subenterprise.

These are the original three hypotheses regarding business characteristics, but the whole of the original second one was its current subcategory (a). Because we had cases of farmers who lacked written business plans for their enterprises, but appeared to have considerable promise for continuing in their farm enterprises, that statement was not supported by the data. Since a business plan still seemed to be a valuable tool for many farmers, we elaborated the hypothesis to include contingencies that would be consistent with all of our empirical observations.

Good Luck

Continuation in farming will be more likely if the farmer is lucky. The rationale behind this consideration involves two interrelated aspects. First, agriculture is an integral part of two very complex systems — biophysical and social — which form what can be thought of as a socio-ecosystem (Gillespie, 2010). These two systems affect farm enterprises in ways that often cannot be anticipated. Second, it seems unreasonable that farm operators, especially beginners, can be expected to be "perfect" managers who know every possible thing about their farming enterprises and who correctly anticipate and control every possible transaction with outside parties, like buyers and lenders. Moreover, events outside of an operator's control can happen singly and coincidentally, potentially to the operator's benefit and potentially to his or her detriment. Consequently we anticipate that every farmer will at times experience successes, opportunities, and problems that are not direct results of his or her decisions and perhaps even without his or her awareness. For example, if, based on incomplete information, a farmer chooses a particular variety of a crop that proves to be highly suited to his or her farm's conditions and that year's weather, he or she would be "lucky" and likely not even know it. Further, farm enterprises vary over time in their vulnerability to going out of business because of such other variables as debt load and labor availability. Even with the best-conceived and -executed business plan, unforeseen changes in markets can cause major disruptions to cash flow and business progress. Examples would include the 1980s Alar

incident in the apple industry, a major fire in a Massachusetts slaughterhouse in 2006 that forced its closure, and the collapse of pork exports with Asian economic downturn in the late 1990s. If a farmer's livestock have a disease or breeding problem during a time of high output prices, this would seem to be less likely to threaten the continuation of his or her enterprise than if the same thing happened at a time when output prices were very low. Similarly, a farmer who has significant debt will likely be more vulnerable than would be a farmer with little or no debt.

In summary, continuation farming involves an element of luck. Although each of the list of supported hypotheses listed below could be re-written in a positive sense, e.g., "good weather," "good luck" seems unlikely to be associated with farm exits. Therefore, we focus here on common types of unfortunate things that happen on farms that can involve luck and that new farmers and their advisors need to consider. These include:

1. Bad weather (e.g., drought or too much rain);
2. Low market prices for outputs or high prices for inputs (or both);
3. Loss of markets due to any of a variety of potential causes, including buyer's business decisions or business failure, shifting consumer tastes, and new regulations;
4. Serious production problems in livestock or crops caused by equipment, facilities, diseases, pests, or other causes;
5. Incomplete, wrong, poor, or miscommunicated information from authors, advisors, consultants, or lenders;
6. Loss of a key support business or person;
7. Lack of needed contacts or information sources;
8. Management decisions that in retrospect prove to be unsatisfactory;
9. Effective labor shortages due either to employee issues or incompetence, or to an inability to recruit employees;
10. Operator, family member, or employee being unavailable due to health problems from accident or illness or due to lack of childcare; and
11. Family or partnership dissension or dissolution.

The above list was significantly modified from an original list of nine working hypotheses based on the data from the interviews. The second hypothesis, originally "low market prices," was modified with the realization that "high prices for inputs" (or some combination of these two) experienced by some interviewees had essentially the same impact on net income. The third hypothesis, "loss of markets…," was elaborated from the original "loss of key markets" based on the now included reasons that surfaced in the interviews. The fourth hypothesis, "serious production problems…," was elaborated from the original "serious disease or pest outbreaks in animals or crops" when cases fit the general theme, but were not consistent with the original wording. The fifth hypothesis, "incomplete, wrong, poor, or miscommunicated information….," was changed to include "miscommunicated" and to specify some specific types of sources uncovered. We had not anticipated the disturbing stories of unfortunate and uninformed advice from advisors, consultants, and lenders that are described below in the recommendations section. The key point relating to luck is that new farmers may not be able to immediately discern the quality of advice or have a real choice of advisors. The sixth and ninth hypotheses, "loss of a key support business or person" and "effective labor shortages…," were added based on the interview data. The tenth hypothesis, "operator, family member, or employee being unavailable…," was elaborated from the original "bad health from accident or illness." Both the ninth and tenth hypotheses are similar in that they pertain to having needed labor available but they distinguish between different reasons for the

problem. The eleventh hypothesis was elaborated from the original version by the addition of "partnership" in the sense of business partners as well as household partners. Both can have very adverse impacts on farm enterprises.

A major issue within the research team and among the reviewers of the manuscript was the extent to which "good" business management should be theorized to eliminate luck as a significant factor in farming outcomes. One interviewee stated the business management position clearly as "You make your own luck." Our position is that this statement is true, though the matter is much more complex and not fully true as we understood our interviewee to mean eliminating luck as a factor. Luck is related to management in that every management decision simultaneously frames future possibilities for both good luck and bad luck. For example, if a start-up farmer engages an advisor, that opens up the possibilities that this advisor will be a good match or a poor match for that farmer's particular aptitudes, scale, type of enterprise, farm ecological niche, etc. Such a decision would lead to a different set of potential events than would flow from deciding not to engage an advisor. Obviously, a prudent manager would seek recommendations from multiple sources as well as gather information about the advisor, but information is always incomplete and the future is never determined by past events. Another illustrative example would be deciding to take advantage of market opportunities by expanding an enterprise to a size that required hiring nonfamily labor. Even if such an operator developed expertise in managing employees and in all the regulatory, insurance, and tax matters related to having employees, such an expansion still exposes him or her to the risks of hiring phenomenally wonderful employees, on one hand, and hiring chronically underperforming or unreliable ones, on the other. This would be a significantly different set of possibilities than were present prior to expansion.

None of the above should be construed to imply in any way that we are downplaying the importance of engaging in sound business planning and management, gathering appropriate information, acquiring needed technical skills and knowledge, observing and responding to field and market conditions, and managing other enterprise matters astutely. A reasonable management strategy would include taking actions to prevent the most probable risk events or, if preventing such events was unsuccessful, to be prepared to mitigate their impacts. These are all important for positioning farm operators to take advantage of opportunities and to reduce their vulnerability to anticipated adverse events and conditions. Neither should we be understood to be downplaying the risks that arise from management shortcomings. Clearly the purpose of a business plan is to reduce the risk of problems through explicitly specifying and evaluating production projections, production costs, market opportunities, assumptions, risks, margins of error, etc., and to adjust enterprises to increase their likelihood of being profitable (including abandoning enterprises when prospects for achieving profits or other goals are poor). As such, business plans are arguably good things for all farmers and having a well-thought-out business plan can be expected to reduce a farmer's chances of a farm exit. At the same time, business plans do not guarantee success. These are negotiated among farmers, lenders, advisors, and others, with results that are based on current knowledge, economic theory, and shared expectations about market prospects. As many farmers in the Midwest in the early 1980s, hog producers in the late 1990s, and dairy farmers as recently as 2009 have learned, business plans prepared in times of optimism can be dangerous to business survival, because the projections and assumptions embodied in these plans are not always realized. Moreover, advisors and lenders may be committed to particular ideals of enterprise types, leading them, for example, to push expansions as conditions of getting loans, with the net result being increased vulnerability if market prices fall or if needed labor is not available, or, for an example seen in this study, to advise a start-up dairy farm household to enter into a specialized dairy farm rental contract that left them constrained to buying poor-quality feed crops produced by their landlord.

Recommendations

Given the complexity described above, it should not be surprising that we do not see any simple recipe, policy, or program for serving the needs of every start-up farmer. Nor can we see a simple recipe for sorting out which of these farms "should" survive (e.g., because they have the best chance of success) and, therefore, get special attention and resources. In their descriptions of their goals, situations, and the choices they made, all the start-up farmers we interviewed were quite rational and strategic. Although we saw some indications in the survey data and in the interviews that a few respondents had incorporated scenarios in their business plans that were in retrospect overly optimistic, all of the interviewees had thought through what they wanted and how to achieve it. Based on what we saw in the whole body of interviews, it is not at all clear that we would have predicted ahead of time the three cases who were out of farming. In fact, the set of farm operators who appeared to be in the most difficult financial circumstances at the time of their interview — and for whom things seemed only to get worse in the next year — appear to have reorganized and were still in farming in 2009.

In recent years many programs have served beginning farmers and many of these programs help these farmers greatly. However, not all beginning farmers participate in such programs and each program has its particular foci. We developed the recommendations that follow based on examining the interview data and asking what needs were and were not being met for these start-up farmers. Our purpose is to suggest what might increase the success of farm start-ups based on what we learned. We present these in three categories: advising and mentoring, conceiving of farms as parts of a larger food system, and playing to strengths. We leave our readers to contemplate the possible benefits of adopting these recommendations against their likely costs in particular social and ecological contexts.

Advising and Mentoring

This recommendation is derived from our interviewees' positive and negative stories of their experiences with mentors and advisors. It is directed particularly at local officials in their deliberations of policies that affect farming in their communities and at leaders of organizations that work with beginning farmers.

Quite a few of the interviewees spoke gratefully of the contributions of one or more advisers or mentors. We discerned several characteristics of these valued advisers and mentors: (1) These persons understood important things about the interviewees' start-up farms that the interviewees themselves did not understand, i.e., they had relevant information, provided interpretations of things that were happening, foresaw problems, or provided needed solutions to problems. (2) They communicated well with the start-up farmers, i.e., they could explain things in ways that were understandable or did not make the new farmers feel demeaned. (3) They went out of their way to be helpful, e.g., some invested whatever time or energy was needed, including working on nights and weekends, to solve a problem at hand. For example, one financial adviser carefully went over a loan officer's adverse assessment of a loan application, worked overnight to find a persuasive way to make a positive cash flow projection, and then went with the applicants as they met with their lender's loan officer and convinced him to approve their loan application.

In addition, some of the interviewees related instances of emerging problems on their farms that they unfortunately perceived only after such problems had become very serious and some of these interviewees observed that a mentor or advisor might have identified such problems well before these became apparent to them. Perhaps having such mentors or advisors would have enabled these farmers to avoid the adverse consequences due to their own lack of experience or foresight.

However, having advisors should not be seen as a panacea. Interviewees also told stories of bad advice from service providers (e.g., nutritionists or loan officers). These providers were presumably people who should have known what they were

doing based on their professional positions and credentials; in some cases, the start-up farmers were not able to discern immediately that the cause of a problem was really the provider's work. Start-up farmers interested in alternative types of enterprises, e.g., organic vegetable production or dairy farming based in management-intensive rotational grazing, may not find good advice from typical service providers and may need to turn to the local knowledge of other farmers involved in such activities (e.g., Hassanein & Kloppenburg, 1995). The potential for problems from bad advice would likely to be much greater in situations in which the person giving the advice had power over the start-up farmer, as in the case of a loan officer. In such situations having other mentors might help the new farmers assess the advice being given and formulate workable responses.

Every farm, start-up or not, is going to have some problems with weather, diseases, and the like. We do not think that it entirely reasonable to expect that every start-up farmer will be on top of every emerging problem or will know immediately what action will be effective. Because of this, we have been struck by what seems to us to be the importance of start-up farmers having advisers and mentors who have the key technical knowledge needed for their particular farms and who are sympathetic to the particular farmer's objectives and situation (e.g., an adviser with expertise in conventional farming and who believes that organic certification is primarily a deceptive marketing tool may be a poor match for a start-up farmer committed to ecological farming practices). Perhaps such advisors should refer the start-up farmer to advisors who would be a better fit.

Moreover, it seems to us that teams of mentors or advisers could be very helpful to many start-up farmers. Experienced farmers would be obvious candidates for leading such teams, but teams would ideally have others with a wide range of technical expertise needed for the particular enterprise, e.g., in financing, production, postharvest management, marketing, regulations, and employee management. Such a team ideally would have at least one person who championed the start-up farmer in matters of getting and evaluating information, getting financing, etc. and who provided moral support. Having teams of advisers and mentors would seem to be particularly critical where a start-up farmer had little room for error, e.g., situations involving considerations like an operation of substantial size, low profit margins, little or no household income from off-farm, and significant debt to service. This would be less important for farmers with small operations, substantial off-farm household incomes, and no debt and, therefore, who would have considerable latitude to learn by trial and error without great risk of going out of business. Peers are another potentially valuable source of guidance based on experiences of such groups in financing small enterprises (such as the Grameen Bank) and in technical support (such as farmer learning and research groups in the Northeastern U.S. and other areas).

Despite the potential benefits of having advising teams, we offer two caveats. The first is that we acknowledge that having teams of mentors and advisers would likely take significant resources, so that assessments of the social benefits of having new farmers would affect assessments of whether such investments were justified. The social benefits, e.g., improved local food security, and environmental benefits, e.g., providing green space and preventing sprawl, could be considerable, but difficult to measure. Similarly, studies showing the impacts of farms on their local economies (e.g., Dobbs & Cole, 1992) suggest that purely economic benefits could also be significant, but also not easily measured. The second caveat is whether an advisory team would be appropriate for a particular farmer's situation. Having a team of people descend to bestow a diverse range of advice could be overwhelming. Also, the time required for getting advice and managing the relationships with advisors could both be significant and distract a farmer from other things that he or she needed to do. Finally, since the appropriateness and quality of advisors cannot be taken for granted, having a team might actually increase the risk of exit due to "bad" advice. In some cases, one experienced farmer mentor with an appropriate background,

orientation, and commitment to the start-up might well be all that was needed.

Conceiving of Farms as Parts of a Larger Food System
This recommendation is intended for policy-makers and decision-makers in organizations that support beginning farmers, and beginning farmers themselves. Considerations about investments in advising and mentoring should be coupled with the idea that any farm needs to be understood as a unit that functions in a particular role (or roles) within the food system — analogous to an organism in an ecosystem. Not surprisingly, many of interviewees seemed to focus largely on their own farms and gave little consideration to how their particular farms fit into the emerging local or global food system. Many considered their role in the local food-system context as a key focus of their farm goals, but not all seemed to understand the national and global food systems. At the same time, many interviewees with successful marketing niches seemed to have at least an implicit understanding of such matters. Though some advisors of our interviewees gave attention to this, we wonder the extent to which those who advise beginning farmers typically focus mainly on the farm — its production and marketing. Based on our observations, we urge advisers and mentors to look beyond the boundaries of farms in their work with prospective and beginning farmers. Where does a farm or potential farm fit into a particular product chain or chains? What are the short- and long-term options, risks, and opportunities in that product chain? What are the available input suppliers in the local food and agriculture system? On the particular farm, how do the resources (e.g., soils, built infrastructure) and the operator's skills and preferences fit with that system? What are the existing markets or potential markets that could be created for particular products that are or would be produced? Rather than relying solely on business planning, we should be looking more holistically at how farm operators may find or create viable, local niches in the changing food system.

Focus on Playing to Strengths
This recommendation is aimed especially at those who are either planning to start farming or are in the process of a farm start-up, and to their advisors. On one hand, this recommendation may be seen as stating the obvious; analyzing one's strengths and limits and those of one's potential or current farm situation is a central tenet of business planning. Given this, a key role for advisers and mentors would be helping prospective and actual start-up farmers perform this important analysis. On the other hand, the accounts given by some of our interviewees suggested that some advisors worked from narrowly scripted conceptions that did not account for the great diversity of beginning farmers and the social and ecological contexts of their enterprises. If a key step in the long-term success of a start-up farm is its operator or operators achieving understandings of their "strong suites" — in aptitudes, resources, market opportunities, etc. — and what aspects of their enterprises should be either allocated to other parties or otherwise adjusted, a variety of approaches to this step should be investigated, including Holistic Management, which provides a framework for incorporating the diverse and complex aspects and goals typical of a start-up farm and provides an approach to decision-making for achieving diverse goals (Henderson & North, 2004; Savory & Butterfield, 1999). No start-up farmer will be perfect in all areas, e.g., overall management, production practices, bookkeeping and taxes, marketing, and dealing with employees. For example, some farmers have exceptional abilities for maintaining and repairing equipment and do very well with older and inexpensive used equipment. However, other farmers lack that ability and when they try to use such equipment the result may be unsatisfactory. The latter kind of farmer would likely be better served by investing in newer equipment, finding partners or employees who are strong in this area, or hiring custom operators. Often start-up farmers recognize their limits, but we doubt that anyone would be surprised that inexperienced farmers sometimes may not see that they need help in critical areas. Marketing may be a key example of this. Of course, once such a need is recognized, there is the difficulty of locating, engaging, and paying for whatever equipment and services are needed. Such needs may be best addressed at a level beyond that of the farm,

especially on start-up farms with very limited resources. Given this, an integrated approach to assisting farm start-ups should be considered by both beginning farmers and their proponents.

Conclusions

The situations of the start-up farm households that we interviewed varied widely and so did their needs. Clearly, socio-ecosystem context as well as operator skill and planning affect start-up farmers' experiences. This affects their prospects for continuing in farming and how they subsequently cope with the challenges they face. New farmers also differ greatly in the resources they can muster to surmount the particular challenges they face in starting-up. Obviously, not every beginning farm operator or operating team will be situated in social contexts with all the attributes described above. Nor will they possess all of the personal and business attributes listed. Moreover, not every attribute will be equally important to all kinds of farming enterprises. Clearly, being inconsistent with one or even many of the items does not mean that a farmer will necessarily exit. Moreover, moderation and balance are crucial in dealing with attributes that can be incompatible in the short run, e.g., persistence and perseverance in the face of challenges can inhibit flexibility and innovativeness. Over the long run both are needed. Similarly, not every enterprise will experience or be subject to all possible unfortunate circumstances or fortunate circumstances.

For a study like this one, the logic of the potential applicability of the findings beyond the included cases differs from that of the more typical study based on the logic of inference from statistical theory. Barney Glaser and Anselm Strauss (1965) described a useful framework for thinking about "conveying and judging credibility" of research results of this type. Besides the challenges to researchers in their responsibilities for "conveying" to readers both the features of the "theory" being presented and for indicating how a familiar social setting is illuminated differently in the light of this theory, readers are always responsible for "judging [the] credibility" of the work and its potential utility to them. Glaser and Strauss suggest several considerations for such judgments that include (1) whether the results provide a "meaningful picture" for interpreting or acting in the setting; (2) an assessment of how the researcher(s) developed the conclusions (which we detailed above); and (3) making corrections and adjustments for applying the "theory" to particular uses or situations. Regarding the last consideration, this is a study of start-up farmers in the social and ecological contexts of the Northeastern U.S. At the same time, contextual attributes, such as values and belief systems, trends in concentration in agriculture and the rest of the food system, prevalence of "cheap" energy, urban dominance, etc., found in the region also tend to be present in other areas of the country. In this light, the findings of this research are offered as a source of conceptual understanding for development practitioners and beginning farmers to consider and evaluate.

While arguably those interviewed were relatively typical of the highly varied respondents to the survey in the first phase of the study, they are not necessarily typical of all farm start-ups. In addition, though we lack data on the population of farm start-ups, two categories of beginning farmers seem likely to be underrepresented in our study: those taking over ongoing family farms, and those less apt to seek assistance or information from service providers and information sources like the farm media, libraries, the internet, and farm-related meetings. We surmise that start-up farmers in these two categories were underrepresented because they may be less likely both to attend meetings aimed at prospective and beginning farmers and to actively seek information in the venues we used to contact them. Moreover, we recognize that some people who attempt farm start-ups may be poorly suited to farming or may be poorly prepared for a start-up and, therefore, these findings may not apply well to such cases.

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Farm succession and retirement: Some international comparisons

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Abstract
The increasing age of farmers and the reluctance to transfer management from the owning generation to the successor generation has been well documented by several studies. In this article we review the literature relating to the succession of farm businesses. Drawing on data from the international *FARMTRANSFERS* project, we explore attitudes toward retirement and also rates and patterns of succession in several contrasting countries and states in the United States. Lastly, we discuss the implications of the research and provide recommendations for public policies that would enhance the opportunities for successors to succeed in the continuation of the farm family business.

Key Words
Farm transfers, intergenerational succession, retirement; retirement age, successor effect, succession ladder

Introduction and Literature Review
As with many family businesses, often one of the prime objectives of farm families is to pass on control of a sound and improved business to the next generation (Gasson and Errington, 1993). Despite declining numbers of farms in many parts of the western world, coupled with the expansion of corporate farming, family farming remains of totemic importance. Intergenerational succession represents the renewal of the family farm and can potentially act as a helpful corrective in addressing the apparent increasingly aged population of

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principal farmers. In contrast to many other professions in contemporary society, farming remains a largely inherited occupation and one in which the transfer of business control and ownership to the next generation is arguably one of the most critical stages in the development of the business (Uchiyama, Lobley, Errington, and Yanagimura, 2008). Moreover, evidence suggests that rates of intergenerational succession are much higher in farming than in other self-employed occupations (Laband and Lentz, 1983). And, in the case of the family farm, intergenerational succession tends to also be intrafamilial succession.

For instance, in the United Kingdom families are responsible for most farms and much of the farmed land. A survey of 255 farmers in six areas of England found that 84 percent operated "established family farms" (that is, farms run by operators who are at least the second generation of their family to be farming the same farm or nearby farm), and were responsible for managing 86 percent of the area covered by the survey (Lobley, Errington, McGeorge, Millard, and Potter, 2002). Sometimes, family occupancy of the farm or local farmland was extremely lengthy: 31 percent of established family farmers could trace their family's occupancy of the farm to 1900 or earlier. The main entry route into farming in England remains intergenerational transfer within a family (ADAS, 2004; Lobley, et al., 2002). Similarly, in Australia, despite falling rates of succession, some 94 percent of farms are family-owned and -operated. Many farmers can trace their family's occupation of the farm back three generations or more, and there is evidence of a strong "rural ideology" that prioritizes passing on the farm within the family (Barclay, Foskey, and Reeve, 2005).

Patterns of ownership in the United States are similar to those found in the UK and Australia. In the U.S. over 98 percent of all farms are family farms, and those farm families own 93.5 percent of all farmland (Hoppe and Banker, 2006). In Iowa, the average length of ownership of family farms was 83 years (Korsching, Lasley, and Gruber, 2007). Farmers in the eastern United States may, in some cases, trace their ownership to the early 17th century; an example is the Shirley Plantation in Virginia, which was established in 1613 (Clay, 2006). In the western United States, farm family ownership of land may be more recent in origin. Indeed, the last homestead land patent was granted in Alaska in 1988 (National Park Service, 2007).

The intergenerational and intrafamilial transfer of farms can be a source of great strength. In most cases the successor is a child of the manager, and in addition to physical assets, intangible assets (e.g., tacit knowledge) are transferred to the new business principal (Uchiyama, et al., 2008). The highly detailed and locally specific knowledge associated with successful intergenerational transfers can prove vital for effective agricultural and environmental management and can engender a sense of intergenerational accountability (Burton, Mansfield, Schwarz, Brown, and Convery, 2005). The source of such strength can also be a source of problems, however, not least of which is the potential for conflict between the generations, avoidance of discussing the issues (Barclay, et al., 2005; Symes, 1990) and sometimes the treatment of a successor as a "farmer's boy" (Gasson and Errington,1993). In the latter case, a successor is essentially treated as a hired worker, given little opportunity to develop the managerial skills needed to operate the family business, and kept in place by the promise that the eventual reward will be ownership of the family farm (Lobley, 2010).

Succession is not a single event but is (or should be) a process that takes place over an extended period of time. Succession is the process of transferring the management of business assets. This may involve the transfer of the management of the "home farm" to a successor (or multiple successors), or it may involve the transfer of the necessary capital to establish a new farm business. Accordingly, it is possible to distinguish between succession to the farm and succession to the occupation of farming. In addition to succeeding to the farm and/or the occupation, the successor also benefits from the transfer of skills and, frequently, less tangible assets such as a detailed knowledge of the home farm, its microclimate and its idiosyncrasies (Errington and Lobley, 2002).

The mirror image of succession is retirement. Just as succession is a process rather than a single event, retirement from farming is not a single act or event but a series of transitions (Rosenblatt and Anderson, 1981). The self-employed generally face a greater range of opportunities in terms of the balance between their time devoted to work and time devoted to other activities and in the case of farming, in particular, the term "retirement" can cover a wide range of situations. At one extreme, it can refer to the process of selling and leaving farming altogether. Frequently however, it may involve withdrawal from some of the more arduous tasks alongside a continuing day-to-day involvement in the business. For some, full retirement is achieved by selling, moving away from the farm, and no longer relying on a farm to produce retirement income. For others, a pathway of semiretirement with retirement income that is to some extent dependent on farm income may, after a series of transitions, eventually lead to full retirement and a move out of the farmhouse or even off the farm entirely. Finally, inheritance denotes the legal transfer of ownership of business assets.[1] Whilst conceptually separate, these processes are obviously linked, the timing and degree of ease of the process can have considerable implications for the farm business as well as the individuals involved in that business.

The twin processes of succession and retirement can be a time of considerable financial and emotional stress on farm households (Burton and Walford, 2005). In addition, evidence from the U.S. and Europe suggests that farm business performance and farm development can be influenced by succession issues (e.g. Calus, Huylenbroeck, and Lierde, 2008; Mishra and El-Osta, 2008; Potter and Lobley, 1992; Boehlje and Eidman, 1984; Harl, 1972). Such influences can operate in a number of ways. For instance the "succession effect" (Potter and Lobley, 1996) refers to the impact of the *expectation* of succession on the farm business. Evidence suggests that farms may be developed over a long period, in order to provide a business capable of supporting two generations or to yield sufficient capital to establish successors on separate holdings. For instance, Calus, et al. (2008) found that the value of total farm assets was significantly higher on Belgian farms where a successor was present. Similarly, using data from the 2001 Agricultural Resource Management Survey, Mishra and El-Osta (2008) identified a positive association between farm capital stock and succession decisions on U.S. farms.[2] The succession effect can be reinforced by the "successor effect" (Potter and Lobley, 1996), that is, the impact of the successors themselves, as they gradually (or sometimes rapidly) assume managerial control. Successors often return from a period of agricultural training with new ideas and an innovative approach to the business. The extent of their impact will be influenced by how rapidly they ascend the "succession ladder" (Errington and Lobley, 2002).

Finally, the "retirement effect" (Potter and Lobley 1996) can be identified toward the end of a farmer's career and is most pronounced where succession has been ruled out. In these cases farm operators frequently disengage or even withdraw from agriculture, by downsizing to reduce workload, letting or selling land, and frequently farming their remaining land less intensively. In some instances, these farmers can be regarded as "capital consumers" (Lobley and Potter, 2004), progressively liquidating farm assets to provide an income as part of a gradual process of leaving farming. For example, evidence from Belgium indicates that older farmers without successors begin to disinvest and that total asset values can decline toward liquidation levels (Calus, et al., 2008). In Ireland, Symes found that farms lacking a successor were less likely to be managed intensively, and that "the production cycle declines closer to a subsistence mode in old age than at any other point in the life cycle" (Symes, 1973, p. 101).

[1] This does not include *inter vivos* gifting and purchase.

[2] In both these cases (Calus, et al., 2008; Mishra and El-Osta, 2008), statistical *associations* raise questions regarding *causality*. Do farms grow because they have a successor, or do larger farms attract a successor more easily? The concept of the *succession effect* would suggest the former, with growth and investment then reinforced by the *successor effect*.

Given that farm succession and farm business development influence each other, the process of succession has implications for the social and economic sustainability of the family farm and the economy and community in which it operates. Clearly succession is, or should be, of importance to policymakers, given the evidence that the process has a considerable influence on farmer behavior. In addition, since facilitating the timely transfer of farm businesses is an explicit objective of many policy initiatives, it is important that policymakers understand the processes of intergenerational transfer. For farm advisers, a fuller understanding of the process of succession is important because at the very time when members of the new generation are seeking to improve productivity or business viability through investment, members of the older generation may be engaged in disinvestment to provide for their retirement. This is particularly likely where no separate pension provision has been made and the farm business itself is expected to provide retirement funds. Thus, advisers need to consider how to maintain a viable business for the next generation, whilst minimizing the financial and emotional stress increasingly associated with the pursuit of this goal. Against this background, this paper compares rates and patterns of succession in the U.S. (in the states of Iowa, Virginia, North Carolina, Pennsylvania and New Jersey), Canada, England and Australia. It identifies and compares plans for retirement and the financing of retirement in these countries. It also explores similarities and differences in routes to succession before going on to consider some implications for policy.

Applied Research Methods

This paper draws on both published and unpublished data from the *FARMTRANSFERS* project, a series of international comparative studies replicating an original survey by Errington and Tranter (1991). This international collaboration was initiated by the late Professor Andrew Errington of The University of Plymouth and John R. Baker of the Beginning Farmer Center, Iowa State University.

The project is based on a survey questionnaire originally developed by Professor Errington and subsequently replicated in a number of different countries (see table 1) to provide a standard set of data to be added to the *FARMTRANSFERS* database. *FARMTRANSFERS* is currently directed by John Baker, Matt Lobley (University of Exeter, UK) and Ian Whitehead (University of Plymouth, UK). To date over 15,600 farmers have completed the copyrighted *FARMTRANSFERS* questionnaire. The details of the survey in several countries have been noted in other papers (such as Uchiyama, et al., 2008; Barclay, et al., 2005; Errington, 1998; Errington and Lobley, 2002; Baker, Duffy, and Lamberti, 2001). Data is collected through a postal questionnaire covering basic background information about the farm (e.g., size, tenure, and enterprise structure) and farm family demographics (e.g., age and household composition). Detailed information is also recorded regarding retirement and succession plans, sources of advice and information, and the delegation of decisionmaking responsibility between the principal farmer and his or her successor(s). Given the wide range of social, cultural, and economic differences in the different countries and U.S. states participating in *FARMTRANSFERS*, modifications are made to the questionnaire to reflect such differences, with the agreement of the project directors. The questionnaires administered by country are referred to as "replications."

It should be noted that the year of the survey and sample size for each country reported here is: Iowa, 2006 (972); Pennsylvania and New Jersey, 2005 (1,271); North Carolina, 2005 (2,095), Australia, 2004 (790); England, 1997 (491); Ontario and Quebec, 1997 (1,277). (See table 1 for a list of all *FARMTRANSFERS* surveys between 1991 and 2010.) The individual replications of the survey reported here span close to a decade and the sample sizes vary considerably. However, these specific replications have been selected for analysis in order to illustrate the diverse range of socioeconomic and cultural contexts in which the survey has been conducted. Clearly, the *FARMTRANSFERS* methodology is not without its limitations, including the variation in survey year

and the limitations of the standardized postal questionnaire format. Nevertheless, this approach yields a range of quantitative data relating to the pattern, process, and speed of succession and retirement, which provide a firm base for future in-depth inquiries. Moreover, it allows for an international comparison of the results, which is not possible using other data sets. As such, the data is invaluable in order to identify common elements of succession plans, determine educational needs of farm business owners, compare succession patterns internationally, and create a resource useful to farm business operators for future succession activities.

Table 1. *FARMTRANSFERS* Surveys Conducted 1991–2010

1991 England	2003 Germany	2005 Pennsylvania & New Jersey
1993 France	2003 Poland	2005 North Carolina
1997 Canada (Ontario & Quebec)	2003 Switzerland	2006 Iowa
1997 England	2003 Austria	2006 Wisconsin
2000 Iowa	2004 California (Humboldt County)	2009 Romania
2001 Japan	2004 Australia	2010 Tennessee
2001 Virginia		

Results

Rates of Succession

In terms of the rate of succession (i.e., the proportion of farmers with an identified successor), figure 1 provides some international comparisons and illustrates some notable differences. For instance, England has a higher rate of succession selection compared with Canada, Australia, and several U.S. states. Indeed, Iowa, Virginia, Pennsylvania, New Jersey, and North Carolina all have much lower rates of succession. In addition, figure 1 shows that the number of daughter or daughter-in-law successors internationally is low. The identification of a successor depends, at least in part, on the age of the principal farmer. On average, respondents to the survey in England were older than their Canadian counterparts, which might explain some of the difference in rates of succession. However, farmers in the U.S. replications are noticeably older on average and yet have much lower rates of succession selection (see figure 1).

Figure 2 explores in greater detail the association between the age of the principal farmer and the likelihood of having secured a successor. Generally, the younger the farmer, the lower the rate of expected succession, with Australia being an exception to this pattern. Data from England and Canada show that the expectation of succession increases noticeably with age. On average, succession rates in Iowa, Virginia, and North Carolina remain fairly low.

Delegation of Managerial Responsibilities

As previously discussed, a major objective of the international *FARMTRANSFERS* project is to examine the process of succession or the process of transferring managerial control and other intangible assets, such as site- or farm-specific knowledge. In order to do this, respondents are asked to indicate if a number of specific decisions are made by the principal farmer alone, shared with the successor, or made by the successor alone. The tasks presented to the respondents represent technical, tactical, strategic planning, managerial, and financial aspects of the farm operation. Table 2 compares the international data on task delegation where each decision was assigned a score ranging from 1 (farmers themselves are solely responsible) to 5 (successors are solely responsible). A score ranging from 2 to 4 represents shared responsibility between the farmer and successor.

The results show that financial decisions are most likely to be made by the principal farmer without any help from the successor. The data also show that if successors are going to be solely responsible for a decision, that decision would most likely involve livestock management, and the selection, recruitment, and supervision of employees. With one or two exceptions, the types of decisions most frequently delegated to the successors and those not delegated to the successor are similar across international lines.

Figure 1. Identification of a successor: some international comparisons

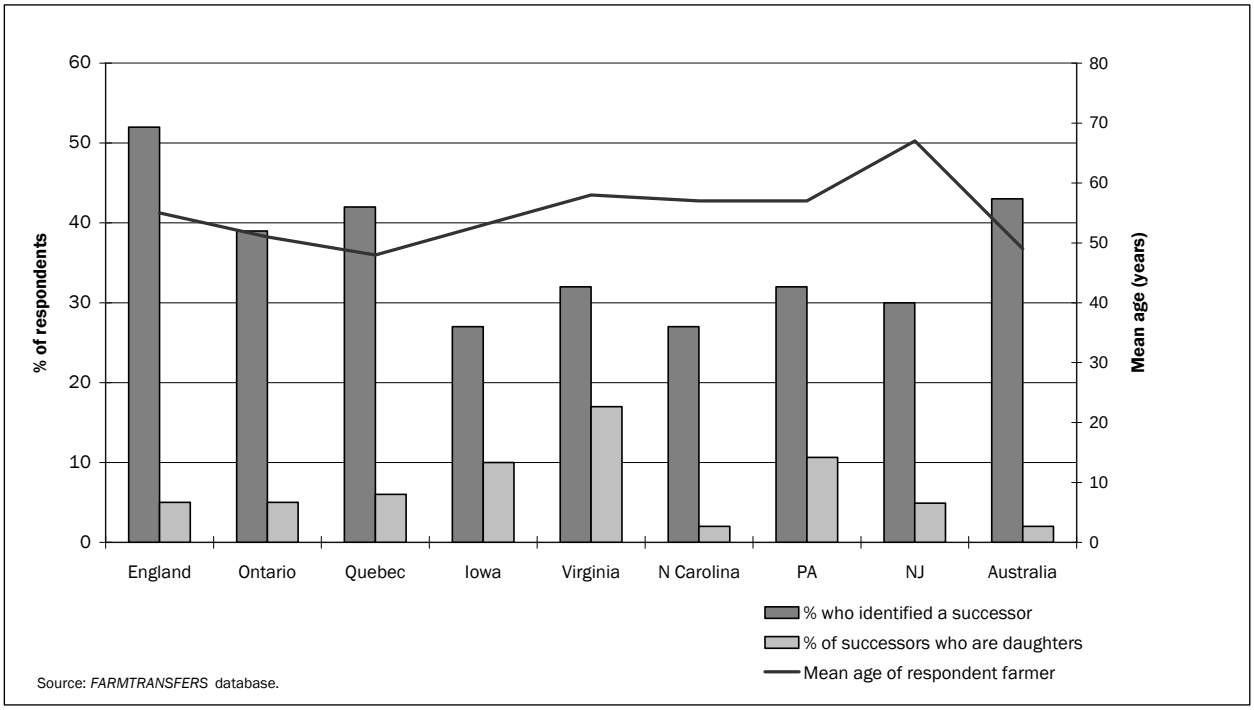


Figure 2. The association between identification of a successor and age of principal farmer
(percentage of farmers responding that they have identified a successor, by age group)

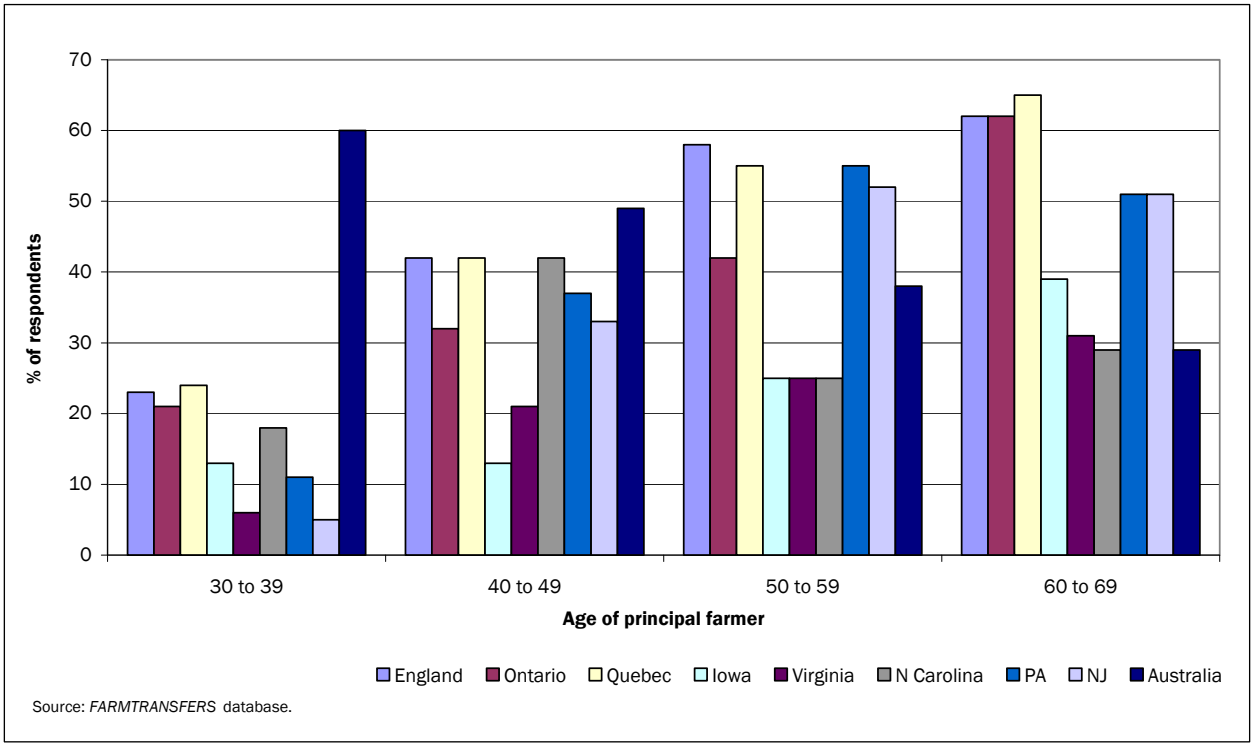


Table 2. International Comparison of Task Delegation Score

Activity or Decision	England 1997	Ontario 1997	Quebec 1997	Iowa 2006	Virginia 2001	NC* 2005	PA* 2005	NJ* 2005	Australia 2004
Decides when to pay bills	1	1	1	2	1	1	1	1	1
Identifies sources and negotiates loans and finance	2	2	2	1	2	2	2	2	2
Decides long-term balance and type of enterprises	6	7	10	12	5	7	12	13	3
Decides and plans capital projects	5	5	8	3	7	4	7	8	4
Negotiates purchase of machines and equipment	8	6	9	8	8	5	5	5	5
Decides when to sell crops or livestock	4	4	5	3	5	6	8	9	6
Negotiates sales of crops or livestock	3	3	3	3	4	3	6	6	7
Makes annual crop or livestock plans	7	8	4	7	9	10	11	8	7
Decides level of inputs used	13	11	6	6	3		9	10	8
Plans day-to-day work	9	12	11	10	12	9	9	7	9
Decides timing of operations or activities	10	9	7	11	10	8	7	7	10
Decides type and make of machines and equipment	11	10	12	13	10	12	10	9	11
Decides work method or way jobs are done	12	13	13	9	13	11	12	12	12

Note: The numbers represent the rank order of decisionmaking authority retained by the older generation. 1 represents the activity most identified as retained solely by the older generation.

Note: One number may appear more than once for the same state or county. This is due to the fact that some activities and decisions had the same percentages attributed to them.

*Pennsylvania, New Jersey, and North Carolina surveys differed from those represented by the data in table 2 above. Therefore, not all activities and decisions have a rank score for Pennsylvania and New Jersey.

The Succession Ladder

The delegation of decisions and tasks can be referred to as the succession ladder,[3] or a ladder of responsibility the successor will climb (Errington, 1998). In this model, the first type of decisions delegated to the successor are technical decisions, those involving the type and level of production inputs, such as feed or fertilizers, along with the tactical decisions concerned with the day-to-day planning of the farm operation. The next decisions delegated are the strategic planning decisions, such as the mix and type of enterprises. Successors will then make decisions such as when to hire more employees, and the recruitment, selection, and supervision of employees. Further up the ladder of

[3] The concept of the succession ladder is well established and was first identified empirically by Commins and Kelleher (1973) in Ireland. Subsequent work, for example in New Zealand (Keating and Little, 1991) and in the UK (Hastings, 1984; Errington and Tranter, 1991), provides further empirical support for "the existence of a ladder of responsibility which successors climb *en route* to the acquisition of full managerial control" (Gasson and Errington, 1993, p. 213). Hastings (1984) made a major contribution to understanding the different decision domains (e.g., technical, strategic) and the order in which a successor passes though each domain. One of the contributions of *FARMTRANSFERS* has been to demonstrate the existence of the succession ladder and the broadly similar order of individual "rungs" on the ladder in many different international contexts (e.g., Uchiyama, et al., 2008).

responsibility, successors are then responsible for financial decisions, such as negotiating sales of crops or livestock, and identifying sources of and negotiating loans and financing. Finally, successors are responsible for deciding when to pay bills. This is most likely be one of the last areas of responsibility delegated to the successor (Errington, 1998). Such decisions, technical, tactical, strategic, and financial, are representative of rungs on the succession ladder.

Data from the international *FARMTRANSFERS* project found that France experiences a faster succession process than England, with Canada falling in the middle of the spectrum. Iowa has been found to have the slowest succession rate (Barclay, et al., 2005). Uchiyama, et al. (2008) found a relationship between the age of the successor and the amount of delegation. Specifically, as successors grow older, more tasks and decisions are delegated. However, while delegation of managerial authority increases evenly in Canada and Iowa, in England and Virginia the increase in delegation drops off after the age of 40 (Uchiyama, et al., 2008). An Australian study found that Australian farmers are more likely to delegate greater amount of managerial responsibility than farmers in Iowa and England, and a lesser amount than farmers in Canada and France (Barclay, 2005). See Uchiyama, et al. (2008) for further analysis of the association between delegation and age of successor and principal farmer.

The Succession Process

Previous studies have discussed the different routes that successors may take before taking over the farm operation (Uchiyama, et al., 2008). The two principal routes identified are: (1) the *direct route,* where successors go directly into farming after they leave school, and (2) the *diversion route,* where successors are employed in an off-farm job after leaving school and then return to the home farm operation at a later date. This is sometimes referred to as a professional detour (Gasson and Errington, 1993; Uchiyama, et al., 2008).

The succession route followed is likely to be influenced by a number of factors, including the availability of alternative employment and cultural norms regarding the value of nonfarm work. Uchiyama and colleagues found that farm size is a predictor of succession route. Generally, farms that are larger provide more opportunity for the older and younger generations to work side by side. Those successors who are on the direct route to succession are more likely than successors on the diversion route to develop intangible assets such as managerial skills (Uchiyama et al., 2008). In addition, successors who are from smaller farming operations are more likely to be employed off the farm, except for those successors in England and Virginia.

FARMTRANSFERS project results can be used to explore patterns of succession based on the successor's current farm activity and the degree of decisionmaking authority that he or she has (Errington and Lobley, 2002). Errington and Lobley identified two distinctions in the pattern of succession: the responsibility exercised by the successor in making decisions on the farm, and the extent to which he or she is able to run an autonomous enterprise (Errington and Lobley, 2002). They used this to empirically identify different types of successors previously conceived of as conceptual "ideal types" by Gasson and Errington (1993).

The first category of successor is the *Farmer's Boy,* in which the successor has little or no responsibility for decisionmaking and provides mainly manual labor on the farm. This category is common in England, as demonstrated by the *FARMTRANSFERS* Surveys (e.g., Uchiyama, et al., 2008; Errington and Lobley, 2002). The second category is the *Separate Enterprise,* where the home farm operation is large enough to support a separate enterprise run by the successor. This category allows the successor to develop managerial skills and also allows for some financial autonomy (Gasson and Errington, 1993). The third category of successor is the *Stand-By Holding,* in which the successor is set up on a separate farm in order to develop his or her farming skills. Although the successor might share machinery or labor at some point, he or she still remains independent of

the farmer. The last category of successor is *Partnership.* In a partnership, the farmer works with the successor and shares responsibility for decisionmaking. A formal partnership agreement may even be executed (Gasson and Errington, 1993).

Successors in Canada and the U.S. are more likely to take a professional detour route — a nonfarm job right out of school before returning to the farm operation. Few U.S. successors run a stand by farm. English successors are more likely to be in the farmer's boy category for a longer period of time compared with their counterparts in the U.S. and Canada. English and Canadian successors are more likely to run a separate enterprise to develop farming skills necessary for farm operation (Lobley and Errington, 1998).

Retirement

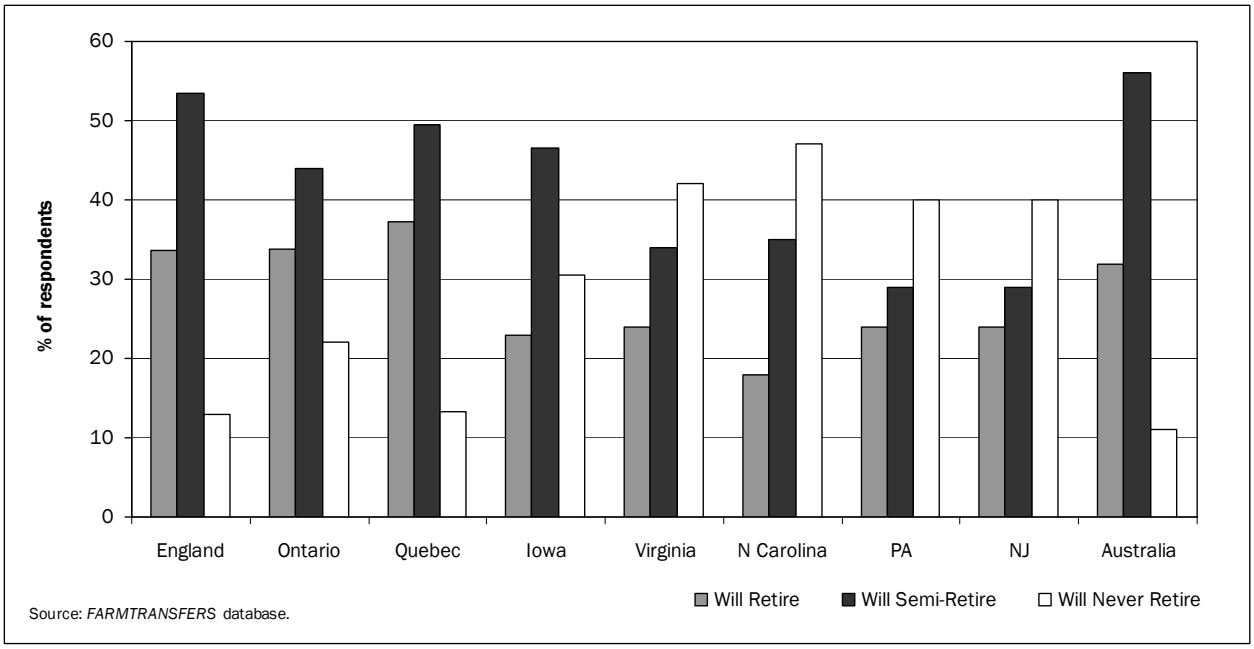
Succession and retirement are intimately interlinked. The incorporation of a successor into the business can offer the principal farmer the opportunity to semiretire, while in equal measure, the unwillingness of a senior farmer to step back can hinder the succession process. Evidence from *FARMTRANSFERS* surveys indicates that farmers in Iowa, Virginia, and North Carolina are more likely to remain employed on the farm operation, are less likely to semiretire from farming, and indicate that they will never retire. Farmers in Australia, England, Ontario, and Quebec are more likely to experience semiretirement or full retirement from farming (see figure 3). The identification of a successor is associated with a path of semiretirement from farming, in that those farmers who have identified a successor are more likely to experience some form of semiretirement. This trend occurs regardless of nationality. The presence of a successor might make semiretirement a realistic option for farmers who may otherwise face a choice of continuing to work full-time or completely retiring. Interestingly, farmers are less likely to choose a form of semiretirement if their successors are employed off the farm (Uchiyama, et al., 2008).

Not only do retirement plans vary significantly across the *FARMTRANSFERS* replications being considered here, but so does the average age of planned retirement. As figure 4 indicates, farmers in the United States tend to plan to retire at an older age than their counterparts in Canada, France, and England. Australian farmers, however, indicated in a 2004 survey that the average age of retirement is 65, similar to U.S. farmers (Barclay, et al., 2005).

The ability to finance retirement is likely to be one of a number of factors influencing retirement plans. Figure 5 presents comparative data on anticipated sources of retirement income and illustrates some significant differences between *FARMTRANSFERS* replications. The two Canadian replications (Ontario and Quebec) are notable for the significance of the sale of farm land or other farm assets in order to fund retirement. Farmers in France, on the other hand, gain the largest proportion (48 percent) of their retirement income from social security payments, while farmers in England tend to gain a significant proportion of their retirement income from private pension provision.

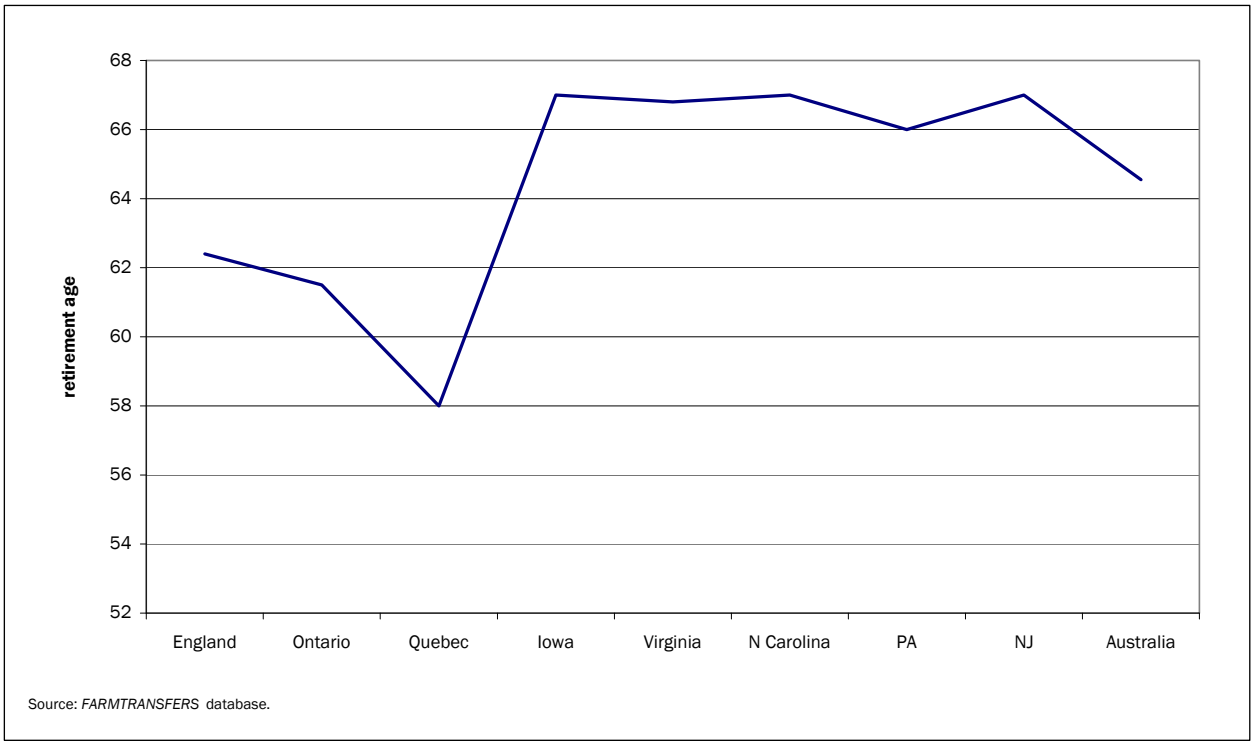
The decision to retire and step back from a career that is often characterized as a "way of life," and one in which much of an individual's and family's social, cultural, and economic history and identity is conjoined, is not always an easy decision to reach. Advice on retirement planning can therefore be very important. Table 3 shows the comparison between countries of farmer respondents ages 50–59 and their discussions of retirement. Canadian and Iowan farmers are more likely to discuss their retirement plans with family members; however, farmers in England are less likely to do so. Previous studies have shown that retirement discussions with family members often increase after the identification of a successor (Uchiyama, et al., 2008), although this varies by location.

Figure 3. Farmers retirement plans: some international comparisons



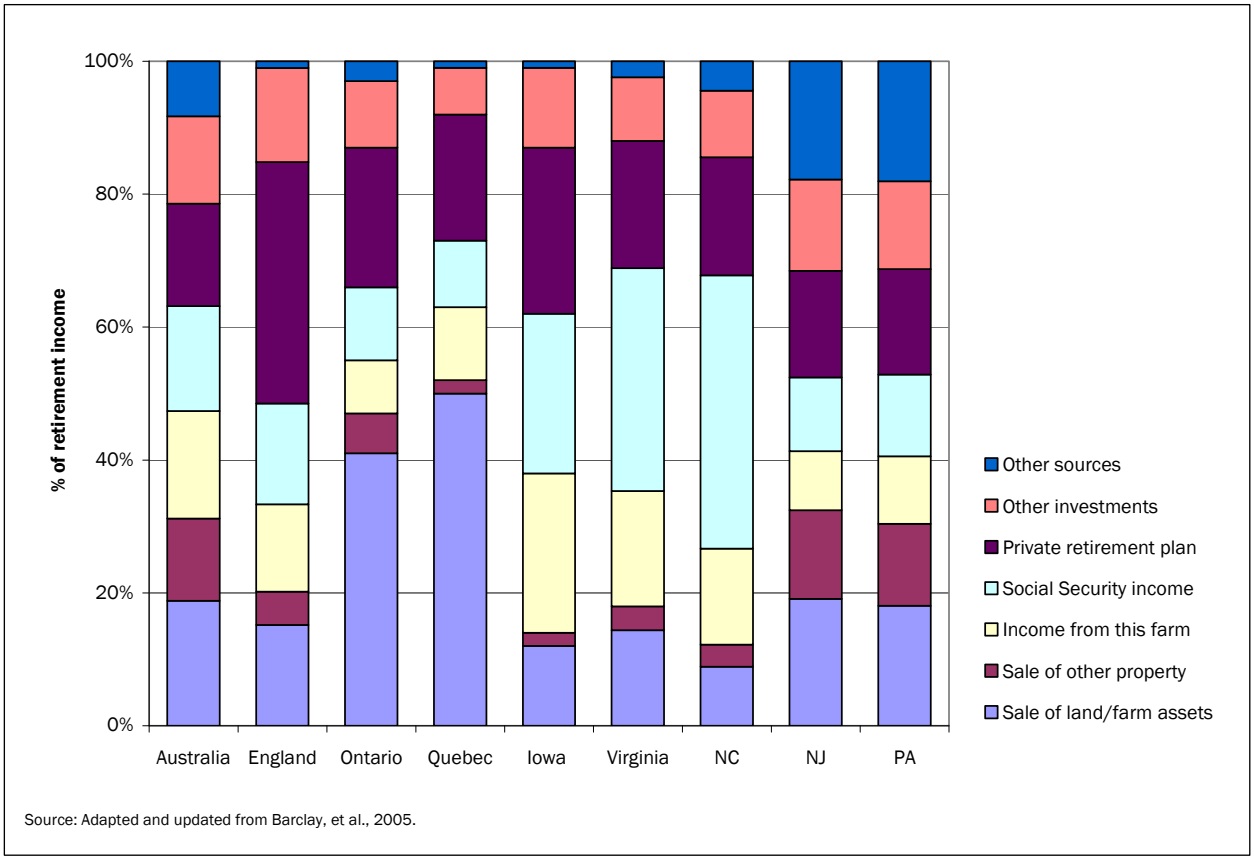
Source: *FARMTRANSFERS* database.

Figure 4. Mean anticipated retirement age



Source: *FARMTRANSFERS* database.

Figure 5. Anticipated sources of retirement income: Some international comparisons



Source: Adapted and updated from Barclay, et al., 2005.

Table 3. International retirement discussions

(% of respondents)

Type of discussant	England	Ontario	Quebec	IA	VA	NC	PA	NJ	Australia
Family	28	63	63	46	66	25	31	31	59
Lawyer	14	7	10	17	10	0	9	9	9
Banker	7	10	7	8	1	0	3	3	10
Accountant	39	38	33	19	11	0	13	13	40
Farm consultant	0	5	11	3	2	0	2	2	8
Other farm advisor	4	7	6	0	0	7	4	4	9
Other	7	10	6	3	1	1	2	2	5
No one	44	28	28	47	30	67	21	21	9

Total sums to more than 100%, as some respondents indicated more than one category.

Source: Barclay, et al., 2005; *FARMTRANSFERS* database.

Discussion

Policy Implications

This section begins with a brief review of contemporary challenges for agriculture. This provides the context in which to reflect on the place of family farms in addressing these challenges and the importance of timely and effective transfers of property and/or businesses in the farming industry.

Challenges for Agriculture at Global, Regional, and Local Levels

Arguably, the last two decades have presented the most significant challenges for agriculture in the post-war period. The focus of attention centers on the capacity of resources and practices in global agriculture to meet increasing demands for food, from rising populations and changing diets, along with a raft of other goods (i.e., bioenergy and industrial crops) and services (i.e., conservation and recreation) in the context of volatile commodity prices, diminishing nonrenewable resources, and climate change. Concurrent with such challenges, there is increasing evidence of continued degradation of the soil arising from continued unsustainable, intensive agricultural practices in areas of the world, including Australia, the U.S. and the UK. A decade ago, the Policy Commission on the Future of Food and Farming in the UK (Policy Commission, 2002) warned of the unsustainability of commercial farming practices. More recently, the UK Department of Environment, Food and Rural Affairs (DEFRA) has launched the country's first Food Security Assessment (DEFRA, 2009a), followed in close succession with the publication of DEFRA's vision 2030 — Safeguarding Our Soils: A Strategy for England (DEFRA, 2009b).

Similarly, interest in beginning and farm succession planning has increased in the United States. The 2008 farm bill, part of the Food, Conservation, and Energy Act of 2008, established the Beginning Farmer/Rancher Development Program. The goal of the program is to enhance the food security of the United States by providing beginning farmers and ranchers and their families with the necessary knowledge and skills to make decisions concerning the future sustainable farming of their properties. The challenges to farming will vary geographically in nature and degree. In Eastern Europe, they will differ from those of Eastern Australia or the uplands of England. In a recent review of the challenges to rural land management, Hodge (2009, p. 652) states that "farm businesses need to develop their resilience in the face of greater exposure to the volatilities of world markets and reduced level of support under agricultural policy," as well as the uncertainties of climate change. Such "resilience" is the preserve of many family farms, and arguments for this are familiar. Jones (1996, p. 197) refers to the importance of the "intimate coaxing style of management" of family farms and advantages as "a long term institution protecting not only its economic base, but also its own place and surrounding." Continuity of management, through close relationships between family members, and the "sharing" of capital assets and the detailed knowledge of the farm resource, all contribute to the strength of family farms. The successors of the future will have to be highly motivated, skilled in technical and business matters, and capable of pre-empting change and planning appropriate responses. Without this, the risk is that the cornerstone of agricultural business in these countries will fail to meet national and global expectations.

Impacts of Effective and Less Effective Succession

As an entry route to agriculture, succession can have a significant impact on the contribution of farming in terms of economic, environmental, and social benefits. It has been argued that "succession and the failure of succession can have a powerful influence on the development trajectory of a farm" Lobley (2010, p. 1). Effectiveness can perhaps be measured first in terms of the presence of a successor to the business, and, second, in the timeliness and "smoothness" of transfer to that successor of the business. As previously mentioned, the business and the industry as a whole can derive benefit from the so-called "succession effect," which arises from the early identification of a successor and leads to determined development of the business to a state where two generations can be supported. Similarly, previous discussion has

also centered on the "successor effect," a renewed enthusiasm for the business, as the parties begin to share managerial responsibilities. In challenging times, these two "effects" are clearly in the interests of efficient farming for the business and the country, providing perhaps the best model for succession. Clearly, there are policy implications in terms of providing favorable circumstances for the achievement of such effects and the benefits to be gained from them.

Where a successor has been identified, the sequential transfer of the "reins of the business" may be slower than optimal. This has been identified as the case in the latest survey for England (1997), as well as in Germany (2003), Austria (2003) and North Carolina (2005), where the "farmer's boy" category of successor is dominant. In policy terms, a high proportion of "farmer's boy" successors suggests potential lack of wider farming knowledge, business and managerial skills, and the motivation required to drive the business forward in such uncertain times. Multiplied up, this may lead to farm businesses less well placed to adapt to and succeed in responding to the challenges of the future. Closely related to this is the barrier of low retirement rates in farming, identified in research conducted for DEFRA on Entry to and Exit from Farming in the UK (ADAS, 2004) and confirmed as an international feature of farm businesses, earlier in this paper. For many, such a strong reluctance to retire is due to the decision to farm as a long-term lifestyle choice. However, other barriers may also exist, including inadequacy of pension provision and the lack of affordable housing for the retiree or the successor.

Of course, there may be other causes for a lack of a successor and implications if that occurs. In some cases farmers may just not have had children. In others, the farmer's children may become disinterested in the family business to the extent of losing any intention to succeed. This may be a product of the "late" recognition of the need for and discussion with potential successors. *FARMTRANSFERS* survey findings indicate successor age to range between 40 and 60 years old, with a wider range of ages at which the principal farmer identifies the successor. Without a clear successor, the business, the land and the building complement stand to be transferred to an operator new to the farmland, whether retained as a whole unit or separate lots. A time lag thus begins between takeover of this farm resource and its effective management, during which time obstacles may arise, financial and otherwise, to its continuing use as farmland. Where environmental objectives are important, such as for nature conservation to protect particular habitats, this lag time could be particularly important and may result in unnoticed decline.

Finally, in terms of implications for wider society, commentators have expressed concern over the apparent aging of the farming community. Although not commonly the focus of succession research, investigations are required into the impact of earlier succession on the relationships between farm and community and the potential for younger farmers and their families to contribute to rural development.

Conclusions

There is much to consider here for researchers, policymakers, farm business advisers and farm business principals and prospective successors. In terms of research there is a continuing need to develop a clearer understanding of the process of intergenerational transfer in countries across the globe. Obvious research gaps exist in space (geographical coverage) as well as in time (up-to-date evidence). Such deficiencies preclude the spread of good practice. On the question of retirement, qualitative research is needed to investigate the key influences over decisions in this regard. What scope is there to encourage planned retirement more broadly in the farming industry?

In terms of policy, consideration focuses on three areas: first, measures to assist with increasing the likelihood of succession, that is, the presence of a successor motivated to take over the oft-mentioned "reins of the business"; second, measures to encourage early identification of, and discussions with, the successor(s), to include the

development of plans for "handing over the reins of the business"; and, third, measures designed to reduce the apparent barriers to retirement. As previously mentioned, replications within the *FARMTRANSFERS* project across a range of countries and states has provided evidence highlighting, perhaps not surprisingly, variations in some aspects of retirement and succession issues. The relevance of the three types of measures mentioned above therefore also will vary.

The attraction of agriculture as a career is crucial to continued motivation of potential successors to take on the family farm. Student applications to agricultural colleges and universities have decreased dramatically in the last three decades in the UK, resulting in the reduction of postschool educational provision in agriculture as departments close across the country. To reverse this situation, a redoubling of effort is required to convey the message that sustainable agriculture has a key role to play in a future of global population growth (food security), pressures to reduce carbon emissions (waste management and renewable energy opportunities), and climate change. Rewarding career opportunities will continue to develop in these areas. Such messages need to be conveyed convincingly by government, educational institutions, and farming organizations. Resources should also be made available to deal with future increases in demand for training and education in what must be seen as a renaissance in the farming industry. The main objective here is to increase the potential for a heightened "successor" effect in farm businesses — the return of enthusiastic and well trained young farmers to their family businesses.

As for the second focus of policy action, the *FARMTRANSFERS* project has uncovered variation in the age at which the principal farmer identifies a successor. In some countries, such as Australia, this is achieved earlier than others. Late commitment to a successor can result in unprepared semiretirees or full retirees, unprepared successors, and unprepared businesses. Mere identification of a successor is not enough; this project has also seen variation in the rate and approach to handing over the reins. Retirement offers opportunities for not only successors but also for retirees wishing to reduce their involvement physically, managerially, and financially over a period of time. For the industry, a mutually agreed upon retirement program can benefit all parties and the industry generally. In many other businesses, full retirement is the norm. In family farms, the knowledge and skills of the retiree are retained as a valuable asset to the business. A planned retirement program is therefore beneficial. Where appropriate, consideration should be given to funding for or direct provision of advice and training for farm business succession planning, through seminars, workshops, consultations, and publications, either directly with farming principals and prospective successors or via farm advisers. The main objectives here would to increase the "succession effect" by encouraging early identification and discussion between parties and to reduce the likelihood of the "farmer's boy" model of successors, identified as typical in England.

Finally, this paper has confirmed the international significance of barriers to retirement in the industry. Again, these vary geographically and may include a combination of internally imposed issues and/or externally imposed constraints. Regarding the former, lack of motivation to retire is the product of a range of actual or perceived issues which might include the importance of farming as "a way of life," including home and stock, the perception of a shortage of appropriate skills for other opportunities in retirement, and the reluctance to consider training to acquire new skills. In addition, lack of early planning may lead to inadequate pension provisions, causing the need for continued dependence on the farm business. Policy directions involving support for advice and "training for retirement," mentioned above, would be appropriate here.

In terms of externally imposed constraints, a lack of affordable housing in the locality may be a major problem. Retirees may prefer to remain in the vicinity of the family farm and more flexible approaches to planning decisions may need to be

considered. Financial constraints for the successor who is expected to take on some or all of the business assets could also delay decisionmaking. Improvement in the availability of loans on manageable terms, along with the review of grant provision to encourage successors to take over and develop their family businesses, could be appropriate, depending on prevailing "local" (state or national) circumstances. The international prominence of succession as the means of farm transfer should, alone, suggest the need for greater understanding and effort, to ensure that farm businesses have the best chance to remain (or become) strong and competitive, with the complement of assets to face the challenges of the future. 

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Expanding the boundaries of beginning farmer training and program development: A review of contemporary initiatives to cultivate a new generation of American farmers

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Abstract
Beginning farmer training and program development in United States is one of the most significant yet poorly understood areas of agriculture, food system, and community development research and practice. This article offers a review of the social context informing recent beginning farmer educational programming in order to shed light on its development, purpose, and future trajectory. We provide several illustrations of best practices to support our main point that adult agricultural education for beginning farmers is taking on new forms and patterns to support and sustain a new generation of famers. As such it is vitalizing new opportunities to generate and exchange information and knowledge for sustainable agriculture. While these examples appear promising, the article concludes with recommendations for researchers and practitioners to expand the boundaries of what constitutes meaningful education for beginning farmers who are interested in sustainable food system models and practices.

Keywords
Adult agricultural education, beginning farmer, best practices, sustainable agriculture

Introduction
Beginning farmer training and program development is growing at a rapid rate throughout the United States.[1] Development practitioners, educators, researchers, students, and farmers alike are currently experiencing the largest policy and

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[1] Current beginning farmer definitions vary regionally, as they do nationally, and are the subject of current programmatic interest. We follow the USDA definition whereby "beginning farmers and ranchers are identified as those who have operated a farm or ranch for 10 years or less either as a sole operator or with others who have operated a farm or ranch for 10 years or less" (Ahearn & Newton, 2009, p. 1). We use the term "beginning farmer" to include "beginning farmers and ranchers," unless otherwise noted. We recognize, however, that a number of terms referring to "beginning farmer" are used interchangeably by other organizations, such as "prospective farmer" (e.g., farmers who have not yet begun to farm) and "start-up farmer" (e.g., farmers who have been farming anywhere from one to ten years).

program response aimed at creating new opportunities for people who have an interest in agriculture to begin farming. For instance, in fall 2009 the U.S. Department of Agriculture (USDA) awarded roughly $19 million through the Beginning Farmer and Rancher Development Program (BFRDP). This first-time competitive grant program signifies an important point in time in the movement to support local and regional training, education, outreach, and technically based initiatives to address the critical needs of beginning farmers across the United States. Such a movement rests on a robust foundation built by many educators, scholars, and decision-makers whose advocacy aims are to develop viable community food systems that meet the needs of the next generation. The BFRDP, for example, was first authorized in the Farm Security and Rural Investment Act of 2002 (Farm Security and Rural Investment Act, 2002). The program remained dormant until mandatory funding for beginning farmer provisions was included in the Food, Conservation, and Energy Act of 2008 (Food, Conservation, and Energy Act, 2008). Of course, the history of beginning farmer educational programming can be traced to such earlier policy implementations as the 1992 Agricultural Credit Improvement Act, the Advisory Committee on Beginning Farmers and Ranchers in 1998, and the 2006 Small Farms and Beginning Farmers and Ranchers Regulation Policy, among others (Ahearn & Newton, 2009; Ruhf, 2001). We might also think of the history of adult beginning farmer education in terms of the emergence of programs and services to enhance opportunities in sustainable agriculture, which is financially attributed to the USDA's Sustainable Agriculture Research and Education (SARE) program (Poincelot, et al., 2006) and private foundation support (Hesterman, 2006). It is further important to recognize the evolving participation of the land grant university and Cooperative Extension system in the history of beginning farmer research, education, and outreach through its many transformations since the 1862 and 1890 Morrill Land Grant acts, as well as the Smith-Lever Act of 1914 (Danbom, 1986; Rasmussen, 1960).

Beginning farmer training and program development is perhaps one of the most significant yet poorly understood areas of agriculture and food system research and practice. While agricultural training and education are prevalent worldwide, agricultural education research focusing on adult beginning farmers in the United States is limited. Most of the research reports are on educational and learning preferences of beginning or young farmers (see Nelson & Trede, 2004; Trede & Whitaker, 1998). While such issues are undoubtedly important, we are left with a limited view of the social, cultural, and political context that informs the educational experiences of adult beginning farmers in the United States. For example, little is known about the ways in which adult agriculture education acts as a conduit between beginning agriculturists and the wider social structures influencing food and farming systems, with the exception of analyses of gender and knowledge construction by Shortall (1996), Liepins and Schick (1998), and Trauger et al. (2008). Niewolny (2007) and others (Lamberti, 2007) have focused on the U.S. beginning farmer situation from cultural studies and discourse analysis perspectives to investigate how collaborative-based initiatives negotiate power relations that legitimate who can be a "new" farmer, what are agricultural practices for such farmers, and how agriculture can be written or talked about in public discourse by the practitioners who work with them. Disclosing such issues of power and knowledge enables us, according to Cervero and Wilson (2001), to better identify and respond to the ways in which our educational practice reifies or challenges inequitable conditions. From this perspective, food and farming systems research of adult beginning farmer education would benefit from more detailed exploration of the relevance of power in practice.

What does the practice of education look like? What purposes does it serve? And who is benefiting from it? Much adult education for beginning farmers is commonly understood to be located in colleges and universities, community-based settings, Extension offices, agricultural workplaces, home and family activity, and other sites of nonformal education. When brought into

the purview of the reflective practitioner (Schön, 1983), the notion of beginning farmer training and program development has been appropriated to designate everything from direct instructional activities in workshops, short courses, seminars, consultations, and traditional education classrooms to specialized experiential learning internships and apprenticeships, to informal mentoring and peer networking, and even to self-directed learning using Internet sites and social media. It becomes more difficult to understand this beginning farmer phenomenon when one tries to disentangle these types of educational formats from the many purposes that guide and inform the practice, such as issues in land tenure, financing, marketing, business planning, ecological stewardship, health, community engagement, and social justice. This is further complicated if we recognize how educational opportunities vary for social actors participating within and across different spatial boundaries: immigrants and refugees, urban and suburban agriculturists, women in farming, small-scale farmers, organic growers, transitional farmers, young farmers, mid-career changers, and new conventional commodity operators. While this flurry of beginning farmer activity is exciting for research and practice discussion, it is essential that we are critically conscious of the nature and purpose of this work. Now more than ever are we reminded that our agricultural education practice is not neutral territory where power relations can or should be ignored. We need to focus on the spectrum of issues informing our practice. In recent years, for example, our practice has variously responded to the excesses of the industrialized agriculture and food system through civic revitalization and social resistance (Hinrichs, 2007). According to Pretty (1995), our interpretations, assumptions, and world views about what constitutes our practice must be the subject of critical analysis and reflection if we want to transform the status quo toward more sustainable ends. It is the act of self-awareness and action that will lead us from a naïve to a critical consciousness, which enables us to better achieve more equitable and innovative outcomes in and from our educational practice (Freire, 1973).

This call for reflection is the catalyst for our inquiry into the beginning farmer phenomenon in the United States. That being said, the purpose of this review paper is twofold. First, we aim to provide the reader with an accessible yet critical assessment of the U.S. beginning farmer training and program development context by drawing upon a range of U.S. beginning farmer research (e.g., Niewolny, 2007), federal policy (e.g., Ahearn & Newton, 2009), and programmatic literature (e.g., Sheils & Descartes, 2004) that together provide a socio-historical view of the beginning farmer situation in the United States. Here we emphasize the pedagogical underpinnings of the sustainable agriculture movement that illustrate the current trajectory of adult agricultural education for beginning farmers. Our second aim is to provide a descriptive summary of several beginning farmer initiatives that are instrumental in developing and exchanging knowledge for beginning farmers, particularly for farmers interested in sustainable agriculture. We start out by explaining the methods we used to identify and present the beginning farmer situation from these perspectives.

Methods

We drew upon a wide variety of literature to establish a review of the socio-historical context of beginning farmer training and program development and the initiatives that inform it. A problem in conducting a literature review such as this is that very few studies in agriculture and food systems use the terms "beginning farmer" and "adult agriculture education" as they are used in this study. Even fewer studies examine the emergence of beginning farmer education or the contemporary issues pertaining to its development. This lends a difficulty to defining the delimitations of a body of research. To manage this, we used a standardized review process to frame our inquiry. First, we searched the literature for such textual sources as scholarly research articles, popular press books, programmatic booklets, and organizational websites using the search terms "beginning farmer," "new farmer," "prospective farmer," "aspiring farmer," "adult agriculture education," "beginning farmer education," and "beginning farmer training." Here we focused on issues,

policies, project development, and program outcomes of adult agriculture education for beginning farmers in the United States, with emphasis given to the post–Second World War era. We further narrowed our search by examining literature in rural studies, sustainable agriculture, and the sociology of agriculture to illustrate the intersection between contemporary beginning farmer education and the sustainable agriculture movement.

Second, we identified 33 beginning farmer initiatives that are illustrative of best practices currently used in beginning farmer training and programming. This data was collected from organizational websites, electronic and text-based program publications, and USDA competitive program resources. Initiatives were included in our review if they were offered between the years 1999–2009, to take into account the last ten years of training and programming. For instance, we did not include the 2009 awards from the USDA Beginning Farmer and Rancher Development Program, as these projects are to be developed over the next three years and are not yet in full practice. Additionally, we only included initiatives that could be defined as training, outreach, or educational programs or projects. If the initiative was identified as a project, the primary focus had to be training and/or education. We did not include production-oriented research projects that incorporated beginning farmers as subjects, as this would shift our focus away from the primary emphasis on programming and training. We also excluded one-time workshops, presentations, training sessions, meetings, and conferences. Instead we focused on initiatives that provided a continuum of educational programming. We recognize that this excludes several opportunities scattered around the country; however, our purpose here is to illustrate the most discernible and substantively driven initiatives that are instrumental in shaping the current programming and training trajectory. Similarly, we only included initiatives intended for beginning farmers in the United States. However, we included several initiatives that were designed for beginning farmers and the practitioners who work directly with the beginning farming community. Initiatives focused on general farming practices or for the public at large were excluded unless beginning farmers were clearly the main focus of the program or project. We further required that the initiatives were designed only for an adult farmer audience (i.e., above the age of 18), as compared to those programs and projects that are focused strictly on youth. For example, we did not incorporate the programs available to youth through the Future Farmers of America organization.

Lastly, we standardized our review process of the beginning farmer initiatives by focusing on similar aspects of the beginning farmer resource located on the organizational website or program document, such as mission, purpose, and justification statements. We further searched for primary educational formats, educational content, beginning farmer audience, geographical location, and the organizational collaborations and institutional contexts that the initiative operates within. We report on these findings below and in Appendix A.

While we believe this literature review is accurate and reliable, we acknowledge that information may have been omitted because our standardized review process did not take into account all beginning farmer educational research and program initiatives. Space considerations also made the case against a comprehensive review of all possibilities. Thus we have at a minimum provided the necessary starting point for more investigation and discussion. Our intention, therefore, is to present only an overview for the comparative purpose of clarifying recent developments so that we may improve our research and practice.

"Mapping" the U.S. Beginning Farmer Phenomenon

Issues and Outcomes

Beginning farmer education for adult and young audiences in the United States is nothing new. While programs can be generally traced back to the advent of the Morrill Land Grant Act, scholarship analyzing the structure and practice of agriculture is most focused on the rapid changes of the past sixty years (Bird & Ikerd, 1993). Following this view, we argue that it was not until the post–Second World

War era that the beginning farmer phenomenon took hold, although in small and limited ways. Phipps (1956) and Heady (1957) demonstrate that although youth were largely targeted for beginning farmer education immediately after the war, education through public schools, vocational centers, and county Extension offices was made available to an array of older adult farmers, young farmers, and veterans of the First and Second World Wars. Heady (1957) and Rasmussen (1960) also argue that the training of young farm couples was encouraged through Cooperative Extension services at this time to prepare beginning farmers for necessary farm and home planning.

During the last several decades, practitioners, researchers, and policymakers across the nation have worked together in new and different ways to provide specific programs to maintain the viability of new farms,[2] and the economic, social, and environmental fabric of which they are a part. For Niewolny (2007) and others (see Ruhf, 2001), these initiatives have formed as a growing social response to an overwhelming concern about the steady decline in the number of individuals entering into farming, coupled with an increase in the number of exiting farmers. In 2009, for instance, the U.S. Bureau of Labor Statistics reported a significant job decline for farmers and ranchers, and projected an 8 percent decrease in the number of farmers and ranchers between 2008 and 2018. There are several ways, however, that policymakers and food and farming advocates frame the issue. First, changes in the age distribution of farmers have sparked the interest of many decisionmakers. The rising age of U.S. farmers is perhaps the most apparent issue. According to the 2007 Census of Agriculture, the average age of a principal farmer was 57 years old, which is troubling when compared to the rapidly declining number of farmers in operation under the age of 35. Put another way, Ahearn and Newton (2009) report that more than 63 percent of all established farms in 2007 had a principal farmer of 55 years of age or older, as compared to only 32 percent of beginning farm operations; they further caution that only 5 percent of all principal farmers were 35 years or younger in 2007. This aging population of U.S. farmers and ranchers is expected to increase by the next census while the number of young farmers is likely to decline.

Second, service providers and policymakers have started to recognize that not all paths to farm ownership and success are the same. Many agencies and organizations are now aware that beginning farmers have specific program needs that differ from experienced farmers. In 2006, for example, the USDA set forth the Small Farms and Beginning Farmers and Ranchers Policy to establish a systematic framework for addressing the special needs of small farms and beginning famers within the U.S. agricultural sector. While beginning farmers operate farms of all sizes, on average they operate smaller farms, in size and gross dollars, compared to established farms (Ahearn et al., 2005). In this view, it is not surprising that beginning farm development is often paired with small farm start-up strategies and approaches, such as special credit, financing, and outreach programs. Beginning farmers may also receive special assistance similar to farmers who are eligible for program support based on racial, gender, and immigrant status. For instance, the USDA provides programs for what it refers to as targeted-farmer groups[3], those comprising beginning farmers, limited-resource, and socially disadvantaged farmers, who together make up as much as 40 percent of all U.S. farms (Nickerson & Hand, 2009). The nonprofit sector, individually and in

[2] According to the 2007 Census of Agriculture (U.S. Department of Agriculture, National Agricultural Statistics Service, p. viii), a farm is "any place from which $1,000 or more of agricultural products were produced and sold, or normally would have been sold, during the census year."

[3] According to Nickerson and Hand (2009, p. iii) targeted farmers are those farmers "with 10 or fewer years of experience, farmers with limited farm sales and income, and farmers belonging to segments of the population that have historically been subject to discrimination, such as African American, American Indian, Alaskan Native, Hispanic, Asian American, or Pacific Island farmers."

collaboration with other entities, has succeeded in providing several regionalized farm entry programs for women, immigrant, and other minority populations. Of note here are the Women's Agricultural Network (WAgN), the New Farmer Development Project (NFDP), and the New Entry Sustainable Farming Project (New Entry).

Third, a growing number of food and agricultural development practitioners and researchers contend that the social infrastructure currently supporting beginning farmers is not readily addressing their various needs (Ruhf, 2001). While the population and resource needs of beginning farmers differ from location to location, almost all experience similar barriers to successful farm startup. These barriers generally include high startup costs and limited access to available farmland for purchase or rent (Ahearn & Newton, 2009). Beginning farmers frequently lack the capital necessary to be economically competitive using advanced technology and management practices, which is often the focus of leading research and education programs. These obstacles have been the focus of much debate in recent years. Literature ranging from Lockeretz and Anderson (1993) and Hassanein (1999) to Kloppenburg (1991), Gillespie (2004), and Lyson (2004) has variously set forth the argument that our current industrialized food and agricultural system radically influences the flow of knowledge, resources, and educational opportunities pertaining to agricultural production, distribution, and marketing so that they are also oriented along the same path; therefore, new kinds of farmers have been, and still are, faced with the challenge to acquire the much needed institutional and local support to exchange knowledge and build capacity for gaining access to suitable markets, capital, land tenure, hands-on training, and education that are necessary to develop and sustain food and farming activities. Poincelot et al. (2006) and others (Hassanein, 1999; Hassanein & Kloppenburg, 1995) also argue that as traditional research and education institutions evolve, they struggle to address such changes and are not easily meeting the social, economic, and ecological needs of today's new farmers, particularly those interested in sustainable agriculture. A new educational infrastructure, however, is currently growing in size and scope as a considerable rejoinder to these critical issues. We now turn our attention to the ways in which this new kind of resource and information system is helping to cultivate a new generation of farmers.

Toward an Alternative Knowledge System

Contemporary beginning farmer initiatives have emerged from both the public and private sector. As previously mentioned, the USDA has granted beginning farmers special attention in the last several years. The majority of the policies and program expenditures sponsored by the USDA have taken the form of special credit and farm transfer programs designed to improve the competitiveness of new farms in the agricultural economy (Ahearn & Newton, 2009). According to Ruhf (2001), the 1980 farm bill provided credit and debt forgiveness programs in the wake of the farm crisis. These funds, however, were meager and largely designated to maintain conventional agricultural operations. Broader support for beginning farmers developed in the 1990s. While the financial assistance programs remained in place, farmers were now able to apply for innovative conservation and farm succession programming (Ahearn & Newton, 2009). With considerable help from the SARE program and other sustainable agriculture movement activity, this era also marks an important point in time when sustainable agriculture research, education, and outreach reached public visibility (Bird & Ikerd, 1993; Poincelot et al., 2006). It is important to note that these new programs for beginning farmers *looked* different from their earlier counterparts. These new programs were established as organizational alliances to strengthen the educational infrastructure to better assist farmers and ranchers enter into agriculture, often including issues of sustainability that were emerging in public discourse. For instance, policy stemming from the 1990 farm bill provided the foundation for several new state, federal, and local partnerships to form in a number of ways as a means to facilitate new programs and services for the next generation of farmers (Niewolny, 2007). This thread of policy brought together such entities as public and private univer-

sities and colleges, Cooperative Extension, state and federal agencies, and community-based organizations to provide programs and advocacy to formulate a different kind of agricultural service infrastructure to address the critical needs of beginning farmers. That is to say, these new collaborations and alliances signify an important shift in the design, purpose, and dissemination of adult agricultural education by incorporating a wide platform of social, economic, and ecological issues stemming from grassroot, land grant university, private research sector, and federal and state interests.

Three such initiatives are worthy of brief mention. First, the Center for Rural Affairs, a nongovernmental organization in Nebraska, was first and largely responsible for establishing a Land Link program with land grant university, governmental, and other grassroots support; this program largely focused on farm transfers between retiring and entering farmers (Ruhf, 2001). According to Lamberti (2007), the Beginning Farmer Center (BFC) illustrates another attempt to foster successful farm startups through the partnership of several entities. The BFC was created in 1994 through the collaborative efforts of the Iowa State University Extension and Iowa State Department of Agriculture. Similarly to the Center for Rural Affairs in Nebraska, the BFC developed in response to concerns about the low number of farmers entering and surviving in the Midwest agricultural sector. Today the BFC continues to focus on farm transition services while providing several online resources and communication materials to match prospective farmers with existing farmers to pass along operating farm businesses to the next generation. Finally, the Growing New Farmers (GNF) Project, a four-year initiative, was the first large-scale model of beginning farmer education that responded to challenges facing new and prospective farmers in the northeastern region of the United States (Niewolny, 2007). Financially and programmatically administered by the New England Small Farm Institute, in 2001 the GNF Project initiated the Growing New Farmers Consortium (GNFC) to develop comprehensive programs, research projects, professional development services, and policy advocacy to assist farmers with the difficulties of establishing new farm operations in the Northeast, such as gaining access to markets, capital and credit, education and training, and obtaining farmland (Sheils & Descartes, 2004). By the end of the project, over 200 organizations throughout the twelve-state region participated as members, thus providing an array of programs and projects intended for beginning farmers, beginning farmer educators, and service providers.

Other networks and alliances continue to grow in number across the United States. While these initiatives provide different services and programs, a common goal guiding their actions is to provide suitable information, training, and learning opportunities to assist people in establishing and retaining new farms because traditional forms of education are not addressing their needs. This emerging interest in building an alternative foundation for farmer knowledge and resource exchange, however, has not occurred in isolation. For the last several decades researchers and practitioners have contemplated the emergence of a growing social movement that is creating opportunities for the exchange of new and experiential knowledge among farmers and others about sustainable agriculture (Hassanein, 1999). While many definitions of sustainable agriculture exist, we refer to Lyson's (2004) civic agriculture framework to identify a model of agriculture that is premised on the production, distribution, and consumption of local and regional food that is economically, ecologically, and socially viable.

Following Allen (2004) and others (Allen & Sachs, 1993), we further argue that the boundaries of the sustainable agriculture movement are diffuse across time and space; however, there is an advocacy contingent that radically opposes the industrialization, corporate governance, and adverse social and ecological consequences of agribusiness practice and policy. According to Lyson (2004), this movement has mobilized efforts to transform the prevailing industrialized model of U.S. agriculture into a more civically organized system that "brings together production and consumption

activities within communities and offers consumers real alternatives to the commodities produced, processed, and marketed by large agribusiness firms" (p. 101). For Butler and Flora (2006) and Lockeretz & Anderson (1993), this movement has not only provided the groundwork for social advocacy and resistance to the dominant model, but also has helped to create alternative forms of knowledge, networks, and standards of agricultural practice that traditionally operate outside formal institutions of research and education that historically favor the industrialization model. Such alternative knowledge often disputes conventional science and educational agendas through what Kloppenburg (1991) describes as a form of "environmental and agrarian activism" (p. 519). From this perspective, the process by which new agricultural knowledge is created is grounded in participatory democracy as both the means and ends for pragmatic learning for food system transformation (Hassanein, 2003). For Chambers (1997), Hassanein (1999), and Röling and Wagemakers (1998), this means educators and decisionmakers need to emphasize the value of local knowledge, stakeholder participation, community dialogue, experiential learning, and social networking at local and institutional levels. In doing so, we not only develop new knowledge about ecological agriculture or organic farming, but also reveal critical concerns of our agricultural communities. The ways in which this can occur varies from implementing participatory learning methods in short courses and workshops to offering certification, farm incubator, and apprenticeship programs in sustainable agriculture. While still considered alternative, these pedagogical approaches are increasingly taking root in agricultural education circles at local, regional, and national levels under the umbrella of sustainable agriculture (Allen, 2004).

Röling and de Jong (1998) make the case that these pedagogical views differ from the prevalent transfer-of-knowledge model commonly associated with traditional extension education; therefore, they are difficult to incorporate into mainstream agriculture through public institutions of research and education. For Niewolny (2007) and Niewolny and Wilson (2007), collaborative beginning farmer programs seeking to change the way agricultural knowledge is presented and disseminated to new agriculturalists also struggle to break free of conventional views and practices of agriculture given that they are historically entrenched in neoliberal and technical rational discourse, which together fuel the agricultural industrialization process. Yet Niewolny's (2007) research on the Growing New Farmers Consortium recognizes several promising efforts that illustrate a possible shift in design and purpose of adult agricultural educational toward sustainable ends. Poincelot et al. (2006) also demonstrate how the sustainable agriculture agenda is becoming more apparent in traditional extension education programs and services through such topics as integrated pest management, reduced or no tillage, agroecology, and other environmental forms of production. In the following section, we briefly highlight promising illustrations that support the point that beginning farmer training and programming are perhaps taking hold in new ways, and thus vitalizing new opportunities to create and exchange information and knowledge about and for sustainable agriculture.

New Initiatives for Beginning Farmers

Appendix A is a descriptive summary of the 33 beginning farmer initiatives reviewed. We organized the summary by mission and purpose, audience, geographical location, educational content, educational practice or approach, and the social context in which the initiative operates. We report on the several themes that help define best practices for beginning famer programming, especially for those interested in sustainable agriculture.

Establishing New and Sustainable Farms

The results of reviewing 33 initiatives show that they vary greatly in their educational purpose, which range from revitalizing food and farming activity in specific regions where farmers require startup assistance, to developing agriculture leadership for the next generation, to assisting new farmers to become successful biodynamic and organic farmers, to increasing the number of

women and immigrant families owning and operating profitable and small-scale farms. Generally, an impressive share of initiatives appear to focus on increasing the number of viable farmers and farms, with little to no specification about the kind of agriculture in which these farmers would or should be involved. More specifically, however, we suggest that most initiatives aspire to increase awareness of and involvement in sustainable agriculture through explicit reference to sustainable agriculture in their mission statements. The Seed Farm, People Learning Agriculture Now for Tomorrow (PLANT), New Farmer Foundation Year, and Cultivating Success are a few examples among others that publicly convey their programming using overt "sustainability" language. A number of initiatives also aim to provide farmers with an opportunity to learn about specific sustainable agricultural practices, including organic, pasture-based, and biodynamic farming. For example, the University of California–Santa Cruz (UC–Santa Cruz) Apprenticeship in Ecological Horticulture and the Michigan State University Organic Farmer Training Program provide hands-on training in organic agriculture as a form of sustainable agriculture.

Not all of the initiatives frame their program's mission using this kind of language. For example, the Farm Bureau's Young Farmers and Ranchers program takes on a different view in that the program is generally designed to develop agricultural leaders for the agricultural industry. The Young Farmers and Ranchers program material we reviewed, however, referred to the national program and how it operates at the state level. Each program likely differs from state to state or region to region. In this view, we cannot determine from the findings if sustainable agricultural issues and practices are present in their particular programs for young farmers.

Many "Beginning Farmer" Audiences

Defining the "beginning farmer" is perhaps one of the most critical issues for practitioners and decision-makers. Several factors influence how programs define their beginning farmer audience. These factors include participants' level of farming awareness, experience, and commitment. It also includes consideration for the ways in which farmers experience agriculture through different cultural lenses. We found that beginning farmer initiatives across the country provide targeted programs for such groups as immigrants and refugees with farming experience, new urban agriculturists, women in farming, mid-career changers, individuals interested in small-scale farming, exiting and entering farmers, farmers between the age of 18 and 35, and even farmers who are starting to explore the idea of farm startup. Several programs are also designed for a general, beginning farmer audience. This audience usually comprises a range of prospective, new, and semiexperienced famers in a range of content areas.

These examples reflect the diversity of audiences we have indentified in our findings. From this diversity, we found that "new" and "beginning" farmer language is most common as compared to targeted audiences. This suggests that a majority of these initiatives are designed to assist a wide range of individuals who are aspiring, planning, and starting to farm.

We also found that a number of the programs designed for targeted audiences (e.g., immigrant farmers, women agriculturalists, and entering and exiting farmers) not only operate at the local level but also participate in regional and national networks of projects and programs that support their particular programming needs. While this is an interesting finding, we do not fully report on the purpose and format of each network, given space limitations. Instead, we suggest that readers contact program administrators to learn more about these networking opportunities.

Beginning Farmers Require More than Just Technical Skills

The content of these programs and projects cover numerous topics and issues, most of which are focused on five core areas: production practices, marketing, financial planning and resource assistance, business planning and management, and land acquisition and transfer. Within each core area

we located topics that ranged from organic production practices to small-scale farm management to developing community supported agriculture (CSA) opportunities. Although there is considerable variety, we found that in general these content areas emphasize substantive issues, concerns, and practices that move beyond standard technical assistance programming. For example, exploratory programming is fairly prevalent. These kinds of programs are designed to help potential or prospective farmers assess their goals, values, and expectations to see if farming is really what they want to do. They cover a range of topics, including marketing, small business planning, lifestyle assessment, and whole farm planning. This is best demonstrated by the New England Small Farm Institute's (NESFI) Exploring the Small Farm Dream course. NESFI not only provides the coursework and a booklet, but also offers train-the trainer programming for educators across the country.

While the topic of social networking is most closely associated with the means by which farmers learn, it is another area of content that stands out in the findings. Several initiatives explicitly provide social learning opportunities for participants to build social networks for farming success. The Agriculture and Land-Based Training Association, for example, provides farmer training and group dialogue learning opportunities for farm workers, limited-resource farmers, and aspiring farmers. This program appears to provide networking opportunities for participants to learn together for purposes that range from civic education to community leadership. The Beginning Farmer and Land Access Program is another initiative that integrates network-building into its programming to help newly established farmers obtain material and community resources, including land, capital, and social support.

Forget the Lectures: Learning on the Farm (and Online)

We identified several educational formats and practices that go beyond the traditional transfer-of-knowledge approach. These approaches generally focus on the local knowledge of the farmer-participant through such hands-on and experiential learning methods as farmer-led training and mentoring, on-farm training through apprentice programs, and goal-evaluation courses and workshops. These approaches, however, vary in depth and scope given that content delivery models differ among the initiatives. The formats range from in-class courses, in-depth training and technical assistance programming on farms, to an integration of classroom and on-farm learning, and even to self-directed webinar and online courses.

Several issues stand out from these findings. First, we found that the Internet appears to have opened new possibilities for delivery methods of educational programming intended for beginning farmers. Many online courses and resources are viable options for individuals interested in learning about the nuances of agriculture and farming practices. These online educational opportunities provide many benefits as they can be accessed anywhere and at the convenience of the learner. They also provide viable options for networking with individuals from other geographical locations who would otherwise be difficult to reach. This is best illustrated by two different initiatives: Beginning Farmers from Cornell University and Cooperative Extension, and The Greenhorns's Guide for Beginning Farmers, a special project of The Greenhorns. While they provide different programming, each utilizes forms of social media (e.g., YouTube and blogs) as a means to create new spaces of learning for beginning farmers.

Second, we identified two types of programs that are designed to engage the learner on the farm using an experiential-learning, apprentice design. These include certificate programs and farmer-organized apprentice networks. Of these, the UC-Santa Cruz Center for Agroecology and Sustainable Food Systems is perhaps most recognized for its six-month experiential learning apprentice program, which has been offered since 1967. Michigan State University's Organic Farmer Training Program is also designed to provide learners with an intensive, hands-on experience. Collaborative Regional Alliance for Farmer Training (C.R.A.F.T.) is an example of a farmer-based apprentice

networking program that differs from the first two in that it emphasizes community-based learning whereby experienced farmers cooperatively organize on-farming learning opportunities to enhance the educational experience for farm apprentices.

Regionalization and Place-based Programming
Many of the initiatives we reviewed serve a particular region or community through place-based programming. This place-based approach typically underscores the importance of the local farming context, the programming needs of local area beginning farmers, and the personal knowledge they bring to the farming experience. From our findings, there appears to be a particular emphasis on East and West Coast training and programming and the issues that pertain to those farming regions. There are a handful of initiatives, however, in the Midwest, most of which identify with a particular farming community. For example, the Practical Farmers of Iowa (PFI) aims not only to address the distinctive needs of beginning farmers in Iowa, but particularly the beginning farmer members of PFI through its Next Generation program.

When we looked closely at the regionalization of the initiatives, we noticed that a few operate as national networks of projects and programs. These kinds of initiatives tend to function in one of two ways. First, a few initiatives represent national organizations that have statewide programs. The American Farm Bureau, for instance, is a non-governmental organization whose scope is national yet provides individual, state-level services through its Young Farmers and Ranchers program. Second, several place-based programs are tied together through a larger networking initiative that has far greatear visibility. The National Farm Transition Network best illustrates this idea. This network comprises 20 Farm/Land Link projects that work both together and individually to provide land acquisition and transfer programming. Each program varies in organizational structure, however, and therefore functions uniquely to serve its specific beginning farmer audiences. For instance, Pennsylvania Farm Link does not share a similar history or facility with other programs, such as the much younger Farm Link program in Virginia.

Collaborative Structure and Organizational Alliances
The results also indicate that these programs and projects vary in organizational structure. They range from simple one-organization projects to highly collaborative partnerships among non-government organizations, farmer networks, land grant universities, Extension associations, and government institutions. These collaborative initiatives are common and appear to be growing in number, with several organizational partners building alliances in order to develop or provide ongoing programming, some with national scope, for beginning farmers. Some are formal while others operate very loosely and informally. The Vermont New Farmer Network, for example, is an informal alliance of regional organizations and institutions whose goal is to coordinate communication and programming to serve the needs of new and aspiring farmers in Vermont. The Growing New Farmers (GNF) Project Consortium is perhaps the foremost example of multi-institutional and multi-organizational collaborative programming, with roughly 200 beginning farmer entities offering a wide range of training, mentoring, and technical assistance programming. Like the GNF Project, most of the collaborative initiatives developed over time as compared to those whose partners came together initially to launch a program. For example, The New Farmer Development Project (NFDP) was established in 2000 as a partnership between Greenmarket and the New York City Cornell Cooperative Extension Program. Over the last nine years the project has grown to serve new immigrant populations in communities surrounding New York City through the program support of such organizations as Just Food, NY Farm Link, and the Northeast Network of Immigrant Farmer Projects.

Conclusion and Recommendations

By drawing upon applied research, federal policy, and programmatic literature, we have illustrated how beginning farmer training and program development is moving in a "sustainable" direc-

tion. In particular, we argue that the beginning farmer phenomenon is helping to build the foundation for an "alternative knowledge system" that functions at local, regional, and national levels for the development of sustainable agriculture and food systems (Hassanein, 1999, p. 6). This is illustrated by the way in which policy and funding opportunities for beginning and small-scale farmers parallel an increasing trend in sustainable agriculture research, education, and outreach. This is also illustrated through specific program and project opportunities that emphasize sustainable agriculture teaching and learning practices, including experiential learning, peer learning, mentoring, nonformal certification programming, social networking, incubator projects, and various forms of online learning. These training and programming opportunities also comprise a laundry list of content areas that move beyond conventional agricultural views and practices, including but not limited to land conservation and land acquisition, niche and direct marketing, organic farming, whole farm planning, farmworker rights, and personal goal assessment.

Drawing upon Niewolny (2007) and others (Niewolny & Wilson, 2007), we are also reminded that this newly formed knowledge base for new kinds of farmers is only now gaining traction to address special startup and community development needs. Sustainable agriculture education and beginning farmer education are yet positioned at the margins of major research and education agendas. From this perspective, it is important to assess our practical and political achievements to better identify how we can improve the situation on the ground. This paper is an attempt to begin that crucial conversation. There is much more to be accomplished. In building upon these ideas, we can continue to expand the boundaries of what constitutes meaningful programming for beginning farmers. The following points are only a few recommendations for research and practice from this perspective.

Recommendations for practitioners

- Incorporate community-based learning strategies to build viable social networks for facilitating successful beginning farmer learning communities. These strategies might include community forums, study circles, focus groups, and collaborative leadership development.

- Implement participatory and experiential learning methods that integrate beginning farmer knowledge with trainer experience. Reduce the amount of lectures and other forms of direct instruction.

- Integrate social media forums to generate and sustain interest in agriculture for the digitally aware beginning farmer audience.

- Integrate new approaches to establish, retain, and expand sustainable agriculture concepts and activities into everyday practice. For example, introduce local and regional food system marketing coursework and social networking, farm-to-fork programming, and scaling-up business incubator programs.

Recommendations for researchers

- Explore the social and cultural impacts and implications of beginning farmer programs through ethnographic and critical analysis of on-the-ground, everyday practice and curriculum materials.

- Investigate how beginning farmer organizational alliances negotiate power and interests among organizational entities through the program planning process.

- Conduct in-depth study of best practices for incorporating civic agriculture concepts into higher education beginning farmer curriculum.

- Investigate the role community food system development entities (e.g., food system councils) play in facilitating opportunities for beginning farmers to establish and sustain operations using a community-based participatory research (CBPR) framework.

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Appendix A
Summary of Beginning Farmer Initiatives

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Initiative	Mission/Purpose	Audience	Content Area	Educational Format	Social Context	Location(s)
Agriculture and Land-Based Training Association (ALBA)	"[A]dvance economic viability, social equity and ecological land management among limited-resource and aspiring farmers."[a]	Farm workers and limited-resource, aspiring farmers	"Basic civics and policy education," business planning and management, funding, leadership, marketing, production	Courses, farmer-lead networking, on-farm training	Partners from government agencies, nongovernmental organizations, and university and extension associations	CA
Apprenticeship in Ecological Horticulture	"[I]ncrease the number and diversity of individuals who have a command of the fundamental skills and concepts associated with organic horticulture and agriculture, such that they will be prepared to actively participate in commercial or social service projects that aim to improve human health and environmental quality through organic practices."[b]	New farmers	Production practices and social issues in agriculture	Courses and workshops, field trips, on-farm training	University of California–Santa Cruz Center for Agroecology and Sustainable Food Systems	CA
Beginning Farmer and Land Access Program	"[S]upport a significant increase in the number of newly established, successful farmers over the next five to seven years. The program will focus on preparing beginning farmers for early business success, and helping beginning farmers gain access to production resources, such as land and capital."[c]	New farmers	Equipment acquisition, funding, land acquisition and transfer, networking, resources	Advising and counseling, networking, resource/guide	Farm Service Agency, Intervale Foundation, Northeast Organic Farming Association of Vermont (NOFA-VT), USDA-Natural Resources Conservation Service (NRCS), University of Vermont (UVM) Center for Sustainable Agriculture, UVM Extension, Vermont Agency of Agriculture, Vermont Farm Bureau, Vermont Land Trust, Yankee Farm Credit	VT

[a] www.albafarmers.org/about.html

[b] casfs.ucsc.edu/training/infoap.html

[c] www.uvm.edu/~susagctr/?Page=begland.html=

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Initiative	Mission/Purpose	Audience	Content Area	Educational Format	Social Context	Location(s)
Beginning Farmer Center	"Coordinate education programs and services for beginning farmer efforts statewide; assess needs of beginning farmers and retiring farmers; develop, coordinate, and deliver targeted education to beginning and retiring farm families; provide programs and services that develop skills and knowledge in financial management and planning, legal issues, tax laws, technical production and management, sustainable agriculture, human health, the environment, and leadership."[d]	Beginning and retiring farmers	Business planning and management, land acquisition and transfer, legal issues	Advising and counseling, college seminar, online resources and/or guides	Iowa State University Extension	IA
Beginning Farmers	"[D]evelop a comprehensive and up-to-date compilation of information resources for new, experienced, and potential farmers, as well as educators, activists, and policymakers interested in the development of new farm enterprises."[e]	New, experienced, and potential farmers; educators, activists, and policymakers	Business planning and management, educational opportunities, funding, land acquisition and transfer, network building, production	Online resource	Michigan State University	MI
Center for Rural Affairs: Beginning Farmer and Rancher Opportunities	"Helps beginning farmers and ranchers gain access to the land, financing, knowledge and skills that they need to make a successful start."[f]	Beginning farmers	Business planning and management, funding, land acquisition and transfer, marketing	Advising and counseling, networking, resources and publications	Center for Rural Affairs	NE
Collaborative Regional Alliance for Farmer Training	"[A] cooperative effort of local organic and biodynamic farms organized to enhance educational opportunities for farm apprentices."[g]	Beginning farmers and apprentices	Marketing, networking, production	Farm tours, networking, workshops	Regionalized farmer-led apprentice network	KY, IL, MA, NY, WI, Canada

[d] www.extension.iastate.edu/bfc/about.html
[e] beginningfarmers.org/about-contact/
[f] www.cfra.org/resources/beginning_farmer
[g] www.craftfarmapprentice.com/index.php?page=1

Initiative	Mission/Purpose	Audience	Content Area	Educational Format	Social Context	Location(s)
Cultivating Success	"[I]ncrease producer and consumer understanding, value, and support of sustainable local farming systems in Washington and Idaho through educational and experiential opportunities."[h]	Beginning, existing and immigrant farmers	Business planning and management, goal-setting, legal issues, marketing, production, resource evaluation, social issues	Courses, internship, mentorship	Rural Roots, University of Idaho, Washington State University	ID, WA
Education for American Agriculture	"[P]rovide the tools needed for NYFEA to address the question: 'Where will we find the next generation of young and beginning producers and young agribusiness professionals?'"[i]	Young (adult) beginning farmers	Business planning and management, leadership, social issues	Varies from state to state; focus on online courses and networking	National Young Farmers Education Association	National
Exploring the Small Farm Dream: Is Starting an Agricultural Business Right for You?	"[D]esigned to help aspiring farmers learn what it takes to start and mange a commercial agricultural business, and decide whether this is a path they really want to take."[j]	Prospective, explorers, early stage planners	Business assessment, decision-making, goal-setting, values assessment	Course	New England Small Farm Institute, Pioneer Valley Enterprise Program	MA, NJ, NY, OH, PA, RI, VA, Canada
Farm Beginnings	"[A] Land Stewardship Project initiative that provides opportunities for beginning and transitioning farmers to learn firsthand about values clarification and goal setting, whole farm planning, business plan development, and low-cost, sustainable farming methods."[k]	Beginning and transition farmers	Business planning and management, goal-setting, marketing, production, online resources and/or guides	Classroom sessions, farm tours, mentorships	Dakota Rural Action, Foundation for Agricultural and Rural Resources Management and Sustainability (FARRMS), Hawthorne Valley Farm, The Land Connection, Lake Superior Sustainable Farming Association, Land Stewardship Project, Nebraska Extension, University of Illinois	MN, IL, NE, NY, ND, SD, WI

[h] www.cultivatingsuccess.org/about.htm

[i] www.nyfea.org/ed-ldrship-programs.html

[j] growingnewfarmers.org/main/for_new_farmers/exploring_the_small_farm_dream/

[k] www.landstewardshipproject.org/fb/whatisfb.html

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Initiative	Mission/Purpose	Audience	Content Area	Educational Format	Social Context	Location(s)
Farm Viability Enhancement Program	"[I]mprove the economic viability and environmental integrity of participating farms through the development and implementation of farm viability plans."[l]	New farmers with at least two years experience	Business planning and management	Advising and counseling	Massachusetts Department of Agricultural Resources	MA
Georgia Organics Mentoring Program	"[D]evelop the capacity of farmers and farms committed to sustainable agriculture and land stewardship."[m]	New, transitioning, and limited-resource farmers	Determined by mentor and program participants	Advising and counseling, annual conference, on-farm training, workshops	Georgia Organics, Inc., Risk Management Agency (RMA)	GA
The Greenhorns for Beginning Farmers	"[S]upport, promote and recruit young farmers in America."[n]	Young and beginning farmers	Business planning and management, land acquisition and transfer, marketing, production, sustainable agriculture	Farmer-based resource guide, social media, social networking	The Greenhorns	NY
Grow Your Farm: Successful whole farm management	"[D]esigned for prospective farmers, beginners with some experience and seasoned farmers who want to make a 'new beginning' with alternative farming methods."[o]	Prospective, beginning and restrategizing farmers	Business planning and management, marketing, resource assessment, values assessment	Course, networking	University of Missouri Extension	MO
Growing Farms	"[P]rovide beginning specialty crop and livestock farmers with the tools and knowledge to manage both the biological and financial risks of farming."[p]	New farmers	Business planning and management financial planning, funding, legal issues, marketing, production, resource evaluation, values assessment	Course, field trips, networking	Oregon State University Extension Small Farms Program	OR

[l] www.mass.gov/agr/programs/farmviability/
[m] www.georgiaorganics.org/farming/
[n] www.thegreenhorns.net/reading.html
[o] extension.missouri.edu/growyourfarm/
[p] smallfarms.oregonstate.edu/growing-farms-workshop-series

Initiative	Mission/Purpose	Audience	Content Area	Educational Format	Social Context	Location(s)
Growing New Farmers	"[H]elp new or aspiring farmers get the training they need to go out on their own and to get started farming with affordable expenditures for equipment and land rental."[q]	New or aspiring farmers	Business planning and management; equipment, land and resource acquisition; production	Internship, incubator program	Farm Catskills	NY
Growing New Farmers Project and Consortium	"[E]stablish an effective, responsive and enduring service infrastructure that, through creative integration of research, extension and education provides future generations of Northeast farmers with the support and farming expertise they need to succeed."[r]	New farmers	Business planning and management, marketing, funding, land acquisition and transfer, network building, production, technical skill	Varies for each partner: Advising and counseling, courses, online courses, networking, on-farm training	Consortium partners from government agencies, nongovernmental organizations, and university and extension associations	GNF Consortium members in CT, DE, MA, MD, ME, NH, NJ, NY, PA, RI, VT, WV
Michigan State University Organic Farmer Training Program	"[C]ommitted to successfully preparing graduates to operate their own farm or community food system endeavor. Graduates will be qualified to run small-scale farms, work closely with existing farmers, and be advocates of local food systems based on first hand experience and training with local organic production."[s]	New and beginning farmers, urban and community farmers and gardeners	Production, marketing	On-farm training, courses, workshops	Michigan State University	MI

[q] farmcatskills.org/index.cfm?category=4

[r] www.smallfarm.org/main/special_projects/growing_new_farmers/about_gnf/

[s] www.msuorganicfarm.org/goals.htm

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Initiative	Mission/Purpose	Audience	Content Area	Educational Format	Social Context	Location(s)
National Farm Transition Network	"[S]upport programs that foster the next generation of farmers and ranchers."[t]	Beginning farmers	Farm land acquisition and transfer, but programs vary from state to state	Varies for each partner: Advising and counseling, courses, networking, on-farm training, online resources, workshops	Formal network of government agencies, nongovernmental organizations, and university and extension associations	Farm/ Land Link programs in CA, CT, IA, MA, ME, MI, MN, MT, NC, NE, NH, NJ, NY, OH, PA, RI, VA, VT, WA, WI
The New American Sustainable Agriculture Project	"[D]eliver focused outreach and technical assistance, including educational programs, to limited-resources immigrant farmers, helping them to build successful Maine farms that are consistent with their cultural and lifestyle aspirations."[u]	Recently resettled refugee farmers and immigrant farmworkers	Business planning, financial resource acquisition, technical assistance	Advising and counseling, courses and workshops, on-farm training	Coastal Enterprises Inc.	ME
New Entry Sustainable Farming Project (New Entry)	"[A]ssist people with limited resources who have an interest in small-scale commercial agriculture, to begin farming in Massachusetts. The broader goals of New Entry are to support the vitality and sustainability of the region's agriculture, to build long term economic self-reliance and food security among participants and their communities, and to expand access to high-quality, culturally appropriate foods in underserved areas through production of locally-grown foods."[v]	Prospective or established farmers, limited resource farmers, immigrant farmers	Business planning, production, resource acquisition	On-farm training, technical assistance, workshops	Collaborative partners from government agencies, nongovernmental organizations, and university and extension associations	MA

[t] www.farmtransition.org/aboutnetw.html

[u] www.ceimaine.org/content/view/115/164/

[v] nesfp.nutrition.tufts.edu/about/index.html

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Initiative	Mission/Purpose	Audience	Content Area	Educational Format	Social Context	Location(s)
New Farmer Development Project	"[I]dentifies, educates, and supports immigrants with agricultural experience by helping them become local farmers and establish small farms in the region."[w]	Immigrants with farming experience	Funding, land acquisition, marketing	Advising and counseling, courses, mentoring, technical assistance	Collaborative partners from government agencies, nongovernmental organizations, and university and extension associations	NJ, NY, Northern PA
New Farmer Foundation Year	"[A]n exploration into biodynamic and organic agriculture through theoretical and experiential building on core competencies and skills and agro-ecological literacy. The New Farmer Foundation Year prepares students for the challenges of farming, broadens awareness into issues of sustainable agriculture today and penetrates the human spirit with enlivened knowledge."[x]	New farmers	Business planning and management, network-building, marketing, production	Courses and workshops, field trips, on-farm training	Michael Fields Agricultural Institute	WI
New York Beginning Farmers	"[E]nhance the likelihood of success of new ag enterprises by making the best resources and training available to any new or diversifying farmer in NY."[y]	New, aspiring, beginning, and diversifying farmers	Business planning and management, goal-setting, land and resource assessment, legal issues, marketing	Online course, resources, webinar	Cornell Cooperative Extension, Cornell Dept. of Education, Heifer International, Northeast Organic Farming Association of New York (NOFA-NY), New York FarmNet and NY FarmLink, NY Farm Viability Institute, NY Association of Ag Educators	NY

[w] www.cenyc.org/greenmarket/nfdp

[x] michaelfieldsaginst.org/work/education/foundation/index.shtml

[y] www.nybeginningfarmers.org/index.php?page=NYBFP

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Initiative	Mission/Purpose	Audience	Content Area	Educational Format	Social Context	Location(s)
Next Generation	"Designed to help beginning farmer PFI members thrive and farm families transition their operation to the next generation."[z]	Beginning farmers	Business planning and management, goal setting, land acquisition and transfer, marketing, production	Annual retreat, farm tours, mentoring, networking, workshops and courses, webinars	Practical Farmers of Iowa	IA
People Learning Agriculture Now for Tomorrow (PLANT)	"[S]eeks to revitalize agricultural activity in the Piedmont Region through training on small scale sustainable farming techniques."[aa]	Farm trainees and apprentices	Business planning and management, marketing, production	Workshops	North Carolina Cooperative Extension	NC
School for Beginning Dairy and Livestock Farmers	"[P]rovide the opportunity for motivated individuals to educate themselves about pasture-based dairy and livestock farming."[bb]	New farmers	Business planning and management, production	Courses and workshops, farm tours, internships	University of Wisconsin–Madison	WI
The Seed Farm	"An agricultural incubator program for the establishment of new sustainable farms and farmers. The mission of the seed farm is to plant the seeds for the future of a viable and environmentally sustainable Lehigh Valley agricultural economy and to facilitate the growth of a vibrant Lehigh Valley local food system."[cc]	New farmers	Business planning and management, goal setting, land acquisition, marketing, production, resource assessment, values assessment	Apprenticeships, farm tours, mentoring, workshops and courses	Penn State Cooperative Extension Service, PA government agencies, nongovernmental organizations	PA
Small and Beginner Farmers of New Hampshire	"[A] farmer to farmer network with the goals of connecting farmers and the community, sharing ideas and information, and accessing technical assistance and agricultural education."[dd]	New farmers	Funding, marketing, production	Listserv, farm tours, mentoring, online classifieds, resource and/or guide, workshops	Small and Beginner Farmers of New Hampshire	NH

[z] www.practicalfarmers.org/programs/youth-and-next-generation.html

[aa] www.orangecountyfarms.org/PLANTatBreeze.asp

[bb] www.cias.wisc.edu/dairysch.html

[cc] sites.google.com/site/theseedfarm/

[dd] www.sbfnh.org/index.php?option=com_content&task=view&id=13&Itemid=1

Initiative	Mission/Purpose	Audience	Content Area	Educational Format	Social Context	Location(s)
Vermont New Farmer Network	"[A] working group of agricultural organizations committed to serving the needs of new and aspiring farmers in Vermont."[ee]	New and aspiring farmers in Vermont	Business planning and management, marketing, funding, land acquisition and transfer, network-building, production, technical skills	Resource guide, social networking, workshops	Informal network of government agencies, nongovernmental organizations, university and extension associations	VT
Women's Agricultural Network	"Through a series of educational, technical assistance, and networking opportunities, WAgN works to increase the number of women owning and operating profitable farms and ag-related businesses, as well as their profile in leadership positions throughout the agricultural sectors of business, government and community."[ff]	Prospective and beginning female farmers	Business planning and management, decision-making, goal-setting, marketing, resource evaluation	Courses and work-shops, learning circles	Collaborative partners from government agencies, nongovern-mental organizations, university and extension associations	WAgN projects in CT, ME, PA, VT
Young Farmers and Ranchers Program	"[P]rovide leadership in building a more effective Farm Bureau to preserve our individual freedoms and expand our opportunities in agriculture."[gg]	Young farmers and ranchers (18 to 35 years old)	Networking	Varies for each program: courses and workshops, farm tours, and networking	American Farm Bureau	National

[ee] www.vermontagriculture.com/agdev/new%20farmers/vnfn.htm
[ff] www.uvm.edu/wagn/?Page=about/index.html&SM=about/sub-menu.html
[gg] www.fb.org/index.php?fuseaction=young.young

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Creating access to land grant resources for multicultural and disadvantaged farmers

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Abstract
The fastest growing demographic sectors of Washington agriculture are Latino, Asian, and women farmers. The majority of these farms are small, with over three-fourths of Latino, Hmong, or women-operated farms having fewer than 50 acres and less than $50,000 in sales. Small farms make up 90 percent of all Washington farms, with 35,269 counted in the last census. Unfortunately, most conventional farming education models are not well-suited to farmers with limited access to land, water, and capital, or with limited literacy or limited English proficiency. Meeting the needs of this new generation of farmers will require rethinking many standard approaches to public agricultural research, education, and assistance. This article examines various alternative formats for reaching diverse producers with sustainable farming education that have been piloted by the Washington State University Small Farms Program, including participatory courses, farmer-to-farmer learning strategies, experiential workshops, audio-visual strategies, and simultaneous translation.

Keywords
Beginning farmers, farmer-to-farmer, small farms, Hmong farmers, immigrant farmers, Latino farmers, multilingual, participatory, sustainable agriculture, multicultural

Introduction and Background
In the 2007 Census of Agriculture, 90 percent, or 35,269, of Washington's farms met the USDA (1998) definition of a small farm, meaning they had total sales of less than $250,000 (USDA, 2007). Just as in the country as a whole, immigrant and women farmers are the fastest-growing demographic sector of the state's agriculture. In Washington, the number of Latino, Asian, and women farm operators increased by 43 percent, 36 percent, and 44 percent, respectively, between 2002 and 2007.

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The 2007 Agricultural Census counted 2,605 Latino, 669 Asian, and 8,090 women producers in the state. While there is not a separate census category for them, the authors have identified 88 Hmong-operated farms. The majority of immigrant and women-owned farms are small, with over 75 percent of Latino, Hmong, or women-operated farms having less than 50 acres and under $50,000 in sales. While sales may appear low on these farms, our research shows that it can be a critical component of household income (Ostrom, 2005a).

In addition, Washington is home to many refugees, farm workers, farm apprentices, and others who aspire to own their own farms, but are not identified in the Agricultural Census as farmers. For example, 50 Somali and 35 Burundian refugees with agricultural backgrounds in the Seattle area have requested assistance with starting farms. In Central Washington, Latino agriculturists who work on other people's farms can sometimes purchase a few acres of their own to start small, part-time farms. It is also common for fresh-market organic farms in Washington and elsewhere to have one or more farm apprentices or interns studying to become farmers.

This new generation of aspiring farmers is emerging in Washington just as many communities struggle to preserve their farmland and farming infrastructure in the face of reduced farm profitability, intense development pressure, and farmer retirements. The average age of Washington farmers is 57 (USDA, 2007). Unless they inherit farms from their families, most incoming farmers cannot afford to purchase land at going market rates based on the income they can realize from farming. Beyond high land costs, farmers face rising input costs, tightening government regulations, and highly competitive global markets. Thus, as growers retire, farmland in Washington is frequently taken out of production. Over the past 10 years, the state lost 678,606 acres, or 4.3 percent, of its farmland (Stuart, 2008; USDA, 2007). Finding ways to support incoming farmers will be critical to protecting the future vitality of Washington's agriculture and rural communities.

While commodity prices in global markets have generally been depressed and unpredictable, some new opportunities have emerged in local, direct, and specialty markets. Increasingly, entrepreneurial-minded farmers in Washington seek to improve their revenues by orienting their production toward the rising local consumer demand for high-quality, fresh, sustainably produced, and local farm products (Ostrom, 2006; Ostrom & Jussaume, 2007). Direct-marketing channels in Washington such as farmers' markets have seen rapid growth, increasing from total annual sales of $5 million in 1997 to an estimated $65 million in 2008 (WSFMA, 2010). During this same period, the total number of markets in the state doubled to 114 (WSFMA, 2010). Similarly, direct sales through farm stands, retailers, institutions, restaurants, community supported agriculture (CSA), and agritourism are also on the rise (Ostrom, 2005b; Ostrom & Jussaume, 2007).

Unfortunately, most conventional farming research and education approaches have not been well suited for small-scale farmers who raise diversified, specialty crops or livestock, use sustainable or organic farming methods, have limited resources, or employ alternative marketing strategies (Garcia-Pabon & Lucht, 2009; Hassanein, 1999; Holt-Giménez, 2006; Ostrom, V. Yang, Tadesse, Chang, N. Yang & Lee, 2002; Ostrom & Jackson-Smith, 2005; Suvedi, Knight Lapinski & Campo, 2000; USDA, 1998). Immigrant and refugee farmers may face additional challenges due to limited literacy and English proficiency; limited access to basic resources such as land, water, capital, or transportation; and a lack of familiarity with local growing conditions, regulations, and markets. And while they may be skilled agriculturists, they may lack essential business and environmental risk-management skills.

Rethinking standard approaches to public agricultural research, extension, and assistance for this audience is necessary because (1) they usually focus on export-oriented, high-input, industrial-scale commodity production that requires intensive capital investment, and (2) they frequently follow a diffusion-and-adoption approach where new

science and technologies are developed in university and industry settings and "extended" out to farmers for their adoption. While this model has worked well to spread modern agricultural technologies around the world, it has been criticized for its negative impacts on the environment, crop diversity, and small farmers growing local foods to meet local needs (Altieri, 2002; Chambers, 1983; Dahlberg, 1979; Desmarais, 2007; Holt-Giménez, 2006; Lappe & Collins, 1977).

In contrast, proponents of sustainable agriculture and food systems have argued that agricultural science should be tailored to local agro-ecosystems and measured against such goals as viable livelihoods for farmers and farm workers, environmental protection, and social equitability (Buttel, 1993; Chambers, 1983, 1994; Kloppenburg, 1991). Beyond the production system, goals for local food security and access are increasingly becoming part of the conversation (Allen, 2004; Hassanein, 2003). In creating alternative food and farming models, a growing body of educators has emphasized the need to value the experience, knowledge, and interests of the farmers themselves as they work within their specific agronomic, ecological, labor, and market contexts (Kloppenburg, 1991; Hassanein, 1999; Gerber, 1992; Chambers, 1983; Francis & Carter, 2001). More participatory and interactive research and education approaches could allow farmers and university agricultural specialists to exchange ideas in ways that incorporate the farmer's perspective and thus have a greater likelihood of success (Altieri, 2002; Chambers, 1983, 1994; Francis & Carter, 2001*;* Gerber, 1992; Hassanein, 1999; Holt-Giménez, 2006*;* Percy, 2005; Peters, 2002).

From his evaluations of over 1,000 participants in sustainable agriculture education programs, Francis and Carter (2001) showed positive learning gains from replacing lecture and slide-show formats with participatory discussions, on-farm training events and demonstrations, small group discussions, and experiential field learning opportunities. The effectiveness of approaches based on farmer-to-farmer learning and farmer-to-farmer networking for developing and spreading new sustainable farming models has been documented by Hassanein (1999) and Holt-Giménez (2006). Hands-on learning, farmer-to-farmer demonstration, and farmer mentoring have proven to be especially important for new entry immigrant and refugee farmers (*for examples see*: Rhodes & Joseph, 2004; ALBA, 2010; Tufts, 2010).

Cultivating Success Immigrant Farmer Program Overview

For the past eight years, the Washington State University (WSU) Small Farms Program and the University of Idaho (UI) have partnered with a nonprofit farming association, Rural Roots, to develop, offer, and evaluate a collaborative sustainable small farming education program called Cultivating Success. The overall goal of the Cultivating Success program is to foster the long-term success and viability of small-scale farmers in Washington and Oregon through community-based education.

This collaborative education program was born out of recognition by the partners that beginning, small, minority, women, and other limited-resource farmers, as well as diversified specialty-crop and direct-market farmers, were underserved by the land grant agricultural research and extension programs and the federal farm programs in the two states (USDA, 1998; Ostrom, Jussaume & Jarosz, 2002). Our goal was to engage small farmer stakeholders in needs assessment and educational program development to ensure the greatest possible relevancy and optimize access to existing public agricultural resources by diverse farmers.

The Cultivating Success curriculum combines participatory classroom learning approaches with experiential, on-farm learning opportunities. Designed to be offered by county extension faculty, the program features farmer-to-farmer discussions led by a variety of local farmer innovators; interactive seminars with local agency, business, and university resource people; small group exercises; hands-on field exercises; interactive visits to established farms and value-added enterprises; and mentoring by experienced, successful farmers who want to share their knowledge.

From its initial launching in a few pilot counties in 2001, the program has seen steady growth, with nearly 3,000 participants taking courses in 33 counties by 2009. While there is much to consider about this program as a whole, this article is going to focus specifically on our adaptation of the Cultivating Success program for immigrant farming audiences. The following paragraphs outline the basic components of the immigrant farmer program: staff capacity-building, sustainable farming courses with one-on-one follow-up, audiovisual strategies, and "Farm Walks."

Cross-Cultural Capacity Building

In response to requests for assistance from county Extension faculty and nonprofits, grant funds were initially secured by the WSU Small Farms Program in 2004 to begin reviewing and adapting our Cultivating Success curriculum for Hmong and Latino immigrants. First, bilingual consultants with connections to the target communities were hired to assist with stakeholder listening sessions and interviews to assess educational needs.

From the needs assessment process it became clear that full-time staff members with bilingual and cross-cultural skills would be needed in order to design and offer effective sustainable farming education for immigrant farmers. Accordingly, over the next five years the WSU Small Farms Program sought and received additional grant funds to enable staff capacity-building. This included hiring full-time bilingual specialists in Hmong and Spanish (authors Cha and Flores, respectively) and organizing cultural competency training for all program staff.

With assistance from Heifer International and the Highlander Center, we also organized an intensive interpreter[1] training for staff members and area agricultural professionals with bilingual skills, including training in simultaneous and consecutive interpretation[2] techniques in the fall of 2008. This was a two-day, intensive, hands-on learning experience in cross-cultural, cross-language interpretation; the creation of inclusive multilingual spaces; and the usage of simultaneous translation equipment. The goal was to build a "bank" of skilled interpreters who could be called upon when needed to assist with educational events.

Sustainable Farming Courses

1. Whole Farm Management and Planning

For English speakers, this weekly evening or weekend course takes place during the winter off-season and ideally is led by trained county Extension educators with an interdisciplinary, holistic approach to farming systems, a strong knowledge of the local community, and an understanding of participatory adult educational techniques. The goal of our curriculum is to introduce participants to ecologically based production practices, including integrated soil and pest management, pasture-based livestock systems, and organic certification requirements in a whole farm planning context. The participants develop the skills needed to evaluate the full range of production and marketing options given their financial, labor, and natural resources, their location, climate, soils, proximity to markets, and other social, economic, and environmental goals. Classroom modules are supplemented by hands-on homework assignments, field exercises, and on-farm seminars held at exemplary local farms. The capstone assignment is the development and presentation of a Whole Farm Plan that integrates personal goals with decisions about production, financing, labor, marketing, and natural resource management.

[1] *Interpretation* refers to transferring a message from a source language into a different language in a linguistically, emotionally, and culturally equivalent manner using oral or sign language. In contrast, *translation* refers to transferring equivalent meanings from one language to another working from *text* to *text*.

[2] In *simultaneous* interpretation, the interpreter communicates the message in the target language as rapidly as possible while the source language is spoken continuously. Microphones and headsets are commonly utilized, although the interpreter can also speak softly to a small group without audio equipment. In *consecutive* interpretation, the interpreter speaks in segments after the source-language speaker has paused.

While this course has proven popular with a general small-farm audience, the English version relies to some extent on reading and writing assignments. This approach had to be completely reassessed for Hmong and Latino farmers due to literacy limitations. For these audiences, Cha and Flores adapted the course to rely more on oral presentations, hands-on demonstrations, and audiovisual aids, such as graphic slides and video and audio recordings. From initial needs assessments we learned that the Hmong written language is seldom used, so printed materials were not translated into Hmong. We did translate the course curriculum and other printed resources into Spanish. We also tested the idea of offering individual course topics as standalone "workshops" to see if that format worked better than an extended course offering. Also, we organized farmer study groups that meet outside the course time to address topics like pest management in greater depth.

2. Business Planning, Entrepreneurship, and Marketing

This course was originally designed as a sequel to the above course for beginning farmers, as well as those who were already farming but who wanted to assess their sustainability or make a transition to new crops or markets. This course is typically co-taught by a county-based Extension educator and, where needed, a business expert such as a counselor from the state Small Business Development Centers or another trained business expert. Course formats piloted for English speakers included weekly evening courses, weekly Saturday morning courses, and four-day intensive workshops.

We use a similar format of interactive classroom learning, combined with hands-on exercises, and field visits. Farmer mentors and other guest experts are drawn from the local area to cover key concepts in business management and entrepreneurship. For example, participants have an opportunity to learn directly from bankers about financing issues; from marketing specialists about processing, packaging, promoting, and selling; from attorneys about legal issues; from income tax specialists about tax filing; from government agencies about farm assistance programs; and from farm accountants about effective bookkeeping systems and budgeting. Local small farmer mentors share their business plans, record-keeping, and marketing systems with the class. Weekly course assignments focus on completing specific pieces of the farm business plan. The final assignment is to complete and orally present a farm business plan.

As will be detailed in the results, this has been a difficult course to adapt for immigrant farmer audiences, largely due to the complexity of the written and financial materials. Our approach was to revise the curriculum by shortening and simplifying the concepts presented as much as possible. This revised curriculum was translated into Spanish. For the Hmong audience, however, the topics were orally translated by the instructor during class. At the request of the Hmong farmers, the forms and handouts remained in English so that younger family members who have been educated in American schools could read them. Farmer-to-farmer learning strategies, hands-on workshops, and field visits were employed with simultaneous and consecutive interpretation where needed.

3. Follow-up One-on-One Consultation

For the multilingual audiences, we budgeted instructor time to follow group learning activities with extensive one-on-one coaching and assistance to design an individualized business plan and a practical record-keeping system. Individual consultations with the instructor took place as farm visits or at the Extension office. We tried as much as possible to involve all family members in the business-planning process to ensure their buy-in and to gain the benefit of the literacy and language skills of the younger generation.

A new idea employed with two Latino business-planning courses was to pair Spanish-speaking college business students with a farm couple. The students helped the farmers write their farm business plans as part of their class assignment, providing the farmers with extensive individualized attention and the students with real-life business case studies.

Radio and Audio CD
We worked with the Washington State Department of Agriculture (WSDA) to obtain funds to write and record 10 thirty-minute radio scripts in Spanish on key instructional topics from the Cultivating Success courses. The format was modeled on talk-show interviews and covered such topics as direct marketing, licensing and regulations, food safety, financing options, crop insurance, pesticide regulations, and federal conservation programs. The topics were first broadcast as monthly radio shows on the KDNA Spanish-language radio channel for central Washington. The recordings were then made into CDs and offered as a free, 5-CD audio booklet to interested beginning and established farmers. Because radio broadcasts and audio CDs tend to be readily accessible and popular with Latino agriculturists for use while driving, we hoped that these media might help overcome the time barriers to attending workshops or classes in person.

Hmong Youth Video Project
In an interesting offshoot of the Hmong farmer education program, Cha has involved Hmong farm youth from the Seattle area in videotaping and producing educational films about Hmong cultural traditions and farming practices. The goal was for the Hmong youth to learn how to create educational videos in Hmong to use with the different Cultivating Success course topics while gaining new practical skills and knowledge about their communities. With assistance from a nonprofit Seattle film studio, 911 Media Arts Center, and supplemental grants from the local conservation district, Cha recruited a dozen Hmong farm youth to attend 12 weekly courses to learn how to shoot and edit videos. The instructors at the film studio taught the group of youth and four Extension staff mentors how to structure film projects from preproduction planning through film photography and editing.

Bilingual On-Farm Workshops
Each year our WSU Small Farms Program offers a "Farm Walk" series designed to facilitate experiential, farmer-to-farmer learning on the most innovative and advanced organic farms in the state. The series is organized in partnership with the Tilth Producers Association of Washington to ensure the strongest possible grower participation in program design, implementation, and evaluation. In its sixth year, this program brings farmers and agricultural scientists together on farms around the state to study the techniques used by advanced organic farmers and to discuss challenges and practical solutions.

The walks provide an opportunity to share the unique technical expertise of established growers with current and future farmers through discussion and demonstration sessions. The goal is for attendees to learn new production and marketing strategies that can improve environmental and economic outcomes and try them out on their own farms. Held throughout the growing season in geographically disperse areas of the state, a study theme that highlights the farm's unique attributes is selected ahead of time and a comprehensive resource manual is prepared. During the 2007 through 2009 seasons four Farm Walks were designed and promoted specifically for bilingual farmer audiences. In two cases, the farmers themselves were Spanish speakers, so presentations were made in Spanish with interpretation back to English provided by our staff. In the other two cases, although the farmers were native Hmong and Spanish speakers, they wanted to make their original presentations in English with interpretation back to Hmong and Spanish provided by Cha and Flores. In all cases, only two languages were offered at a time: either Spanish/English or Hmong/English.

Applied Research Methods

Data was gathered for this case study of the Cultivating Success Immigrant Farmer Program in a variety of ways, including needs assessments conducted through listening sessions, surveys, and interviews; program records; and formal evaluations. In addition, as program organizers and instructors we draw on our own experiences, observations, and reflections. We were not detached researchers, but rather committed participants and co-learners aspiring to employ participatory research and evaluation methods to

the extent possible (*see* McGuire, 1987; Fals-Borda & Rahman, 1991). We occupied positions of power relative to the program participants which certainly affected the dynamics of the learning environment and the feedback we received. We fully recognize that our own interests and biases have shaped our research process, our interpretation of the evaluation findings, and the conclusions we have drawn.

Rural Roots, Inc. (2007a, 2008) was hired as an outside professional evaluator to implement formal evaluations of all Cultivating Success programs. Evaluations were conducted at the end of each course or learning activity and, in addition, past participants were contacted one to three years after their participation to assess longer-term outcomes. As will be discussed, the standard Cultivating Success evaluation tools and processes had to be adapted in a variety of challenging ways to serve a multicultural audience.

Needs Analysis

Our WSU Small Farms Program conducted a statewide survey of small farm operators in Washington to determine their research and education needs as accurately as possible at the establishment of the program. In 2002, we drew a statewide random sample of all farmers from the Washington Agricultural Statistics Service (WASS) farm list and sent them mail surveys asking a variety of questions about their farm characteristics, farming and marketing practices, and research and extension priorities (Ostrom, et al., 2002). With a response rate of nearly 50 percent, this survey had 1,600 responses that turned out to be quite representative of the farm categories in the state and could be sorted by farm size. In another approach to reach small growers, we built our own list of 1,743 small farms in Washington and Idaho based on existing databases and drew a sample from these small farms specifically (Rural Roots, 2007b). This mail survey had a response rate of 42 percent.

While these surveys did have a few respondents who identified themselves as Hispanic or Asian, we realized that a mail survey was an inadequate method for reaching new immigrants and refugees or those with limited English or literacy. Instead of relying on survey results for this audience, we organized targeted listening sessions and personal interviews using bilingual facilitators.

The first task was to locate and identify Hmong and Latino farmers since they did not show up on any preexisting farmer lists and most were not counted in the 2002 Agricultural Census. Because they market their products almost exclusively at farmers markets, the Hmong farmers were identified largely through the markets, as well as through extended family networks. Latino farmers were first identified through a variety of outreach methods, beginning with informational interviews with church staff, soccer associations, and health clinics in the target region of Central Washington. Outreach was also conducted with farm workers to identify those who may have started their own farms on the side or may aspire to start their own farms. The pesticide certification clinics required by the Washington State Department of Agriculture for all farm workers who handle pesticides proved to be a useful venue for reaching farm workers interested in farm ownership. Through these methods a database of 88 Hmong operated farms (associated with 280 different adult farmers) and 289 Latino-operated farms was constructed. Because they farm in extended family networks, most Hmong farms have multiple adults associated with them.

Using telephone recruiting from the farmer database, three listening sessions were held with Hmong farmers in the Seattle area in 2004 and one in Spokane in 2006. These listening sessions, held in Hmong, drew from 15 to 20 participants each and provided an opportunity to ask participants about their farming and educational interests. Later, Bee Cha also conducted informal personal interviews with all the Hmong farmers he could find by visiting each farmers market in the Puget Sound area in 2006. Working with the Center for Latino Farmers in Yakima to recruit participants, again by telephone, three listening sessions with Latino farmers were held by Malaquías Flores in Central Washington in 2005. Another 285 Latino

farmers were surveyed about their needs by Malaquías Flores at this time using farm visits to conduct oral interviews.

Post-Activity Evaluations
With assistance from Rural Roots as the evaluator and our Cultivating Success management team, written evaluation tools were developed for use at the end of courses and other activities. Over 1050 individual written evaluations of courses and Farm Walk activities have been collected from participants. Wherever relevant, the written evaluations were translated into Spanish. However, it is clear that traditional written forms of evaluation hold limited value for most of the Hmong speakers and many of the Spanish speakers.

For this reason, we experimented with methods of conducting post-activity evaluations that did not rely on written forms. From consulting with Heifer International, we learned several techniques for participatory evaluation such as using hand raising, stepping forward or back, or moving to various stations to indicate different responses to the evaluation questions posed. At the end of courses for Latino farmers we also experimented with evaluation questions designed as focus group interviews led by a Spanish-speaker other than the course instructor. Finally, all Cultivating Success instructors are encouraged to check-in with their students regularly throughout a course to make sure that student goals are being met.

Most recently in 2009 we tested a new automated, audience response "clicker" system with Latino farmer audiences. Each participant was issued a small electronic clicker like a television remote control device with numbers on it. An oral question was posed and the meanings of the response categories from 1-5 were explained. Each time a question was asked, the respondents anonymously selected their answer category with a click. The different responses were automatically aggregated on a laptop and projected graphically on a screen for audience review, as well as read out loud. Participants really seemed to enjoy this process and immediate feedback, in contrast to traditional written evaluations.

Past Participant Evaluation
English-speaking past Cultivating Success Course participants with valid addresses were surveyed in the winter of 2006 by mail survey (Rural Roots 2007a). In addition, outside bilingual evaluators were hired to conduct oral interviews with past Hmong farmer and Latino farmer participants.

Additional surveys of past Hmong and Latino program participants were conducted using bilingual outside evaluators hired by Rural Roots and oral interviews in Hmong and Spanish in the winter of 2009-2010. English-speaking past students were contacted and provided with a choice of mail or online surveys.

Results and Discussion

In this discussion of the impacts and outcomes of our Cultivating Success program for immigrant farmers, we report on the findings from the evaluations that were conducted at the end of each individual educational activity, as well as interviews that were held with past participants one to five years after participating in a program. This discussion also incorporates the records, observations, and experiences of the authors who organized and offered these programs. Further, we reflect on the relative efficacy of the different evaluation techniques that we tested for their relevance in cross-cultural and limited literacy settings.

Capacity Building
Our experience made it clear that engaging diverse groups of new farmers would require going well beyond providing translation of existing written materials or arranging interpretation for existing educational programs. As experienced in attempts to engage multilingual audiences around the country, building attendance at educational events without prior personal contact or a personal relationship with an organizer is difficult. For example, extension educators, non-profits, and government agency personnel in Washington had been trying to engage Hmong refugees in agricultural programs for years with generally low participation rates.

First, personal relationships of trust with the educators had to be developed in order to build meaningful program participation. For us, this required hiring staff possessing both strong bilingual qualifications in the target languages as well as strong cross-cultural skill sets. It also required a significant time investment and a willingness to be physically present to build relationships in the target communities. We observed that such relationship building can be very difficult to accomplish within the time span of a single grant proposal. We were fortunate to be able to acquire continuous grant funding for our immigrant farmer program over a period of five years so that we could avoid staff turnover and establish and maintain personal relationships with the farmers and immigrant communities. It was through these relationships that farmers and aspiring farmers gained familiarity with our educational programs and became interested and comfortable participating.

We also found that it was important to provide close collegial support and professional development opportunities for bilingual educators, as well as cultural competency training for all program staff. The job of a bilingual agricultural educator can become overwhelming because once these specialists become known and trusted in an immigrant farmer community the demands on their time can be extreme. Other government agricultural agencies may soon begin to recognize their value and rely on them as a key link to the farmers for their assistance programs. The farmers themselves may begin to see these educators as their primary support system for solving all of the problems and crises encountered in adjusting to life in a new country and culture.

Offering educational programs that better equipped all of our Small Farms Program staff and other Extension and non-profit personnel to assist with multicultural programming helped to spread the responsibilities beyond the two bilingual educators. Participant evaluations of the diversity workshop and the intensive interpreter training held for staff and other area agricultural professionals were extremely positive. Around 70 agency professionals, educators, and non-profit service providers participated in what we called a "Multicultural Farming Roundtable" held on the border of Central Washington and Oregon in the fall of 2008. In the evaluations collected, 86 percent of respondents said they would make changes in their programs to support multicultural constituents and every respondent reported having made valuable new connections at this event. The aspects of the workshop most appreciated by participants were the presentations of their stories by immigrant farmers, the value of the networking opportunities provided, the new information about available resources, and the sector diversity of the conference participants. It appeared that many public sector service providers were eager to serve diverse farmer audiences, but lacked the skills and knowledge of how to get started. There were widespread requests for follow-up learning activities of a similar type.

Perhaps the most significant professional development activity was the intensive interpreter training for bilingual agricultural professionals that we co-organized with Heifer International and a national trainer from the Highlander Center in Tennessee. On 100 percent of the evaluations from the agricultural interpreter training workshop respondents indicated that they had gained new knowledge of how to create multilingual spaces that would impact their future work.

The important lesson here was that just because a person possesses bilingual skills, they do not "automatically" understand interpreting techniques or how to use the simultaneous interpretation equipment. Interpreting by itself is a highly skilled profession that can take years to learn to perform well. It was essential that we provided our educators with at least some introduction to the basic skill sets needed to accomplish this work. Already, in the past two years, trained interpreters from our workshop have offered simultaneous interpretation for bilingual farmers at important workshops, small farms conferences, and Farm Walks in the state, making it possible for hundreds of multilingual agriculturists to participate in these events. In some cases, we have turned the tables

(and the power balance) and used the simultaneous interpretation equipment to make it possible for English speakers to attend presentations held in Spanish or Hmong.

Needs Assessments

Our surveys, evaluations, and focus groups with English-speaking small farm operators and beginning farmers in Washington and Idaho made it overwhelmingly clear that farmers prefer to learn from other farmers in realistic, on-farm settings. In our 2006 survey of 412 small-scale producers (Rural Roots, 2007b) around half of the respondents felt that the majority of new farmer education should occur on a farm. On-farm activities were the most preferred educational formats for both new and experienced farmers. Eighty-seven percent of respondents thought farmer-to-farmer learning would be useful or extremely useful. About 72 percent of respondents indicated they would be likely to participate in such opportunities.

Results from initial listening sessions and evaluations held specifically with Hmong and Latino farmers confirm the same preference for on-farm and hands-on learning activities. However, our initial needs assessments also identified unique characteristics and needs among these groups of farmers. Flores found that among the Latino farmers interviewed:

- 90 percent say they prefer to learn in Spanish
- Four our of five are from rural areas of Mexico
- Most are first generation immigrants
- 85 percent already owned their farmland (average size: 30 acres)
- The most common crops were fruits, followed by vegetables
- Most used wholesale rather than direct or value-added markets
- Strong interest in testing new marketing strategies and cooperatives
- Four out of five farmers had off-farm jobs
- Average education was sixth grade

Working with the Hmong community, Cha identified a total of 80 Hmong farm operations in the Seattle region and eight in the Spokane region. These farms are all operated by extended families so each farm has multiple farmers associated with it. Initial needs assessments with Hmong farm families revealed the following information:

- Most prefer to learn and receive information orally in Hmong
- Interested in audiovisual educational approaches
- Most have little or no formal education
- Traditionally, education occurred through oral and visual storytelling
- Most families have incomes below the poverty level
- Nearly all farmers rent rather than own their land
- Access to water, land, and transportation is extremely limited and insecure
- Flowers, followed by vegetables are most common crops
- Farmers markets are the primary market outlet
- Many have difficulty accessing the better farmers markets and feel excluded
- May have communication challenges with market managers
- Use very low-input farming systems
- Use hand labor primarily
- Rely on extended family members as labor source
- Want more information about mechanization options, especially equipment selection and repair
- Concepts of marketing, record keeping, budgeting, planning, pricing, etc. are unfamiliar
- Have little familiarity with Extension or federal agricultural assistance programs
- Social relationships are structured by strong kinship networks

Many of the marketing and business management needs we identified were similar to those identified in a University of Minnesota study of Hmong

specialty crop growers in the Minneapolis area (Olson, et al., 2003).

Participation in Courses and Workshops

1. Hmong Programs

Over the five years of this project, 280 different Hmong refugees participated in our pilot educational programs. Another 406 have viewed our Hmong videos at screenings held at the Hmong New Year Celebrations in Seattle and Spokane. A smaller subset of 35 farmers participated in a course series. In addition to taking advantage of the Hmong New Year gathering, program promotion was based on telephone calls by Cha using our farmer database and by word of mouth.

To the Hmong farmers, the value of attending an ongoing course or participating in an extended educational program was not immediately obvious. They preferred stand-alone workshops, especially workshops with an obvious and immediate benefit, such as the opportunity to receive assistance with repairing equipment at a tractor repair workshop or the opportunity to take home new row covers from a pest-management workshop. The workshops most well attended by the Hmong farmers have been hands-on sign-making and business-card workshops where they could take home new farm banners, produce labels, and business cards.

In the needs assessment and evaluation process, when they were questioned about the overall value of educational programs *in general* or in the abstract, the Hmong respondents were fairly critical or seemingly uninterested. However, when asked about specific workshops or the assistance provided by Bee Cha specifically, interview comments expressed strong appreciation. Also, when asked if they would recommend the programs offered by the WSU Small Farms Program to others, over 90 percent responded that they were "very likely" to do so (Rural Roots, 2010).

Interestingly, based on interview responses (Rural Roots, 2010) and the observations and experiences of Cha, the Hmong farmers were not very positive about the idea of farmer-to-farmer networking and knowledge-sharing. For example, in response to the translated interview question, "To what extent have you networked with other course or workshop participants?" all of the Hmong respondents selected the multiple choice answer of "not at all." The qualitative comments were mixed, with one farmer stating (after translation), "It's good to learn from each other, other farmers, and see other's farms and maybe learn something to help yourself." In contrast, another respondent noted, "I would like to share my knowledge but other Hmong don't want to share. We cannot network." Despite the comments on the evaluations, one outgrowth of the Hmong programming by Bee Cha has been the development of a "Hmong Farmer Association." This association, which loosely includes all of the 80 Hmong farm operations in the Puget Sound area, has served as a key decision-making entity, fund-raising mechanism, and distributor of disaster relief in times of community crisis, such as in two recent incidents of heavy winter flooding. Thus, while the importance of farmer-to-farmer networking may not have been directly acknowledged in the evaluations, our observations show that these relationships do hold at least some significance.

Another interesting outgrowth of the Seattle Hmong courses was that Somali refugees found out about them and asked if they could also attend. By the end of 2009, we had 40 Somali participants taking the Hmong course by using a translator. We were also approached by a group of Burundi farmers who did not want to take a course but wanted help starting a cooperative. Bee Cha has continued to do follow-up consultations with these groups of refugees.

2. Latino Programs

Participation levels in Latino farmer education programs have been high. Again, in addition to taking advantage of preexisting events, the most successful program promotions have taken place with telephone recruitment from our farmer database or by word of mouth. In central Washington, 151 Latino farmers participated in the whole farm and business planning courses offered by Dr. Malaquías Flores. An additional 46 Latino agricul-

turists participated in the courses we held in partnership with bilingual instructors from Wenatchee Valley College. Finally, over 3,000 Latino farmers and farm workers have participated in one-time workshops, Farm Walks, and conference presentations. As a follow-up to group educational activities, Dr. Flores has assisted more than 380 farmers individually with developing farm plans and accessing USDA programs and services. Another workgroup of eight Latino farmers has continued meeting regularly with WSU specialists to learn about Integrated Pest Management techniques for orchards.

In contrast to the Hmong farmers, evaluations and needs assessments with Latino farmers show an overall favorable attitude toward the general concept of education. When interviewed or questioned in listening sessions, Latino farmers expressed uniform interest in having access to more educational opportunities. For the Latino farmers, with both the Whole Farm Planning course and the business planning courses, the evaluation process showed that one of the most significant skills participants developed was the capacity to identify emerging market trends and to adapt their enterprises accordingly. This program was designed to help participants learn how to actively seek out information. For example, over 64 percent of business-course participants said that their knowledge of marketing options had greatly increased, and 68 percent said they increased their awareness of available agency resources. One translated quote stated, "I became more business-minded, connected to local resources, and learned how to market."

The Latino farmers had particularly favorable evaluations regarding the knowledge they gained from the bilingual Farm Walks held on Latino-operated farms. For example, after one such day-long event held on a fresh market organic vegetable farm (presented in Spanish and translated to English), Latino participants in the following percentages said they either somewhat or greatly increased their knowledge in the following topic areas: farm profitability (69%), soil fertility (96%), composting (42%), alternative pest management (62%) and marketing (58%).

Latino farmers also stated that they valued farmer-to-farmer learning and networking opportunities. In the pest management workgroup, 70 percent of respondents stated that the information obtained from the work group was "very important" to their farm decision-making on pest management. Finally, extensive comments elicited through past student evaluations emphasize that the one-on-one consultations with the instructor were the most highly valued aspects of the program.

Radio and Audio CDs

The audio CDs and radio versions of our Cultivating Success course topics developed in partnership with the state Department of Agriculture have proven to be in high demand. To date, more than 650 CD sets have been distributed. More funding is being sought to create and distribute additional copies.

Monthly radio broadcasts of each topic by radio station KDNA in Yakima (La Voz del Campesino at 97.1 FM) were continued over a year and were estimated to have reached around 25,000 radio listeners. KDNA has some degree of reception as far away as Wenatchee. A Spanish-language radio station in the Mount Vernon area (KSVR 91.7 FM) has also inquired about broadcasting all of the CD topic modules. We have not figured out how to evaluate the learning gains from radio programs.

Hmong Youth Video Project

Learning and passing on information in Hmong culture is traditionally done orally through folk stories and visually through the art of story cloths. While the course style of teaching with regular weekly meeting times has engaged some participants, our needs assessments and participation rates show that many Hmong may not view this as a valuable format. Work schedules, transportation, literacy rates, and learning styles presented additional barriers. Cha observed, however, that many Hmong farm youth have access to DVD players and were very interested in media technologies. In an effort to address the obstacles to classroom

learning, he organized the Hmong Youth Video project as described previously in the "Cultivating Success Overview" section. As a result of the training they received in this project, Hmong farm youth have now formed a "Hmong Video Club" and have begun actively making videotapes of on-farm, educational workshops on sustainable farming and marketing practices and translating them into Hmong. Around 600 Hmong viewed the first videos at screenings held at the Hmong New Year celebrations in Spokane and Seattle in 2008 and 2009.

While these projects are still in a developmental phase regarding their ability to spread new knowledge about farming and business practices, their value as a participatory learning tool to spur interest Hmong youth in learning about their community, their culture, and agriculture is readily apparent in the videos produced. The project has also assisted these youth in developing marketable skills. Two other organizations, including the Washington Sate Department of Agriculture, have now contracted with the trained Hmong youth to produce videos for them. As noted by Howard Rheingold (2008) in a recently published paper, participatory media education can encourage civic engagement by youth, enabling them to develop their own public voice rather than simply being passive consumers of media. This kind of media project might be expected to hold even more significance for youth from refugee families struggling to makes sense of cultural differences.

Assessing Overall Significance

In summary, the most significant overall outcomes and impacts that we were able to document and report from our educational activities are listed below. These results are based on follow-up surveys and instructor records.

- Over 280 Hmong farmers participated in WSU educational programs for the first time.
- Ten Hmong farm youth were trained in film-making and editing and have produced educational agricultural videos in English, Hmong, and Spanish.
- Over 600 Hmong refugees viewed the agricultural videos produced by WSU Hmong Youth film makers.
- Over 40 Somali refugees completed our semester-long WSU sustainable farming class designed for Hmong refugees by using an interpreter.
- New minority farmers began participating in USDA farm programs:
    - 25 Latino farmers obtained EQIP contracts.
    - 55 Latino farmers obtained FSA loans.
    - 2 Latino farmers obtained Farm Credit Service loans.
    - 2 Latino farmers received organic certification and 8 applied for organic certification.
    - 15 new Latino farms were started.
    - Two Hmong farms received organic certification.
    - One Hmong farm received an NRCS contract.
    - One Hmong farm received an FSA loan.
- 100 new Latino farmers and 78 new Hmong farmers participated in the U.S. Census of Agriculture for the first time
- Four new Hmong farms were purchased and 12 new farms were rented.
- A new Burundian farmer cooperative and two Latino farmer cooperatives were established.
- A new Hmong Farmer Association of 80 farmers was formed and it assembled and distributed disaster relief to both 2006 and 2009 Hmong farmer flood victims.

Thus it is clear that our work over the past five years has had some positive outcomes for new, multicultural farmers. We feel that these records are accurate because we can verify them. The accuracy of our evaluation data is less clear. While the Hmong farmers seemed to feel comfortable providing feedback that was critical once they agreed to participate in an evaluation interview, it was difficult to get them to participate in the first place. We found that if the farmers did not previously know the evaluator who contacted

them, they were unlikely to agree to the interview. We had assumed that hiring an evaluator from outside the community would be important for obtaining objective responses; however, without a prior personal relationship the evaluations could not be conducted. The first time we tried to do evaluations by using a Hmong evaluator from another state, only four farmers agreed to participate. The second time we attempted to conduct evaluation interviews, we decided to hire a bilingual evaluator from within the community to improve participation rates. Even so, we had to work very hard to get a 50 percent participation rate. It seems that if farmers were unenthusiastic about our educational programs or had a criticism they were less likely to agree to do an interview.

We had a different experience with the Latino farmers, who seemed very willing to participate in evaluation interviews regardless of whether they had a personal connection to the evaluator. We suspect that the Latino farmers may have given overly "positive" responses to their evaluation questions because, in comparison with the English and Hmong-speaking farmers, their responses were always more favorable, whether we used written evaluations, mechanical clickers, or oral interviews. Indeed, it was very difficult to get the Latino farmers to ever say anything negative. This may represent a cultural difference reflecting norms regarding "politeness," or it may simply reflect a greater appreciation of the chance to pursue educational opportunities. In both groups, farmer willingness to participate in the evaluation interviews and their opinions about our programs were strongly linked to their perceptions of Malaquías Flores and Bee Cha, whom the farmers saw as synonymous with the program. We still need to do further research to better understand these evaluation response patterns across different cultures.

Conclusions

Building a team with strong cross-cultural and bilingual skills and knowledge of the target communities proved essential to ensuring that educational approaches and priorities were developed based on accurate and ongoing needs assessments and were piloted with strong participation from target groups. It has taken time, but after refining our efforts our team has become increasingly skilled at creating comfortable and welcoming multicultural and multilingual learning environments. The relationships of trust formed between the project leaders and the farmers provided a participatory environment for guiding program development.

The most important lesson we learned was that establishing personal relationships with the target farmers was of fundamental importance, but it was time- and labor-intensive. It was also critical to recognize and address language and literacy barriers early on in developing relationships in these communities. We found that oral communication worked better than written communication. Interpreters could help make university program content and agricultural specialists accessible once personal relationships were established between the farmers and the program organizers. Without the prior personal connections, however, immigrant farmers were unlikely to feel comfortable attending events designed primarily for English speakers, even if interpretation was available. Finally, we learned about the need to constantly remain adaptable, patient, and flexible, because we still had so much to learn with each new approach we tried. At first, it was difficult to even locate the farmers. Next, it took a long time to build the relationships needed to encourage participation. Then, participation was never guaranteed unless the program itself was viewed as relevant.

From our experience, useful areas for future research would include further study of the most accurate evaluation techniques to use in cross-cultural settings. As discussed above, gathering objective feedback from farmer participants was challenging. Another area meriting further attention is the potential funding mechanisms available for this kind of program, where the clients cannot afford to pay for services on a fee basis. It is a significant challenge to fund ongoing, long-term programs using short-term grant funding cycles. While we were able to raise several million dollars to support this program over five years by

combining multiple grants, we worry about what will happen if the grant sources run out. The time required to build staff capacity and relationships with the target communities do not fit within the annual funding cycles of many grant programs. Indeed, the critical importance of long-term relationship building calls into question the whole idea of developing outreach programs for multicultural farmers based on short-term grants. For example, the USDA Risk Management Agency is an increasingly important funder of outreach programs targeting limited-resource, minority, and socially disadvantaged farmers. The agency has done a commendable job of catalyzing innovative new programs around the country. However, their partnership grants could be far more effective if they were awarded for projects extending more than one year at a time.

In summary, more reviews of immigrant farmer programs across the country are needed to help understand how they are being funded and the effectiveness of the various delivery options available. More policy research is needed on the impacts of current federal policies on these programs and recommendations for changes. For example, it might not be advisable for all of the federal funding for immigrant and beginning farmer programs to be allocated through short-term competitive grants programs. Perhaps funds could be better targeted toward building ongoing and lasting capacity through improvements to established public agricultural institutions such as Extension and other agencies with a long-term presence in target regions or by supporting long-standing nonprofits with a track record of serving multicultural and small farm audiences. Federal formula funding like that formerly allocated through the Smith-Lever Act Small and Part-time Farmer Program is a good example of targeted funding that provided small but stable funding for small farmer education through public agricultural institutions in each state.

The gains made by our program suggest that with the right incentives and training, public land grant resources can be better utilized to serve the incoming generation of multicultural farmers. It would also be useful to design and fund more meaningful cultural competency and diversity-building activities for public agricultural service providers and educators across the country. We found a strong interest in this kind of education among our colleagues, and small investments in this area might have a large impact in terms of capacity building and program effectiveness.

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Disclosure

In the interest of full disclosure, the authors note that they are employed by the Small Farms Program at WSU, a founding partner in the Cultivating Success program.

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Achieving program goals? An evaluation of two decades of the Apprenticeship in Ecological Horticulture at the University of California, Santa Cruz

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Abstract
The Apprenticeship in Ecological Horticulture (AEH) at the University of California, Santa Cruz, has been teaching people organic and ecological horticulture for 43 years. This paper examines the extent to which the program has met the goals of growing farmers and gardeners, and contributing to change in the food system. It also explores specific programmatic ways the AEH contributed to these outcomes. We surveyed program alumni from 1989 through 2008. Findings suggest that the program has successfully met its goals. According to alumni suggestions, the primary way the program contributed to these outcomes was by developing apprentice knowledge and skills through hands-on activities. In addition, other educational components, not always explicitly addressed in similar programs, were also key. We use different learning theories to help understand the AEH's success and make recommendations for similar programs.

Keywords
Apprenticeship, adult education, beginning farmers, experiential learning, organic farming, sustainable agriculture, food systems

Introduction
The Apprenticeship Program in Ecological Horticulture (AEH) is a world-renowned program situated within the Center for Agroecology and Sustainable Food Systems (CASFS) at the University of California, Santa Cruz (UCSC). For over 40 years, the AEH has provided intensive, residential training in organic farming and gardening. In 1967, at a time when the concept of organic was in its infancy and a marginalized idea, students joined the efforts of Alan Chadwick to start an organic food and flower garden at UCSC. The program has grown and evolved since then,

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seemingly in tandem with the growing sustainable food movement. In 2010, the AEH involves a structured six-month program that includes an established curriculum with classroom education, in-field training, and a myriad of activities for apprentices to engage in and learn about working in a sustainable food system.

The AEH is one of many programs training people to grow food in a sustainable manner. As of 2009, there were 164 colleges or universities offering education or training in sustainable food systems topics in the U.S. (compiled from Thompson, 2009). This number does not include the many nonprofit and independent organizations, and informal apprenticeships and internships that exist. Recently there has been an increase in both the interest in and number of these types of programs (Grabau, 2008; SAEA, 2009; SAEA, 2007; Parr, Trexler et al., 2007; Parr & Van Horn, 2006; Bhavsar, 2002). Given the long history of the AEH, the program potentially has useful information to offer similar efforts, particularly newer ones and those looking to improve existing programming. The survey of AEH alumni conducted in 2009 can provide this type of information. As part of a larger comprehensive internal review of the AEH conducted by CASFS, the survey examined program outcomes and identified ways in which the program contributed to these outcomes.

The purpose of this paper is twofold. First, it explores the extent to which the program's action outcomes have been achieved. The desired action outcomes are defined as those that accomplish the overarching goal of the AEH and serve the mission of CASFS, and so we examine whether past apprentices are "farming and gardening" and working broadly to create a more sustainable food system. The second purpose is to explore the program's contribution to these action outcomes from the perspective of the alumni. To address this goal we identify both the most important programmatic components and learning outcomes that helped contribute to action outcomes. Programmatic components are defined as the direct or indirect educative aspects or structures that the program offers people (class instruction, time with peers, etc.). Learning outcomes are defined as the personal and professional development that apprentices acquired through the program (skills, knowledge, etc.). We then use relevant learning theory to help interpret the findings and provide conceptual insights into how alumni descriptions about their development fit within the broader field of adult education. These insights can be used to improve the program's educational practice. In this way, practice can inform theory and theory can inform practice, in an iterative process.

Exploring program outcomes as well as how they were reached is important for several reasons. First, understanding whether the program is making an impact in the world once the apprentices graduate is an important part of being accountable to the AEH program goals and CASFS's mission, its participants, and its funders. It is also important to understand how the program contributes to such outcomes, since participants' behavior following their participation in the program and their perception of program aspects could be influenced by many factors. What can the program take credit for and what can it not? What can it do to improve outcomes? Understanding how the program contributed to these outcomes is a critical step in increasing the efficacy of the program. Finally, it is important to closely analyze and share the results of this study because few similar studies exist for programs such as the AEH.

Although the AEH is unique in its history, structure, and scope, findings from this evaluation can offer resources, insight, and inspiration to other programs such as similar beginner farmer programs, university-based sustainable agriculture programs, student farms, or other formal apprenticeship adult education models.

Background

History

In 1967, at a time of social and cultural turmoil, English horticulturist Alan Chadwick broke ground for a garden with students at the University of California, Santa Cruz. "It was a time of obvious

destruction," recalls Jim Nelson, an early student of Chadwick's. "The Vietnam war was raging, the world seemed preoccupied with artificiality and contrivance—students were hungry for something new that would help foster change, love of the earth, positive things" (Lindsey, 1997, pp. 1, 10). Chadwick and what became the Student Garden Project offered an ecological perspective, wherein people learned how to grow plants without any synthetic substances. Chadwick introduced a form of organic gardening called the "biodynamic/ French intensive" method. He led UCSC students and others in an effort that historically could be considered one of the initiators of the organic farming and gardening movement in the U.S. (Brown, 2000).

Additional land came under cultivation in 1971, and in 1975 a year-long residential Apprenticeship in Ecological Horticulture was founded and offered through UCSC's Extension program for students seeking intensive training in organic gardening and farming techniques. In 1980, as alternative agriculture gained popularity, the UCSC Environmental Studies Department proposed implementing the Agroecology Program, which incorporated the activities at the campus farm, Chadwick Garden, including the AEH. In 1993, the Agroecology Program changed its name to the Center for Agroecology and Sustainable Food Systems (CASFS) to recognize the social and environmental aspects of sustainable agriculture.

The program

Presently and for the recent 20-year period of this study (1989–2008), the Apprenticeship in Ecological Horticulture is a six-month, full-time, residential course in organic production and marketing. Over 30 (up to 39 starting in 1995) participants attend the program from April until the middle of October. Seven second-year apprentices (graduates of the previous Apprenticeship class who act as assistant instructors), four farm/garden managers, and one full- and one part-time coordinator constitute the core staff. The program takes place on a 25-acre parcel of land and the three-acre Chadwick garden.

Apprentices live on the farm as a semi-intentional community. First- and second-year apprentices grow, purchase, prepare, and eat meals together, clean common areas, and work together on the farm, gardens, orchards, greenhouses, and farm stand. Apprentices rotate chores and the responsibility of cooking and cleaning for their own community.

The apprenticeship model is the driving structure of the program, with an "I do, we do, you do" focus as the primary mode of instruction. The apprentices work on three main work sites where there are formal and informal talks, question-and-answer opportunities, and demonstrations. Each site has a different scale of production. The three-acre Alan Chadwick garden focuses on mixed annual and perennial production, including small-scale orchard management. A second hand-worked garden, located on the farm, is geared to a market-garden model and the production of flowers and herbs, along with vegetables and perennial plants. Lastly, the farm's tractor-managed fields of row crops cover 10 acres, where apprentices learn about small-scale crop production using mechanical cultivation. Apprentices also learn propagation techniques and orchard care, and participate in marketing activities, such as selling produce and flowers through both a farm stand on campus and a Community Supported Agriculture format (which replaced wholesaling in 1996).

The Apprenticeship Program's structure also integrates classroom instruction. Classroom time provides background information related to a range of production and marketing issues. Additionally, apprentices interact with the broader community and food system through field trips and talks by others working in sustainable food system areas, such as farmers, gardeners, scientists, policymakers, educators, sociologists, researchers, and naturalists.

Although the core program remained relatively stable throughout the study period, the program has changed since 1989. Primarily, it has steadily gained more structure and new elements. Classroom instruction, small-group crop talks and

seasonal topics, guided field walks, subrotation trainings, and responsibilities became more formalized and increased over time in an effort to ensure that every participant had the potential to receive the same instruction. By the mid-1990s the program included 300 hours of formal instruction to complement the 700 hours of work experience and in-field training. In 2003, staff developed a curriculum manual based on the program's main formal classes, trainings, and in-field demonstrations (Miles and Brown, eds., 2003). The curriculum was designed to support the Apprenticeship Program instruction and to assist other educational programs with instruction. In 2005, a complementary curriculum manual was developed that focused on small-scale marketing (Miles and Brown, eds., 2005). During this period, sociocultural and political economic issues related to sustainable agriculture and food systems were integrated more explicitly into the curriculum.

The goal of the Apprenticeship in Ecological Horticulture, as stated on the CASFS website, has been:

> . . . to increase the number and diversity of individuals who have a command of the fundamental skills and concepts associated with organic horticulture and agriculture, such that they will be prepared to actively participate in commercial or social service projects that aim to improve human health and environmental quality through organic practices (Center for Agroecology & Sustainable Food Systems, n.d. a).

This goal fits within the mission of CASFS, which has been "to research, develop, and advance sustainable food and agricultural systems that are environmentally sound, economically viable, socially responsible, non-exploitative, and that serve as a foundation for future generations" (CASFS, n.d. b).

Literature Review

Only a few published evaluations exist that explore how, or to what extent, programs similar to the AEH have achieved their outcomes. Of the existing evaluations, the three reviewed here are very different in scope. One program had no follow-up with graduates after they left (Falls Brook Center, n.d.), and the second program was much less intensive than the AEH (Cocciarelli, 2009). The third program, and most similar evaluation, was of the Agriculture and Land-Based Training Association's (ALBA) Small Farmer Education Program, known as PEPA (Strochlic and Wirth, 2005). This evaluation included 35 graduates and found that 24 (69%) were independent farmers at some point after graduation and that 18 (51%) were independent farmers at the time of the evaluation. Respondents reported obtaining skills, confidence, self-esteem and connection to others from the program.

In part because there were few studies to which we could compare our results, we drew upon learning theory to help put our findings in context. We used Benjamin Bloom's (1956) theory of learning domains, David Kolb's (1984) experiential learning theory, and Jean Lave and Etienne Wenger's (1991) theory of situated learning to help contextualize the study and provide conceptual insights into how alumni claims about their development fit within the broader field of adult education.

Learning domains and potential program outcomes

Bloom, ed. (1956) and his colleagues provide a simplified framework for conceptualizing different forms of learning. While this framework is somewhat mechanistic, it provides a conceptual map to view learning. Bloom developed a taxonomy to view learning from three distinct domains: the cognitive, psychomotor, and affective. The cognitive domain refers to the process of acquiring content knowledge: memorization, comprehension, application, analysis, synthesis, and evaluation. The psychomotor refers to the physical and mechanical skills associated with the discipline. Lastly, the affective domain consists of the attitudes and feelings that accompany the learning process and resultant identity.

While the process of knowledge and skill acquisition (cognitive and psychomotor domains) is a standard focus for many adult agriculture education

programs, less attention is given to developing the affective (attitudes and values) that enable learners to bridge the gap between knowledge and action (Lieblein et al., 2007; Boyd et al., 2006). Drawing from Bloom's (1956) classifications, Geir Lieblein's teaching team created an agroecology program that emphasizes the importance of the affective domain, in addition to the cognitive and psychomotor. According to Lieblein et al. (2007), "an important part of the learning process builds on a foundation of personal attitudes and individual growth" (p. 40). In order to focus on the affective domain and address the learning goals therein, Lieblein et al. created an affective learning ladder that parallels the cognitive learning ladder. Within the dual learning ladder, "in each dual step, the individual learns more about the world and its complexity but also more about personal values and attitudes in connection to society and the environment" (p. 40). For example, in this process, the learner gains the confidence, values, and vision to move forward and apply his or her knowledge in action. Similarly, Boyd et al. (2006) describe how they see affect leading to action:

> The interrelationships between cognition and affect cause a learner to further internalize the information and promote a change in attitude, belief, and values that would instill a desire to improve the condition of international agriculture and other relevant agricultural education content areas. (p. 29)

How people learn: The process and context

Kolb's (1984) theory of experiential learning is cited by Lieblein et al. (2007) and others as perhaps the most relevant practical theory for those working in adult agricultural education. While the theory is frequently used to better understand the role of hands-on learning activities in developing the cognitive domain, the theory is equally relevant to applications linking cognitive, psychomotor, and affective development.

Kolb's premise states that a learner constructs knowledge when he or she creates meaning from his or her experience. Experiential learning suggests that a learner cycles through a process that engages a concrete experience, reflective observation, abstract conceptualization, and then active experimentation. This cycle provides an opportunity for the learner to change or affirm the meaning made from prior experiences, opening the possibility for the learner to produce new knowledge.

While Kolb's process focuses largely on the individual learner, it is important to have a theoretical framework that accounts for the social dimensions of learning. We draw from Lave and Wenger's (1991) situated learning theory, which is based on research from a variety of apprenticeship models. Their research highlights the importance of social interactions and the activity-oriented environment of the learner. In situated learning, understanding develops within the whole person in his or her environment through participation, rather than passively to an individual who absorbs factual knowledge.

According to Lave and Wenger (1991), ideally a learner is situated in meaningful and production-based work, a context where he or she is able to practice and experiment alongside peers and masters. They refer to this type of participation as both legitimate and peripheral. In this context, the learner is not only developing his or her knowledge and skills through the work, but also is developing his or her identity as a competent practitioner or master in the field within a larger work-related community of practice.

Methods

Survey development

The survey was developed collaboratively with CASFS management and AEH staff, with some input from alumni. Overall, 17 alumni and others (who had done some type of apprenticeship elsewhere) pretested a survey draft and 9 people pretested the computer-based draft.

In the first few pretests, we asked how the program helped people do what they did after graduating in an open-ended manner. We then generated and

tested quantitative questions along with an open-ended question in several of the following pretests. Pretests suggested the quantitative question captured general responses and the open-ended question allowed for further qualification.

Survey implementation

The identified survey population was all past apprentices since the founding of the UCSC Student Garden Project (the precursor to the AEH) in 1967. When developing the survey, the past apprentice total was estimated at 1,200. The sample was drawn from an alumni database that was created in 1997 and updated most recently for fundraising efforts and alumni activities, focusing on those graduating between 1991 through 2008. The database had email addresses for 648 people, which constituted the survey sample. The survey was implemented between June 18 and July 20, 2009. The process for implementing the survey was strongly influenced by Dillman, et al. (2009).

For the analysis reported in this paper, we only included responses from people who graduated during the 20-year period from 1989 to 2008. People from earlier years were excluded for two reasons. First, the program has evolved considerably since its inception in 1967. To maintain consistency with exploring if and how the program has met its goals and served the CASFS mission, and to control for the large changes in the program, we chose a period of time where there were consistent programmatic characteristics. Secondly, we had far fewer email addresses for people who graduated from the program before 1989; hence the most recent 20-year period provided a larger sample.

Limitations

Contacting people through email can be limiting due to spam filters, lack of name recognition, and fear of phishing schemes. An online survey can be limiting in that not everyone has a computer (or a new enough computer), or an internet connection, to be able to take it. Given the methods used to identify alumni, we were most likely to contact more recent alumni and people who are active in farming and gardening in some way, since these alumni may have been more motivated to keep in touch.

Additionally, results looking at outcomes could potentially overrepresent those who are active in the field of food systems. People may have opted out of the survey since we said in the introductory letter that we want to know what they are doing currently. Two email responses to the solicitation letter hint at the possibility that people may have assumed that we did not want to hear from them if they were not doing work related to what they learned in the program. However, we identified several survey nonrespondents who are very active in sustainable food system and farming activities.

Finally, the response rate may have included fewer farmers than others working in the food system, since the survey was active in June and July, two busy farming months.

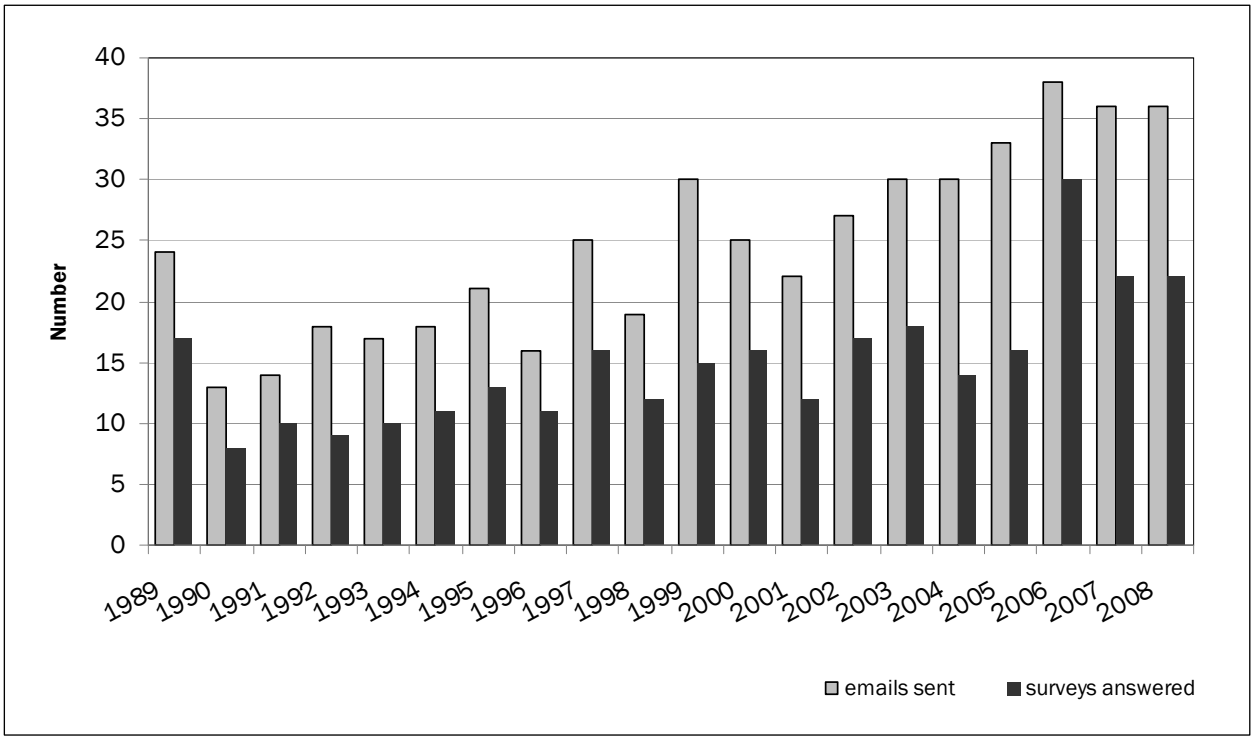
Response rate

Figure 1 shows the number of people who received an email and the number of people who responded to the survey, by year of graduation from the program. For most years, we had email addresses for at least half of the cohort (20 people or more). For 17 of those years, at least 25 percent of the class responded (10 people or more). The response rate for people who were sampled and who participated in the last 20 years was 58 percent. Overall, 37 percent of all the people who went through the program in the last 20 years answered the survey.

Data coding

There were several open-ended qualitative questions asked in this survey. Coding was approached from a grounded theory orientation (Strauss & Corbin, 1990; Glaser, 1992). Researchers reviewed the responses and identified themes from the data. The majority of coding was done by one researcher, followed by a check for at least face validity of codes by a second, and occasionally third, researcher. In cases where codes were revised, data were reanalyzed.

Figure 1: Number of alumni asked to participate in the study, and number of survey respondents, by graduating class (n=299)



Who responded?
Respondents were generally European-American, under 30 years of age while in the program, from a middle- or upper-middle-class background, and had at least a college degree when they started the program (see table 1). Although data are not available to confirm actual demographic representativeness, AEH staff believed this was reasonably representative of the people who went through the program.

Findings

Were the goals met and mission served?
In the survey, we looked at several types of action outcomes that meet the different goals of the AEH program and that serve the CASFS mission. We asked people what type of work they have done since leaving the program (paid, self-employed or start-up) in the sustainable food and agriculture system. For those who said they did some type of work, we asked them to list these jobs, and identify which ones they are currently doing. We then reiterated the jobs they listed to ask if any of them "involved farming, gardening or growing food with organic or sustainable methods." Additionally, we asked, "Did you initiate, create or start any of these jobs or efforts?"

When people responded that they did some "work"(as defined above) after graduating, we asked a series of questions about that work. One was to inquire how many years and months they performed farming or gardening work since graduating and whether they had owned a farm.

Regarding education activities, we asked "Did any of the work you've listed include education programs or activities as part of your formal goals?" and "Have any of your jobs or work efforts involved training future teachers or trainers of sustainable food and agriculture system-related topics?"

Table 1. Characteristics of Survey Respondents

	Survey Sample	
	n	Perent
Gender (n=268)		
Female	149	55.6%
Male	119	44.4%
Ethnicity (n=299)		
African American	4	1.3%
Asian American	10	3.3%
European American	221	73.9%
Hispanic/Latino	10	3.3%
Native American/American Indian	6	2.0%
Other	23	7.7%
Age During Program (n=265)		
19–25	85	32.1%
26–30	98	37.0%
31–35	45	17.0%
36–40	14	5.3%
41 and older	23	8.7%
Family Class (n=263)		
Wealthy	5	1.9%
Upper-middle-class	65	24.7%
Middle-class	136	51.7%
Working-class	43	16.3%
Low-income/poor	13	4.9%
Don't know	1	0.4%
UCSC Student? (n=299)		
Before?	39	13.0%
During?	9	3.0%
After?	7	2.3%
Ever a UCSC student	55	18.4%
Education Before Program (n=268)		
High school graduate	4	1%
Some college or A.S.	35	13%
College graduate	172	64%
Some graduate study	18	7%
Graduate degree	39	15%

We also asked if they did any volunteer or personal activities related to creating a more sustainable food and agriculture system. The basic responses to these questions are listed in table 2, below.

Primary goal: Are people farming and gardening? The answer is yes. Over 80 percent of respondents have done some type of paid or vocation-related work since graduating. Sixty-five percent are still doing this work.

Table 2: Activities respondents have done since graduating from the Apprenticeship Program (n=299)

	Yes	Percent
Work in Sustainable Food System Field	262	87.6%
Farming or Gardening Work	245	81.9%
Owned a farm	95	31.8%
Initiated a job	126	42.1%
Initiated a job or effort	144	48.2%
Education Goals	196	65.6%
Train Trainers	114	38.1%
Currently Working in Food Systems	216	72.2%
Currently Farming or Gardening	193	64.5%
Volunteer	240	80.3%
Personal activities	296	99.0%
Work in Food Systems or Volunteer	287	96.0%
Both Farm and Garden and Education Goals	187	62.5%

Regarding the larger CASFS mission of "is the program impacting the food system?" Again, the answer appears to be yes. Eighty-eight percent of graduates reported working in the field of sustainable food and agriculture systems in some way after graduating. Seventy-two percent reported *currently* working in this area. The types of jobs they listed are coded in table 3 below.[1]

[1] Job type was coded from open-ended questions in which people were asked to list the work (paid, self-employed or start-up) they've done in the sustainable food and agriculture system field since graduating from the AEH Program. Not all people responded in an easily codable manner. Some people listed where they worked or a general job title. Thus, we could not always tell if a job included education or farming and gardening activities. Therefore, the numbers of people identified as "farming and gardening" differ here than they do when people *selected* "farming and gardening" as a job option. The numbers on types of jobs are most revealing if viewed relatively—to see the differences between categories.

Table 3: Percent of people identified as working in the following areas, based on brief job descriptions (n=299)

Job or Vocational Area	Percent
Food Production	65.6%
Education	34.8%
Landscaping/Gardening	25.4%
Retail	15.1%
NGO	16.7%
Had other kinds of jobs (listed below)	38.5%
Consulting	6.4%
Networks/working groups	6.0%
Art/Media	4.7%
Research	6.0%
Resource conservation/restoration	4.7%
Organic Certification	5.0%
Dining & Restaurant	4.3%
Supplier	2.7%
Government	4.7%
Health	2.7%
Flower Production	2.7%
Processing	1.3%

Additionally, 42 percent of alumni reported having created new jobs that did not previously exist.

The mission of CASFS regards education as a large part of contributing to the creation of a more sustainable food system. The survey data show that 66 percent of respondents have had education goals as part of their food system–related work, and 63 percent have had both farming or gardening and education goals (this work could have been at the same time or different jobs). Thirty-eight percent reported they have trained people who will become trainers.

We asked people to identify what the general or broad educational goals were for their jobs. Most of these fell into teaching about some aspect of food production, while teaching about larger food system–related issues was also present.

Additionally, paid work was not the only marker of contributing to change. We asked people if they had done anything related to creating a more sustainable food system through volunteer (80 percent) or personal activities (99 percent). When looking at how many people either worked in the field of sustainable food systems or volunteered in some manner, we find that almost all the respondents (96 percent) have contributed in some way.

Program Contribution

To try to understand how the program contributed to people's activities after graduation, and the goals being met, we asked people three questions. Two questions addressed how people felt the program contributed to their postgraduation activities. The last one specifically inquired about program components, and asked people to describe which aspects made the biggest contribution to their postgraduation activities.

How did the program contribute to actions?

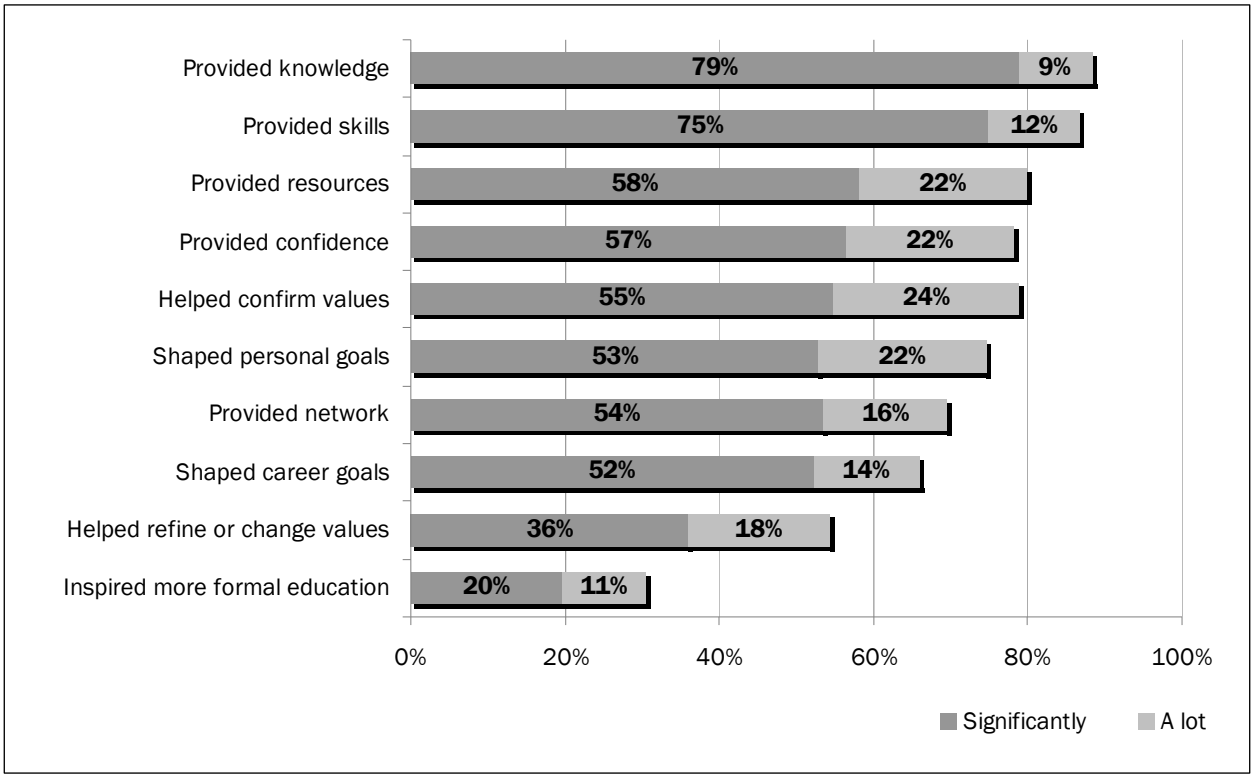
To explore how the program contributed to people's actions (and the program meeting its AEH goals—and CASFS mission), we asked an open-ended question: "How did the Apprenticeship Program contribute to any of the sustainable food and agriculture activities you've described earlier?" We then asked, "To what extent did the Apprenticeship Program contribute to any of the work, volunteer or personal activities you've describe earlier?" This was a closed-ended question where people rated 10 items on a 5-point scale from "a significant amount," "a lot," "somewhat," "a little," to "not at all" (see figure 2).

The results from these two questions are grouped according to domains of learning: cognitive, psychomotor, and affective (Bloom, ed., 1956).

Cognitive domain

The question about knowledge was rated highest for helping people do their work or other sustainable food system–related activities. Seventy-nine percent said the knowledge they received from the program contributed significantly, and 9 percent said "a lot." The open-ended question provides information about types of knowledge. As would be expected, many people reported that the useful knowledge was related to content on soils, compost, and other horticultural topics. Respondents also gave credit to learning about the food

Figure 2: Percent of respondents who said the following learning outcomes contributed "significantly" or "a lot" to their work, volunteer or personal activities after graduating (n=299)



system or the larger context that agriculture fits within. The following quote provides an example:

> . . .[The program] gave me a deep understanding of the food system and how organic and sustainable practices and local food systems are not just about the food I put in my mouth, they affect the farm worker/families, genetic diversity, health and retention of arable farm land, clean air and water, ecosystems on and off of the farm, food security and access to fresh, healthy foods, etc. This deeper systematic understanding has made it easier to stand firm in my commitment to organic/ sustainable/local as a consumer and as a farmer/gardener.

Psychomotor domain

The skills question in the survey elicited the second-highest level of response. Seventy-five percent of respondents said the program contributed significantly to their postgraduation activities by providing skills, and 12 percent said it provided "a lot" of skills. Most qualitative responses simply mention that they got "skills," or put a qualifier in front of "skill" (e.g., "real," "invaluable," etc.).

Affective domain

Several of the questions that explored the extent to which the program contributed to respondents' postgraduation sustainable food system activities fall into the affective domain. These included "provided confidence," "helped confirm values," "shaped personal goals," and "helped refine or change values." All of these were considered to have contributed to their actions either "significantly" or "a lot," for over 60 percent of the respondents (except for "helped refine or change values," for 54 percent of respondents).

The two most frequently endorsed affective items were "provided confidence" and "helped confirm

values." Close to 80 percent of respondents rated "provided confidence" and "helped confirm values" as having contributed either "significantly" or "a lot" to their current activities. Here are a couple of examples:

- The Apprenticeship Program provided hands-on experience with all aspects of organic gardening and confidence to apply these skills to school garden sites.

- Living in such an amazing setting in which the infrastructure was set up to allow us to live our values to an extreme degree was extremely inspiring, and encouraged me to pursue a high level of sustainability and food justice elsewhere in my life and work. First and foremost, the Apprenticeship Program is leading me, by example, towards practicing sustainability and justice and mindfulness in my life and work.

Other affective themes appeared in the open-ended question of "how the program contributed" that were not asked in the quantitative questions. The most frequent themes mentioned were that people felt inspired (they used that term specifically, n=22), and people were emotionally triggered to want to take action. Approximately 22 people either stated or described that they were "motivated" by the program, "empowered," or that it helped them make a commitment to the field in some way. There were a total of 41 people who responded to at least one of these two themes.

- [The program] inspired me to continue to pursue this challenging career path.

- The resources and education is nothing in comparison to the inspiration and drive to make a difference and the tools on how to do it.

- Pure motivation for achieving a goal that seems so daunting on the grand scale.

- It has made me a far more informed and motivated activist and advocate in the cause of planetary sustainability, broadly considered.

What components of the program were most important? To understand what specific components of the program most helped people do what they did after graduating, we asked the open-ended question: "What aspects of the Apprenticeship Program were most important for helping you to do any of the employment, volunteer or personal activities you stated earlier?" This question was qualified with the following example: "Please state any aspect or experience from the Apprenticeship—whether a formal part of the curriculum or not. Examples: doing field work, talking with peers at meals, the diversity of other participants, living on the farm, running the market cart, etc."

When the 243 responses were analyzed, all practical work was grouped under the header "hands-on" (n=180 / 74%). Within "hands-on," two distinct themes emerged: (1) field and garden work (n=100 / 41%); (2) the business management of the farm, specifically plant sales, market cart and CSA management (n=58 / 24%). Prompts for this theme were "doing field work" and "running the market cart." Respondents referred to hands-on work in various contexts, from different farm and garden sites to market cart and CSA work. This theme was the most common. The second most frequent theme was "living experience" (n=113 / 47%). The "living experience" referred to living on the land, at the edge of cultivated fields and living in the community with approximately 38 other apprentices. The prompt for this theme was "living on the farm."

Third in frequency was "working/sharing with peers" (n=98 / 40%). Respondents expressed the importance of interacting with their peers through working or socializing. Interactions with peers, building relationships, and creating networks with other apprentices were all components that were subgrouped under this theme. In addition, respondents expressed the importance of the diversity of other participants. This could have meant the diversity of prior experiences that peers brought, and/or the diversity of their backgrounds

(cultural, linguistic, racial, age, class, etc.). It is possible the respondents referred to "diversity of other participants" because it was in the prompt, although it is unclear as to what respondents meant when articulating "diversity of participants."

Fourth in frequency was thematically classified as "coursework" (n=94 / 39%). This theme consisted of formal activities focused on content knowledge and skill development. References such as curriculum, instruction, the classroom, lectures, and field trips fit within this theme. In this process we were conservative in order to distinguish between what was designed as formal curricular instruction and what were less intentionally designed and informal parts of the apprentice experience.

Fifth in frequency was the theme titled "working/sharing with master farmers/gardeners (instructors) and second year apprentices" (n=67 / 28%). Similarly to the logic of the theme related to peers, this theme arose from respondents' comments about the time and interactions with instructors and second-year apprentices. Explanations of the importance of building relationships with instructors and second-years and their appreciation for the instructors' teaching style were coded within this section.

The sixth most frequent theme expressed by the respondents as important speaks to the "sum of the parts" (quote from respondent) of the program, the "overall experience" (n=40 / 16%). Comments such as: "all of the above," "all of them," "the entire package," are examples of what we coded under the "overall experience."

For the sake of analysis, we developed and separated the program components that participants in the survey determined the most important. In individuating the program components, the data indicated a noteworthy caveat. Seventy-seven percent of the survey respondents articulated the importance of two or more program components of the five most frequently noted components listed above. This is indicative of the interrelated nature of the program and is mirrored in the sixth most frequent theme of overall experience.

Discussion

Action outcomes: Did the program meet its goals?
Overall, results of the survey suggest the AEH program succeeded in meeting its stated goals for the period 1989–2008, while contributing substantially to the mission of CASFS. Results suggest that a significant number of alumni are going on to successfully farm, garden, and engage society in broad, unique, and active ways that help create a more sustainable food system.

The numbers of alumni who entered farming and gardening professionally are impressive, given how difficult an occupation it is to enter and stay in as an employee or business owner. Over 80 percent of alumni reported having worked in the field of farming and gardening, and 65 percent cited currently having a related job.

The prevalence of education as a significant work-related activity for alumni substantially supports the CASFS mission by adding a multiplier effect to existing efforts to increase awareness and activity in sustainable food systems. As many as 66 percent of alumni reported having integrated educational goals into their sustainable food system–related work, and 38 percent reported training future agrifood system trainers. These findings suggest that alumni are extending what they learned in the apprenticeship by making new educational opportunities available to others over a wide range of settings, both formal and nonformal. In addition, if we include volunteer activities, almost all respondents have done something to help change the food system since graduating, thus further serving the CASFS mission.

Over 42 percent of alumni reported creating new jobs, primarily by starting their own businesses. Given that employment opportunities within the organic and sustainable field remain relatively small compared to the larger agriculture and horticulture industries, it is expected that alumni would need to create new work opportunities for themselves. It is

unknown if one of the reasons alumni have been able to create new jobs is a consequence of their degree of affluence and having opportunities and access to resources for starting businesses (e.g., capital). Nonetheless, this display of new job creation by alumni demonstrates a special way in which alumni are making an impact on the broader society and food system. This innovative behavior can play a potentially important role in pushing new social movements from the margins toward the mainstream of society.

In sum, these alumni professional behaviors show that the AEH program has achieved a measure of success at meeting its programmatic goals while actualizing the mission of CASFS: to help create a more sustainable food and agriculture system.

What contributes to action outcomes?

In viewing these programmatic results, we now shift toward exploring what might help explain alumni postprogram activities and their perceptions of the program's educational value and effectiveness. Given that the survey study was not experimental, there is no way to identify the causal variables that led to alumni performance or perceptions. For example, an individual's decision or ability to work in the sustainable food system is influenced by many factors, and we are unable to assume a direct relationship between the program structure and ultimate outcomes. By returning to the learning theory introduced in the literature review and relating it to key findings, however, we can make educated guesses about which aspects of the AEH contributed in what ways to the educational development and professional success of alumni.

The study's findings and theory suggest that developing learners' knowledge and skills through hands-on learning activities is key for a program such as the AEH. Alumni suggestions reinforce the importance of the commonly identified components of an experiential agricultural education program. Within this, the development of practical knowledge and skills through hands-on, field-based training stood out as one of the single most important aspects of the program. However, in addition to developing apprentices' knowledge and skills, alumni identified the importance of developing their affective domain. Almost 80 percent of alumni suggested both that the program provided confidence and that their values were confirmed, whereas 54 percent suggested their values were refined or changed. While improved confidence is often aligned with the development of knowledge and skill, confirming, refining, or changing values is not. Additionally, 75 percent of alumni suggested the program shaped personal goals, and there was a distinct theme of being inspired or motivated to action that contributed toward their future activities. These examples of affective development likely came through experiences that directly engaged apprentice emotions and attitudes towards their self-efficacy, life purpose, and perhaps most importantly, the philosophical, ethical, and civic dimensions of agriculture and food systems. The ALBA evaluation (Strochlic & Wirth, 2005) also found that the alumni's affective development supported them in being independent farmers.

Given that development in the cognitive and psychomotor domains is frequently the central focus of adult agricultural training programs, we must ask "what opportunities are missed by neglecting the development of learners' affective domain?" Leiblien et al. (2007) argued that unlike the cognitive and psychomotor, the affective domain has the potential to compel learners to bridge the gap between knowledge and skills, and the behavioral changes and actions that are needed to create more sustainable agriculture and food systems. We believe that the substantial affective component of the AEH program is a critical element contributing to alumni having a high rate of innovation and professional activity in the field.

What program components contributed most?

We identified program components that likely helped achieve previously described learning results. "Hands-on" had by far the greatest endorsement for helping people do what they are doing in the world (60%). Four others were in the same range: residential (38%), working with peers (33%), coursework (32%), and working with

teachers (22%). These primary program components are integral elements of two learning theories applicable to this type of education.

The program's self-description explains the pedagogical style of 700 hours dedicated to hands-on training and 300 hours dedicated to class time. Two of the most frequently cited program components were "hands-on" and "coursework," commonly referred to as the practical and theoretical. Not only were these components cited as important by respondents, their percentages roughly mirrored the teaching time ratio used in the program. This diversity of approaches fits well with Kolb's (1984) model of experiential learning, showing that the program is not simply a production-oriented technical training facility, nor is it predominantly academic, but rather it effectively combines components of each to facilitate apprentices making the most of their diverse educative experiences. Although respondents did not specifically mention reflectively observing their experiences and experimenting with their abstract conceptualizations, it does not mean that these processes were not happening.

Besides hands-on learning and curriculum-related activities, respondents stated that the living experience and working and sharing with peers were the other highest-rated components of the program. Apprentices' ability to develop intimate and long-term observational relationships with the biophysical environment, soil, crops, and constantly changing seasonal conditions on the farm was likely a crucial part of what made the practical learning on the farm as powerful as it was. However, respondents similarly recognized how living on the farm provided important opportunities to develop and maintain intensive work and recreational relationships with peers in their apprentice community. Notable within this finding is that among those program components alumni suggested as being the most important, their "peer work and sharing relationship" was cited more often than the relationships they built with the master farmers and gardeners. This correlates well with situated learning theory and highlights the extent to which peer-to-peer relationships are important within adult agricultural education contexts.

Lave and Wenger's (1991) situated learning theory provides a plausible explanation for why the social aspects of the living experiences and work with peers were so frequently cited as two of the most important educational aspects of the program. According to situated learning theory, knowledge production and learning are located in a field of social interaction. This idea expands on Kolb's (1984) experiential learning theory in important ways that may improve our understanding of why respondents have contributed to the goals of the AEH as well as they have. While Kolb suggests that knowledge is produced when learners construct meaning from experience, situated learning theory adds that learning is an integral and inseparable aspect of social practice, explained as a process of participation between individuals, their environments (culture, artifacts, tools, etc.) and a "community of practice." Apprentices live, work, eat, sleep, and relate to each other every day, creating a community of practice, wherein they are performing the lifestyle and work of a farmer and gardener. Through the apprenticeship, participants practice legitimate forms of meaningful production work and do so in ways that are consequential, but not set under a high-stakes production environment.

Within a community of practice, a learner develops a form of social membership. As a participant-apprentice works and engages with both the community and the environment, the participant can begin to envision herself or himself as a member of the practice community and ideally moving from novice to mastery. This is imperative for an individual setting out to find a profession in the sustainable food system. The AEH provides an incubator, wherein apprentices can explore and practice their membership as part of a community of sustainable agriculture and food system practitioners. Time to explore and practice this membership in a supportive environment is a critical part of constructing an identity as an organic farmer, gardener, or agrifood system

professional. We believe this process of membership or identity construction is a crucial piece of what has provided past apprentices not only effective knowledge and skills, but just as important, the spirit and durability to practice their profession in a marginalized field of work—the sustainable food system—and deal with the difficulties of working in such a field.

Even though we discuss these program components separately for analytical purposes, it is important to remember that they create a complex whole. The following alumni comment exemplified this concept:

> The Apprenticeship Program contributed to ALL of the sustainable food and agriculture activities that I have done. It gave me both the theoretical and practical skills to grow good food, it gave me insight and perspective on community food systems, food justice, and the breadth and depth of this type of work, it exposed me to so many models that feed the formation of my own choices in work and personal life...literally everything that I have done professionally (and so so much personally) since the Apprenticeship Program has been influenced by it and my time there at CASFS.

As reflected in the above quote, as many as 77 percent of the respondents described more than one of the main program components listed above as helping them. Our conclusion is that the integration of these program components contributed to the learning outcomes, and ultimately to the respondents' action outcomes.

Conclusion and Suggestions

AEH has been successful at both meeting its goals and addressing the mission of CASFS. The desired outcomes, to help people farm and garden, or contribute to the creation of a sustainable food system by other means, appears to have been realized in significant ways. The AEH contribution to these outcomes was primarily seen by survey respondents as providing the knowledge and skills necessary through hands-on activities. However, the AEH contribution was more than just those standard elements. It also provided a significant affective component—confidence, confirmation or changes in values, goal clarification, motivation, and inspiration—which appears to have a substantial connection to action. Furthermore, the methods or program components that helped people reach these outcomes fit within experiential learning theory: the integration of practice and theory, or hands-on fieldwork and coursework. Situated learning theory helps us understand how program participants are supported in a holistic manner, providing the foundation for innovating in a less-than-secure future work arena.

These findings lead to several suggestions that can be utilized both by the AEH and other similar programs. First, recognize the important success of existing program design. When speaking of program design, one of the ironies of the AEH program is that its pedagogy and curriculum design were artifacts of both a traditional apprenticeship model and a more contemporary counterculture. While the apprenticeship model has had great influence on the program structure, many novel components developed through trial and error and as adaptations to the practical realities of what was required to serve a diverse learning community interested in social change. The staff developed these novel components as practitioners, not academics, and without training in the field of education. Practice is as important as theory. However, we suggest an ongoing dialogue between practice and theory, where lessons from each can help better inform the other and ultimately improve program design and outcomes.

A second recommendation based on the findings is that programs could intentionally design activities and assessment that develop all the domains of people's learning, without neglecting the affective domain. Making a conscious effort to connect attitudes and values to knowledge and skill-building is likely to have important positive effects on the likelihood that learners will take what they have learned and actively use it in the world. Lieblein et al. (2007) make suggestions that seem appropriate

for university programs and curricula, such as "…provide the incentives and safe space for people to clarify their own attitudes through role play, case studies, open-ended situations, and in-depth discussion in the learning community" (p. 43). More vocational or trade-oriented apprenticeship models might include journaling or semistructured discussion questions during or after fieldwork that connect ethics, values, emotions, and the subjective to the knowledge and skills people are developing.

A third suggestion would be to experiment with implementing each of the different aspects of Kolb's experiential learning theory—in a systematic way. University programs typically emphasize the theoretical over the practical, whereas on-farm programs typically emphasize the practical over the theoretical. Given the findings of this study, we recommend that the best learning outcomes result from a balanced and functional integration of the two. Additionally, implementing "reflective observation" could look much like the suggestions offered for increasing affective learning. Intentionally implementing "active experimentation" could involve providing space for people to implement ideas generated through what they are learning—whether on a small section of independently managed field or in extracurricular activities outside the program in the context of projects in the surrounding community.

Fourth, when creating programming it is important to take into account the relationship apprentices have with the "field of social interaction," which includes intimacy with the land and biophysical learning environment, but just as importantly, to take into account the quality of their time with each other as a peer group as well as their teachers as a cohesive community of practice. Many of the peer-to-peer experiences reported in this study occurred outside the official coursework, which suggests that it is important not to underestimate the educative value that recreational time on the farm has for individuals and the community as a whole. We recommend that programs explore what characterizes various levels of community membership and create ways to assess where learners are developmentally along the path—from outsider novice to full member with mastery.

Including these concepts can happen in many ways. Nonresidential programs can find ways to connect people beyond fieldwork and classroom time. Meals can be shared, formally and informally. Short tours and overnight field trips can make use of farms both near and far. Any program can facilitate social interaction (within or outside the field and class) and create developmental assessments to support learners' self-assessments, peer assessments, and instructor assessment, from the start of the program to its completion.

The study's findings also offer suggestions for future research. First, further explore the contribution of the affective realm in bridging learning and action. What role do inspiration and motivation play in facilitating learning and taking action? How are these states best cultivated in individuals and community? Second, we believe it is worth exploring how other program aspects can create an effective "community of practice" incubator. Not all programs can be residential, so how can others get similar outcomes with other methods?

In summary, exploring AEH's program outcomes has not only shown the program's contributions to growing farmers, gardeners, and food system change, it provides insight as to how an educational program can contribute to these outcomes. Experimenting with the findings and suggestions can provide programs, particularly new ones, with even more support for success.

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The benefits, challenges, and strategies of adults following a local food diet

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Abstract
Supported in part by a variety of popular books, websites, and other media, the interest in local food is building dramatically, and a growing number of people are increasing their purchases of local food. This paper describes a study that explored the perceived benefits and challenges of following a diet consisting exclusively of local food in southwestern Virginia, as well as the strategies for coping with its limitations. Nineteen individuals participated in a four-week Local Food Diet Challenge, which included eating only foods produced from within 100 miles of the participants' homes. Part of a larger study looking at the nutritional impacts of a local food diet, this study included a pre-diet questionnaire that gathered participants' demographic characteristics, shopping patterns, eating behaviors, and attitudes toward local foods; consumption-reporting forms during the diet period; and a post-diet focus-group discussion for participants to share their experiences in following the local food diet. In this paper we report the major themes that emerged in the focus groups and offer recommendations for locavores and organizations attempting to maximize local food consumption.

Keywords
100-mile diet, local food, sustainable food system, focus group, locavores

Background
Over the last twenty years the United States has benefitted from a resurgence of farmers' markets and small farm sites, and from innovations such as

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community supported agriculture (CSA) (Agricultural Marketing Service, 2009; Brown, 2001; Brown, 2002). Farmers' markets, for example, showed growth from 1,755 markets in 1994 to 5,274 markets in 2009 (Agricultural Marketing Service, 2009). Increasing support for local food systems has been fueled by a combination of social, environmental, economic, dietary, and food quality concerns (Andreatta and Wickliffe, 2002; Brown, 2003; Payne, 2002). Further, research has noted several benefits of local foods to communities (Martinez, et al., 2010), such as: reduced food safety risks (Peters, Bills, Wilkins, and Fick, 2008), conserving open space through farmland (Ikerd, 2005), positively impacting food security (McCullum, Desjardins, Kraak, Ladipo, and Costello, 2005), and increased revenue and jobs for local economies (Swenson, 2009).

Local food is gaining traction in the popular media, further fueling the growth of what has popularly become known as the "local food movement." A plethora of books and magazine and newspaper articles have touted the benefits of maximizing local food consumption. At least three books have been published and well received in the past few years detailing the experiences of individuals and families who have spent an entire year following an *exclusively* local foods diet (i.e., a diet containing only local foods, at least to the extent possible). In *Coming Home to Eat,* Gary Nabhan (2002) describes the "pleasures and politics of local foods" (as the title posits) through his experiences eating locally in Arizona feasting on wild game, desert foods, and foods from his own garden. In Barbara Kingsolver's *Animal, Vegetable, Miracle* (2007), the well known novelist and her family spend "a year of food life" (as the title posits) eating from their own farm and the farms of their neighbors in southwestern Virginia. And in *Plenty,* a man and woman living in British Colombia describe their "raucous year of eating locally" (as the title posits) during which they followed a diet limited to foods grown or raised within 100 miles of their home (Smith and MacKinnon, 2007). Smith and MacKinnon's experiences were first shared online and then in their book elaborating on their year of local eating. Together, these books have increased awareness of local foods as each author weaves statistics and facts about the food system into their tales of the pleasures and challenges of eating locally. Since that time, the "100-mile diet" has emerged as a popular definition to use when differentiating between local and nonlocal foods. Finally, this recent surge in public interest in local foods has been captured by the term "locavore," which has emerged to describe an individual who attempts to eat foods that are produced locally, at least to the extent possible.

While the largely anecdotal evidence of the benefits of local food consumption has contributed to the growing local food movement, there is a dearth of research-based evidence on the realities of a diet composed exclusively of locally sourced food, however "local" is defined. There is a significant body of market research on *perceived* benefits to consumers. Stephenson's (2004) survey of consumers in Oregon revealed that adults purchased local foods as a means of supporting local farmers and the local economy, and because of the high quality and positive experience when purchasing locally sourced foods. In a study by Brown (2003), Missouri consumers also reported that they perceived local produce to be higher in quality than conventional produce. Brown also found that the highest support for local produce was from adults with higher incomes and educational levels, those who regularly purchased organic foods, and environmentalists. Focus groups of consumers in Madison, Wisconsin, conducted by Zepeda and Leviten-Reid (2004) showed that food freshness and flavor, and support for local farmers, were the primary factors motivating local food purchases. To our knowledge, however, no study has described in detail the experience of a sample of consumers actually eating an exclusively local food diet.

In this paper we describe our qualitative study of 19 residents of southwestern Virginia who took our "100-Mile Diet Challenge." We report their perceived benefits and challenges in eating local food exclusively for one month, as well as strategies they used to deal with the severe limitations in variety and volume of exclusively local foods. In

effect, the participants in our study became expert local food consumers, locavores who provided valuable qualitative insights into understanding the benefits and difficulties of eating an exclusively local diet.

We are not recommending that North Americans suddenly, en masse, go on a strictly local diet, nor do we argue that an exclusively local diet is a preferred diet. Indeed, such a strict diet could have severe health consequences for those not prepared for the extra time and resources required, or for those living in a region where local food is not commercially available. We believe that a candid look at the challenges of a local food diet will be useful to local food eaters and advocates interested in promoting local food consumption in order to understand and overcome some of the inherent limitations.

Methods

In this section we describe how we operationalized a definition of local food, recruited participants for the study, and conducted the "100-Mile Diet Challenge." There are a number of ways to define local food, including food produced within a county, within a one-hour drive, within a state, etc. Each of these has pluses and minuses, but we chose to use the 100-mile delineation of a local food because it is less vague than other definitions and offers a memorable title to describe a novel eating plan: "The 100-Mile Diet Challenge."

Using the local newspaper, email announcements, and recruitment flyers distributed at a local farmers' market and at local businesses selling and promoting local foods, we invited participation by Montgomery County, Virginia, residents in our study that involved taking the 100-Mile Diet Challenge for four consecutive weeks during August and September 2006. Participants needed to meet the criteria for the study of being healthy, not currently attempting to lose weight, and currently consuming less than half their food intake from local foods (since the goal of the study was to increase local food consumption). Each participant received a resource guide that was developed by the researchers to help identify locally produced foods available at local markets and to assist participants in incorporating these foods into their daily diet. The participant's family members were not required to follow the local foods diet, although some individuals reported cooking local meals for the entire household. Study participants also received financial compensation (US$75) and a box containing local foods (valued at approximately US$25) for their involvement in the study. Participants attending one focus group discussion after the conclusion of the study were compensated an additional US$25. Nineteen participants were recruited and all completed the 100-Mile Diet Challenge. The study protocol was approved by the university's Institutional Review Board, and informed consent was obtained from all participants prior to their participation in the study.

Pre-diet Questionnaire

We developed a pre-diet questionnaire to ascertain the demographic characteristics of the participants as well as their food purchasing patterns and motivations for buying local. There were both closed- and open-ended questions, which were based on other surveys of consumer attitudes towards local food purchases and environmentalism administered in other regions (Brooks, Mash, Guerrieri, Gross, and MacLaughlin, 2003; Brown, 2003). The questionnaire included questions on age, race, income, gender, education, marital status, and number of household members. Questions also included types of food markets used most frequently by each participant, whether or not they purchased local, organic, and fairly traded foods, and how they would define a local food. Participants were finally asked open-ended questions regarding their motivation to consume local food and to participate in the study.

Dietary Intake Records

Prior to starting the challenge, each participant received forms to record their dietary intake for seven consecutive days prior to taking the 100-Mile Diet Challenge, in order to establish a baseline, and for two of the four weeks of the 100-Mile Diet Challenge. We trained each participant individually in how to correctly complete the food records and provided the participants with examples of both

complete and incomplete food records to emphasize the importance of accurately recording food intake. Participants recorded on the food record where each item they consumed was purchased and whether each item was grown or processed within 100 miles. Participants were only required to track individual consumption and were not asked to track what local food the household consumed.

Follow-up Focus Group

Following the completion of the four-week local foods diet challenge, study participants were invited to participate in focus group discussions. The use of focus groups in data collection can help to bring meaning and depth to the subject of local eating (Rabiee, 2004). Focus group questions encouraged participants to discuss the challenges they faced while following the four-week local foods diet, as well as the personal benefits they observed while following this diet. The focus group sessions were held between two and three weeks following the completion of the four-week local foods challenge. Participants attended only one of two offered focus groups. Each group consisted of six to eight participants at a time and was led by an experienced moderator using the established focus group protocol of Kruger (1988). Each focus group discussion lasted approximately 60 minutes. The discussions were audio-recorded and the co-moderator took notes for use in analysis. Open-ended questions were used to encourage an open discussion on the topic of local eating. All focus group participants had taken the four-week local foods diet challenge in the past month, and therefore they could be considered experts in the subject of local eating. Their perceptions of the challenges and benefits of local eating are thus highly relevant, at the least for this geographical region. Major themes and subthemes discussed in the focus groups were evaluated by both the moderator and the co-moderator based on the note and tape-based analysis methods of Krueger (1988).

Results

Nineteen adults qualified to participate in the study. All participants were able to increase their consumption of local foods from approximately 15 percent at the baseline to approximately 82 percent during the four-week local diet challenge (Rose, et al., 2008). The participants reported consuming an average of 82 percent of their kilocalories from locally grown, raised, and processed foods. Overall kilocalorie and protein intake were reduced during the diet. Saturated fat, cholesterol, and fruit and vegetables increased during the diet (Rose, et al., 2008).

Pre-diet Questionnaire Results

Demographic characteristics of the 19 study participants compared to the demographics of the commonwealth of Virginia as a whole are summarized in table 1. As a group, the participants had a higher educational background, income level, and were more likely to be white and female than the general population.

All 19 of the study participants could be characterized as "green consumers." They reported environmentally responsible activities such as recycling,

Table 1. Demographic Characteristics of Study Participants and Virginia as a Whole

	Study Participants (n=19)	**Commonwealth of Virginia** (U.S. Census, 2000)
Age range (years old)	21–69 (mean 41)	mean 37
Gender (% female)	79%	51%
Household income (% greater than $50,000)	50%	59%
Education (% who have obtained a college degree or higher)	79%	40%
Ethnicity (% non-Hispanic white)	100%	67%
Married (%)	68%	50%
Number of people in household (average)	2.2	2.5

avoiding driving, and avoiding the purchase of items that might be harmful to the environment. All participants also reported that they intentionally supported small, locally owned businesses, and 12 of 19 (63%) purchased fairly traded foods such as coffee and chocolate. Eighteen of 19 participants reported shopping for food primarily at supermarkets (95%), 16 of 19 at "health-food" stores (84%), and 16 of 19 at farmers' markets (84%). Shopping for foods at supercenters were not common. Three of 19 participants shopped at Wal-Mart (16%) and no participants shopped at convenience stores (0%). All 19 (100%) of the study participants reported that they had occasionally purchased both organic and locally produced foods over the past year (prior to taking the 100-Mile Diet Challenge). The most commonly reported local foods purchased over the previous year were local produce (95%), eggs (76%), meat (42%), and dairy (42%). Three-quarters, or 16 of 19, of the participants (74%) also had a home garden.

Focus Group Analysis

Of the 19 study participants who successfully completed the 100-Mile Diet Challenge, 16 (84%) also participated in the focus group discussions. Three participants were unavailable to participate in focus group discussions because of scheduling conflicts. What follows are quotes from participants during the focus group discussions, representing the major themes documented.

Reported Benefits of Local Food Diet

A commonly reported benefit from following the local foods diet was the superior quality of the local foods compared with nonlocal foods. When asked to compare the quality of foods for sale at the local farmers' market to similar foods at the supermarket, one respondent reported "on a scale of one to ten, local (equals) ten, grocery store (equals) one." This statement was reinforced by other participants, such as these:

> I noticed that produce lasted longer than what I buy from [undisclosed supermarket]. Like bagged lettuce, it lasted 2 weeks, and I've bought bagged lettuce from [undisclosed supermarket] and it would be going bad in a week. And peaches weren't developing the brown spots as fast, and they tasted better.
>
> * * *
>
> The potatoes were like a whole different vegetable than what you get at the grocery store, they were so delicious.

In addition to the perception of greater taste and quality for the local foods, a number of participants reported that they perceived local foods to be safer than conventional foods because of the greater accountability when purchasing foods from local farmers. While this study took place, there was a mass recall of spinach from California that was contaminated with E. coli bacteria. All participants felt much safer when purchasing foods locally because, according to their responses, when purchasing foods from local farmers you can "feel better about knowing the person who grew the food." One woman who was speaking of local meat reported that local food is "not handled anonymously" and that she is "more trusting of local meat." In addition to the perceived greater accountability when purchasing foods locally, several participants reported that they did not trust the grocery store for safe, quality foods. Another woman reported that "food tastes and looks better when it is local…I am ruined on grocery store chicken, I don't trust it."

Most of the participants reported that they obtained significant personal enjoyment or pleasure from this foray into the local food supply as well as the higher involvement in food preparation.

> One of the things that I found I think was a benefit for me was exploring doing new things with food. I ended up getting cream from the Amish and making my own butter. I knew that I could do it, but I had never done it before. I got some seedless grapes and made some raisins because I wanted some raisins. It sort of pushed me to do things that I had done before but not as much.
>
> * * *

> As much of a hassle as it was to cook, I really enjoyed it. I would just [prepare food in advance] put things in the freezer and things in the refrigerator, and I really enjoyed that time.
>
> * * *
>
> I really loved having the food that I cooked, and having my freezer full. I got back in my garden, and I planted a fall garden, and so that was very satisfying. I found it very satisfying to feel like I was more aligned with my values. And I want to keep doing this.
>
> * * *
>
> I too was motivated to spend more time with the gardening, and I am already looking forward to next year's garden and also trying to do better at really harvesting everything that we have. Like we have some fruit trees that we would eat them in season, but not necessarily preserve the extra, so I got motivated to do that.

The experience of being restricted from eating all nonlocal foods and attempting to only eat local foods was a powerful learning experience. Some participants enjoyed learning about the local food system and what foods were available, while the experience forced others to think about some of the problems with our conventional food system.

> Having access to the resources, I thought that was really beneficial, and learning where I can get certain items, learning what's available at the farmers' market, and what's available where. I am down in [Galax, Virginia] all the time, and had no idea that you could get some cheese down there.
>
> * * *
>
> I feel that I am very aware of the problems associated with the factory farm, and the directions our country is going. I just finished reading *The Omnivore's Dilemma.* This exercise brought it home very close to me about how difficult it is now — because I couldn't find oats anywhere. What's wrong with Virginia that it can't grow oats anymore? It's like we've given that away, we've given it over to someone else. A lot of people grow corn for their cows here, but I don't know that I would want to eat [Monsanto's] corn. It really did bring it home what I knew up here [points to head], and that was very valuable, and we've got to do something about that.

Challenges of and Strategies for Following the 100-Mile Diet Challenge

Despite the positive experiences the participants reported having, many described the limitations and drawback of eating a virtually exclusive diet of locally produced food. The most commonly reported barrier to following the local foods diet was the lack of variety of foods that were available.

> I found myself eating the same stuff over and over, I was wanting some variety.
>
> * * *
>
> I always try to plan a vegetable, and a meat, and a starch with every meal, but there was a lot of repetition, although it was good every time, it was a lot of the same things.
>
> * * *
>
> I ate a lot of the same things over and over, and I think that I ate less, a lot less.
>
> * * *
>
> I ate a lot of peaches!

Another common theme was the inability to give up certain items that were not available locally, such as the lack of healthy oils for cooking. One participant reported that "I was not willing to give up olive oil," and many others agreed that "it was challenging without oil." Coffee, chocolate, and fish were other foods that many participants had difficulty giving up for the month-long challenge. One woman reported that "I quit coffee for the first two weeks," but then she went back to drinking it for the second half of the diet period.

Perceived higher cost when purchasing some local items was also reported by many participants. Meat and dairy products, in particular, were commonly

reported as being more expensive for the study participants.

> I know as far as [for the local] meat and dairy, the prices were double at least, and I know that I ate a lot less of the meat because of the price. It was more of a special thing.
>
> * * *
>
> I definitely spent more [money] on the diet; I think a big part of that was because of eating more local meat. I usually buy local meat, but [then consume] it very, very occasionally.
>
> * * *
>
> Cheese that was local was fairly expensive. Things like that tended to add up, whereas normally I would eat canned beans and tofu for protein.
>
> * * *
>
> I spent more, and it's because I like meat so much. A reporter asked me: did you discover anything unusually good? And I said oh yeah the liver, it was the cheapest meat I could find at the farmers market, and oh my gosh it was good. And I haven't eaten liver in years. I still have a package in the freezer.

However, one male participant reported that he was able to creatively obtain a majority of his local foods from outside the typical local food sources that most participants relied upon.

> One of the neat things was rather than going to the farmers' market, which I wasn't really comfortable with those prices, I reached out to friends of mine who have large farms. And said "how about some work-for-food situations?" And it turns out that they had someone that was sick, and they had fruit going to rot, and I ended up with giant bags of okra or things like that.
>
> * * *
>
> I was blessed because no one in my family butchers or cans so whenever any deer are killed they come to me to do all the work, so the meat was never a problem, it was free.

The combination of the limited availability of foods and higher cost for certain items led many participants to perceive the diet as being nutritionally inadequate and unbalanced. The participants continued to follow the 100-Mile Diet Challenge as best they could, even though some may have felt like it was not a very healthy diet. Two women who did not frequently eat meat felt like their diet quality suffered while on the diet:

> Things like tofu and black beans, which I feel are so healthy in my normal diet [were not available]; I sort of felt like I was getting away from healthy, in a weird kind of sad way.
>
> * * *
>
> I don't think that I got enough protein; I cut so much protein out of my diet, it was rough.

The additional time needed to prepare meals from whole foods purchased at the farmers' market and the lack of fast and convenient foods were reported by many participants. One male reported that "the amount of time I spent cooking just increased exponentially," and one female reported that "if I didn't think well enough in advance then I just didn't eat that much for that day." This suggests that the participants faced significant barriers on the diet, yet continued to comply to the best of their abilities.

Several participants believed that the biggest challenge to following the local food diet for them was avoiding social situations that were viewed as being centered around food.

> The hardest challenge of being on the diet was not being able to eat out, or with friends.…especially the social interaction…a lot of social things happen around food, like getting invited to a friend's for dinner.
>
> * * *
>
> For me [the hardest challenge] was eating out. There were times when I either had to give up my social life, or eat out.
>
> * * *

> I had two or three social situations that I had to be in, where I essentially abandoned it (the diet) because I've always not liked it when I'm on some food kick that separates me from the people that I'm with.

Discussion

Despite the many challenges that they faced while on the local food diet, our study participants generally reported having a positive experience. Most participants described positive feelings resulting from several aspects of their experiences: learning about the local food system; challenging themselves to eat locally; enjoying the freshness, flavor, and quality of local foods; and believing that their food purchases improved the community.

As a group, however, these participants from southwestern Virginia were generally not prepared for how difficult it would be to locate, purchase, and prepare local foods. Participants coped with the limitations in a variety of ways (see figure 1), including some that were not particularly eater-friendly, such as consuming a lot of one thing that is available in order to stay within the guidelines of the study, or driving out of their way to secure a single product. In southwestern Virginia there is a limited variety of foods available from local farmers, especially for consumers who are used to having access to a wide variety of foods year-round.

As a result of these findings we believe that consumers in southwestern Virginia, at least, will need to weigh practical and dietary decisions when planning for the challenges of consuming mainly local food. Eating locally requires an ability to adapt cooking methods and ingredients to what foods are seasonally available. To extend local eating throughout the year, food preservation skills are also requisite. Another important challenge to consuming local food exclusively was that the participants were often forced to avoid social situations centered on food, or else eat alone. Consuming solely local food within a family may also be challenging depending on the amount of support provided by household members. Given the extra effort required, therefore, an exclusive

Figure 1. Summary of key themes that emerged from the focus groups, including benefits, challenges, and coping strategies reported to assist in dealing with the restrictions of the 100-mile diet

Challenges

- Higher cost when purchasing some local foods
- Increased time needed to prepare meals
- Lack of convenient foods
- Lack of variety of foods available
- Difficulties in social situations centered around food and eating out

Personal benefits

- Learning about the local food system
- Positive attributes of local foods: taste, freshness, quality
- Personal enjoyment
- Ability to challenge self

Strategies for dealing with the dietary restrictions

- Growing their own food
- Noncompliance: Continuing to consume favorite nonlocal comfort foods
- Buying off the farm
- Substitution: Since vegetarian sources of protein such as dried beans or tofu were not available, eating a lot of local, inexpensive cuts of meat (e.g., liver)
- Home canning
- Advanced planning
- Eating a lot of one thing they liked (especially fruit)
- Eating fewer away-from-home meals, such as at restaurants
- Using educational materials and sources listings
- Getting fresh food from friends and family

local diet may not be realistic or even appealing to everyone.

Policy and Programming Recommendations

The results of this study can inform public policy and programming for food and agriculture education and community development. With the public interest in mind, local agencies and nonprofit groups have many tools and strategies at their disposal to encourage local food consumption. We see two basic approaches to using this and continuing research on eating locally: first, the demand side, and second, the supply side. Each approach has limitations and unique circumstances that require a special focus. However, this is not an either-or situation: in order for local food consumption to rise, both approaches must go on simultaneously.

Demand-Side Strategies

As previously noted, thanks to existing efforts such as buy-local campaigns accompanied by popular media exposure, increasing demand for locally produced food is hardly a problem. The real issue on the demand side is properly aligning consumers' expectations with the reality of local food availability. Our results suggest that more information will be needed to prepare consumers for the challenges of increasing their local food consumption. Many communities already provide information on where to find seasonal local foods and to otherwise promote local food consumption. But organizations working on local food issues may need to consider a more fine-grained approach that includes a diverse array of education and capacity-building strategies.

For example our research suggests that motivated consumers respond to new learning opportunities and a belief that their choices can make a difference in their community and the world at large. Motivated consumers tend to be more educated and want to be supplied with factual information about the benefits of local food, such as the potential nutritional superiority of fresh local food that when properly handled and quickly consumed are not as likely to lose as many soluble vitamins as long-hauled produce; or that by supporting local farmers they are maintaining open space, wildlife habitat, sequestering carbon, etc.

It makes sense to be forthright with consumers about the challenging lifestyle changes required in making a serious commitment to reorienting their diet toward seasonal local food, and encouraging them to take a gradual approach. It is unreasonable to expect mainstream consumers to make dramatic substitutions, such as only eating apples rather than all fruits, or only celery root and rutabagas in the spring. Focus on baby steps that are graduated, rewarding changes that are based on traditional foodways (a single fresh side dish, a couple of local ingredients in a casserole, less expensive sources of animal protein).

It is also important to use different messages for different demographic groups:

- Seniors: Fresh taste reminds them of their youth, when they frequently ate farm-fresh food.
- Young families: Healthier, less expensive choices for children
- Gourmets: Regional hâute cuisine
- Young professionals: Efficient food preparation (e.g., washing but not peeling carrots)
- Immigrants: Possible local substitutions for traditional foods

Consumers who cannot incorporate local ingredients into their weekly routine may be able to focus on special occasions such as holidays: Thanksgiving (turkey, seasonal vegetables), Rosh Hashanah (apple and challah dipped in honey), Christmas (ham with seasonal side dishes), Eid al-Fitr and Eid al-Adha (goat), Easter (lamb, eggs), Fourth of July (locally made potato salad and coleslaw). Building on the experiences of our participants, here are some additional strategies for helping consumers cope with the limitations of local food consumption.

Education

- Teaching proper food handling fresh food (proper storage containers and temperatures).
- Emphasizing family time during food preparation by engage children, spouses, partners, and others in preparing meals.
- Expanding information in regional food guides to provide examples of balanced meals using a limited range of seasonal products (see Wilkins, 2000).
- Emphasizing the taste difference, teach that food preparation not just for maximum nutrition but also flavor.
- Striving to eliminate the view that local food is an alternative.

Program activities

- Encouraging neighborhood canning parties at private homes to share tools and techniques in a fun atmosphere.
- Following Renewing America's Food Traditions project for "American Heritage Picnics," bring members of the community together to learn about the local food system and food traditions while sharing a meal (Nabhan, 2008).
- Encouraging residents to write recipes for the local newspaper and share how they sourced and incorporated a unique local ingredient into a dish.
- Making one-day or one-week local food diet challenges.
- Running regional marketing campaigns and buy-local programs (with a liberal definition of "local").
- Encouraging local food meal-sharing, self-provisioning, or group-provisioning strategies such as garden sharing and community gardening.
- Celebrating through food festivals, fairs, and the like to introduce local residents to the food system.

Naturally, all of the above strategies will vary in effectiveness, depending on locale demographics and geography.

Additional strategies for increasing the supply of local food include:

- Encouraging farmer cooperatives, beginning farmer programs, farmer recruitment programs, and farm transfer programs.
- Working with distributors, find regional food business that can provide products with ingredients largely sourced from within a state or a multistate region.
- When creating buy-local programs, resisting the temptation to be highly restrictive in the definition of local.
- Organizing buyers such as grocery stores, restaurants, and institutions into a market block that can be serviced efficiently by a farm co-op or association.
- Working with entrepreneurial farmers and food businesses to experiment with prepared foods and the like that make preparing meals with local foods quicker: peeled squashes, hand-trimmed and washed produce. This adds cost, but to the harried household with two working parents, price may not be a barrier.
- Working with farmers to diversify offering and reduce gluts of ordinary products.
- Encouraging cooperation among producers to provide high-volume and diverse foods at prices that larger number of residents can afford.
- Providing training to growers in state-of-the-art post-harvest handling practices that

maximize freshness, shelf life, and attractiveness to consumers.

- Using economic development funding to establish new meat packing houses.

- Encouraging alternative protein sources such as nuts, seeds, beans, other legumes, and processed foods incorporating these products.

The viability of any one of these strategies will depend on geography and how entrepreneurial or open to change farmers and others might be.

Limitations of This Study and Recommendations for Further Research

This study has two critical caveats: First, 19 subjects is a small sample and therefore we cannot generalize about southwestern Virginians as a whole. What we lacked in breadth, however, we gained in depth. The rich detail and insights provided by our participants can help characterize how locavores think about local food and cope with its limitations. Second, the timing of this study presents another important limitation. The data for this study were collected during the peak of the harvest season. It was an optimal but also an unrealistic time to conduct the local food challenge. In general, it is likely that the types of local foods consumed in other regions and during other seasons would be different, and would therefore introduce different challenges to local eating.

With these shortcomings in mind, future research might focus on the feasibility of a local food diet in other regions and areas of the country and at different times of the year. Naturally, seasons and geography will affect an individual's ability to maximize local food consumption, and it would be valuable to examine the array of regional strategies for managing the limitations of a local food diet.

Conclusions

This study highlighted the experiences of a sample of consumers in southwestern Virginia following a diet consisting predominantly of local foods. The participants in this study were highly motivated and very enthusiastic about having a diet made up exclusively of locally sourced food. They learned a lot about the benefits and limitations of local food and appreciated the superior quality of local food over typical supermarket food. However, this study also revealed the severe limitations of trying to maximize the consumption of local food, including convenience, cost, variety, and possibly negative health consequences. This study was not intended to identify ways in which consumers could survive by eating *only* local foods, nor do we conclude that despite the challenges, striving to eat an exclusive local food diet is a wholly beneficial endeavor. To the contrary, we are convinced that a strict local food diet is highly irrational for the average consumer in southwestern Virginia who is not already very familiar with local food sources or self-provisioning. We have identified some limitations of eating local food, along with ways for sensibly increasing local food consumption by mainstream consumers.

This study attests to the fact that there is a steep learning curve in increasing one's consumption of local foods beyond the weekly visit to the farmers' market or CSA pick-up during the growing season. Education, community development, and public policy need to reflect the reality that not all local food is truly accessible. Indeed, basic strategies such as establishing farmers' markets, publishing lists of where to find quality local produce, and promoting the benefits of local food are key starting points, but are not nearly enough to significantly increase local food's share of total food. Local food in southwestern Virginia is presently too limited in volume, variety, and may also be too expensive for many consumers to make a serious commitment to eating local food on a year-round basis.

We agree with Conner and Levine (2006) that a community-based food system can benefit the whole range of participants: food producers who benefit from increased financial security; consumers who benefit from the freshness, taste, and health benefits of eating fresh, whole foods; and ultimately the community that benefits from preserved farmland, a strong local economy, and a healthy population. Realistically, however, only a

very small portion of most Americans' diets are produced within 100 miles of their homes, and this is not likely to change quickly or dramatically even as the local food movement matures. Until local foods are found in volume where mainstream consumers shop, the annual gains will be small. Modest goals, then, perhaps of one or two percentage points per year for a regional population, might be established, along with strategies designed to meet these targets. This would provide quantifiable momentum to the movement. This slow but steady approach allows both farmers and local residents who might support them to make the fundamental shifts necessary in their foodways and their farmways to move toward a more sustainable food future. Even at this pace, working toward a more locally oriented food system will require an unprecedented collaboration between local residents, farmers, policy-makers and policy-implementers, such as agencies, nongovernmental organizations, and health professionals. By appreciating the benefits while also acknowledging the limitations of consuming locally sourced food, diverse groups working together should be able to create more effective, practical initiatives to promote a healthy food system and a healthy population. 

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Laws to require purchase of locally grown food and constitutional limits on state and local government: Suggestions for policymakers and advocates

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Abstract
Locally grown food laws that require, or provide incentives for, purchasing food grown within a defined geographic boundary are vulnerable to challenge under the U.S. Constitution's restrictions on local and state laws that discriminate against goods and commerce from other states, known as the dormant Commerce Clause doctrine (DCCD). Policymakers and advocates for local food should understand the impact of these restrictions and should take advantage of an important exception to these restrictions when drafting policies to encourage purchase of locally grown food. In particular, they should (1) consider using the "market-participant exception" to the DCCD and tailor policies to apply to government's direct food purchasing or agreements with food service contractors; (2) avoid using tax credits and instead use direct cash subsidies when providing incentives for local food purchasing by private (nongovernmental) entities, and (3) make "locally grown" geographic definitions as broad as possible (especially to include out-of-state territory).

Keywords
Locally grown food, dormant Commerce Clause doctrine, economic development, public contracting

Introduction
A movement to eat locally is growing around the country, affecting food purchasing decisions of private and public consumers. Concerns about nutritional quality, food safety, environmental impact, and local economic loss associated with buying food from far-flung places have prompted

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the consideration of "locally grown food laws." Such policies encourage or require the purchase or use of locally grown food by private businesses and/or by governmental agencies.

Supporters argue that locally grown, minimally processed food not only is healthier, but it has a reduced carbon footprint because food need not be transported over great distances. Locally grown food also benefits local producers by keeping money circulating within local economy and providing jobs for community residents. And, locally grown food can minimize the risk of spreading food-borne illness by reducing the cross-contamination risks of aggregation (i.e., when a small amount of tainted food is mixed with a large amount of previously untainted food during processing or distribution), creating more transparency and accountability ("know your farmer, know your food"), and reducing the amount of time food spends in transit or storage. In short, local food is promoted to capture community values like health, fairness, environmental sustainability, and local economic development.

A small but growing number of communities have adopted or proposed policies on local food purchase, including Woodbury County, Iowa; Albany County, New York; Alexandria, Virginia; Cleveland, Ohio; and Iowa (Woodbury County, 2006; Albany County, 2009; Alexandria City Council, 2010; Cleveland City Council, 2010; Local Farmer and Food Security Act, 2010). For large cities especially, the amount of food affected by such a policy may be significant, covering such public facilities as hospitals, schools, children's and senior nutrition programs, recreation and community centers, and jails and juvenile facilities. However, even in communities where the amount of food purchased by a local government is not large, an important role of local purchase policies may be to serve as a "market primer." That is, the public sector provides a steady source of demand for local food that allows local producers to scale up and expand into other markets.

However, when drafting laws that promote locally grown food, policymakers and other advocates need to be aware of the U.S. Constitution's restraints on the ability of state and local governments to regulate interstate commerce, known as the "dormant Commerce Clause doctrine" (DCCD). For example, while it might be tempting to ban the sale of food grown outside a particular in-state geographic area in order to give an advantage to local producers, such laws would violate the DCCD's prohibition on discrimination against goods and commerce from other states. While we are not aware of any legal challenges to date on specific local food laws, we wish to raise awareness of potential legal roadblocks and how to avoid them. We have heard anecdotally that some cities or counties have expressed concerns about considering any local purchase policies due to legal questions about the DCCD and a lack of clarity on how avoid challenges.

Our approach in this paper is threefold. First we will provide a brief explanation of the DCCD. Then we will describe the impact of DCCD restrictions, and exceptions to these restrictions, on efforts to purchase local foods by governments, using several adopted and proposed local-purchase policies as case studies. Finally, we will provide a set of practical recommendations for drafting future policies that conform to DCCD restrictions and make use of its exceptions. Given the strained economic circumstances in which many state and local governments find themselves, communities want to make sure in particular that they are not buying a lawsuit when enacting laws on locally grown food.

The Dormant Commerce Clause Doctrine in a Nutshell

The U.S. Constitution grants Congress the power to regulate interstate commerce (U.S. Constitution art. I, § 8, cl. 3). In addition, for over 150 years the U.S. Supreme Court has held that there are implied limits on state or local governmental power to regulate interstate commerce (Chemerinsky, 2006, p. 424). These limits are known as the "dormant Commerce Clause doctrine" ("DCCD").[1]

[1] The reason for the DCCD is largely historic. Power was

The DCCD looks unkindly on state and local laws that discriminate against out-of-state goods or services—that is, treat out-of-state goods or services unfavorably compared to in-state goods or services—when federal law has not granted permission for such discrimination (Chemerinsky, 2006, p. 419). Were Congress to pass a law that, for example, expressly permitted states to require restaurants to serve a certain percentage of locally grown food, a state law doing precisely that would raise no DCCD concerns because it had been sanctioned by Congress.

Strict Scrutiny for Discriminatory Laws

If a law on discriminatory trade is challenged in court, the court will assess the validity of the law using a test known as "strict scrutiny." In theory, this means that in cases involving discriminatory laws, the government bears the burden of proving (1) a legitimate (i.e., nondiscriminatory or nonprotectionist) goal, and (2) that there are no less-discriminatory alternatives that would achieve that goal (*Granholm v. Heald,* 2005). In reality, the application of strict scrutiny means that discriminatory legislation is presumed unconstitutional and nearly always invalidated (Chemerinsky, 2006, p. 431). For example, under the DCCD, Iowa could not pass a hypothetical law barring the import and sale of corn grown elsewhere, nor could it bar the export of Iowa corn to other states without an exceptionally good reason. Courts do not view the desires to improve the lot of Iowa farmers or keep all the corn grown in Iowa for Iowans as good reasons. Iowa would have to prove, for example, that non-Iowa corn was subject to a fungus that, if imported, could infect its corn (a nonprotectionist goal); and that no means for testing the imported corn for the fungus existed so it had no choice other than to exclude non-Iowa corn altogether (*Maine v. Taylor,* 1986).

Even if a law does not explicitly refer to the geographical origin of goods or actors—that is, if the law is neutral on its face ("facially neutral")—it will be subject to strict scrutiny if a court finds that the law was passed with a discriminatory purpose or that in actual operation it has discriminatory effects (*Bacchus Imports, Ltd. v. Dias,* 1984; *Hunt v. Washington State Apple Advertising Commission,* 1977). For example, if Iowa banned the sale of some product that competes locally with corn (assume potatoes) but without specifying where the potatoes came from, and it could be established that the legislature's purpose in doing so was to help Iowa farmers compete against out-of-state competitors, then a court could apply strict scrutiny. Similarly, strict scrutiny would likely be applied to a facially neutral law banning certain kinds of corn hybrids not used in Iowa but grown elsewhere, assuming such hybrids exist. Because the ban would have the nearly identical effect as an explicit ban on the sale of out-of-state corn, courts would employ the strict scrutiny standard. Courts are not always clear, however, on how one proves discriminatory purpose or which effects will count as discriminatory (Denning, 2009).

Balancing Test for Nondiscriminatory Laws

Courts employ a "balancing test" when a law that affects interstate commerce is facially neutral and its purpose and effects are untainted by protectionism or discrimination (*Pike v. Bruce Church, Inc.,* 1970). In contrast to strict scrutiny (which is likely to result in the invalidation of a challenged law), the balancing test is deferential to the government and often results in a court upholding the challenged law (Chemerinsky, 2006, p. 429).

The balancing test involves weighing burdens against benefits, asking whether the burden on interstate commerce "clearly exceeds" the local benefits claimed for the law. It is important to note that courts are not typically inclined to invalidate state and local laws under the DCCD's balancing test unless challengers demonstrate both (1) massive costs to interstate commerce and (2) benefits that are zero or nearly so (Bittker & Denning, 2010, pp. 162–64).

centralized over interstate commerce in order to prevent interstate trade wars that plagued the new nation prior to the drafting and ratification of the Constitution in 1787. The Supreme Court has since presumed that the Constitution's framers did not intend for states to be able to disrupt what many refer to as our "national common market."

For example, instead of banning imports of out-of-state corn, assume that Iowa passed a law requiring that corn storage facilities submit to inspection by Iowa officials to ensure safety and quality. Facilities owned by out-of-state business interests sue, claiming that compliance with the Iowa law imposes an undue burden on interstate commerce because it is very costly. Note that the law applies to all corn storage facilities, not just those owned by out-of-state firms; it is, therefore, truly even-handed. Under the balancing test, the out-of-state owners would have to prove that the costs to interstate commerce clearly exceeded the local benefits—presumably, the benefits of ensuring that the facilities were safe for the storage of corn that humans and animals would consume. Given the importance of the latter goal, it is unlikely that a court would find the costs of compliance to be so great that it invalidated the nondiscriminatory inspection law.

Avoiding Strict Scrutiny

Because the test used (strict scrutiny or balancing) very nearly determines the outcome of DCCD cases, drafters of state and local "locally grown" laws *that do not fit within an exception to the DCCD* should ensure that such laws are written without reference to the state where goods or services originated. That is, they should strive for facial neutrality. But drafters should also remember that simple facial neutrality is a necessary but not sufficient condition for qualifying under the more lenient balancing test. Care should be taken that the law is not only facially neutral, but is also neutral in its purposes (i.e., its supporters are not suggesting that its real purpose is to favor in-state goods) and in its effects (that in actual operation it won't discriminate against out-of-state goods).

But what if a state or local government wants to impose an explicit preference for food grown within an in-state geographic area? All is not lost for advocates of locally grown food who want public leadership in this arena, because the DCCD has an important exception. If a law falls under this exception, it may survive a court challenge even if it is facially discriminatory.

The Market-Participant Exception to the DCCD: An Opportunity for Laws on Locally Grown Food

For advocates of locally grown food, the market-participant exception to the DCCD is an essential tool. This exception draws an important distinction between state or local governments acting as market regulators (such as when they impose a soda tax[2] or ban the use of trans fats in restaurant food[3]) and acting as market participants (by directly buying or selling goods) (*Hughes v. Alexandria Scrap Co.,* 1976; Chemerinsky, 2006, pp. 451–52; Coenen, 1989; Williams, 2008). When state or local governments act as market participants, they are exempt from the DCCD. In other words, state and local governments can act as any private buyer or seller would in deciding with whom and on what terms they will deal. For example, imagine that the state of Florida passes a law prohibiting out-of-state printing companies from bidding on state printing contracts. Under the DCCD, the law is facially discriminatory and one might expect a court to invalidate it. However, under the market-participant doctrine, the Florida law would stand, because Florida is "participating" in the printing services "market." Just as an individual or private business could make the decision to patronize only local businesses, state and local governments may do the same.

In order to ensure that the market-participant exception does not completely undermine the DCCD's antidiscrimination principle, this exception is limited in two significant ways. First, a state is not a market participant when it employs its authority to tax or exempt entities or transactions from taxation, because taxation is considered to be "a primeval governmental activity" (*New Energy Co. v. Limbach,* 1988). (Note that, somewhat illogically, the same rationale does not apply to cash subsidies. The government can be a market participant while

[2] A majority of states impose sales taxes on certain junk food and soda products. See www.impacteen.org/obesitystatedata.htm.

[3] A number of jurisdictions have banned the use of artificial trans fats in restaurant food. See www.bantransfats.com.

providing cash subsidies, say, to grocers for their purchase of locally grown foods (Coenen, 1998).)

Second, states may not use their market power in one market to regulate the behavior of private individuals outside that market (*South-Central Timber Development, Inc. v. Wunnicke,* 1984). For example, assume Oklahoma owned some grain it wished to sell. Under the market-participant doctrine, the state would be within its rights to require that the purchasers of state-owned grain be state residents. But Oklahoma could not require that any purchaser of the grain have that grain milled in the state before the grain was exported. In placing this requirement, the state would be leveraging its entry into the grain market to regulate (not participate in) another market: the grain milling market.

Both limitations on the market-participant exception are understandable if one keeps in mind the basis for the exception: permitting governments to emulate private actors when choosing whether and on what terms to spend money or sell goods they have produced. Private parties lack the power to tax, and thus can not "participate" in a market by offering favorable tax terms to induce buying or selling. Similarly, private individuals ordinarily lack the power to control what happens to goods after they have been sold. A private grain seller, for example, could not force a buyer to use his brother-in-law's mill before the buyer can take away the grain.

An Analysis of Laws on Locally Grown Food: Examples from the Field

A law on locally grown food should be drafted with the market-participant exception to the DCCD firmly in mind so that if the law were found to be discriminatory, then the enacting jurisdiction would have a defense. Moreover, if drafting is done with an eye to falling within the exception, then those laws could, if desired, be designed specifically to benefit the locally grown food of a particular state.

In this section, we illustrate these points by referencing three concrete proposals:

1. **Woodbury County, Iowa, "Local Food Purchase Policy" (the "Woodbury County Policy"):** This policy mandates that the county "shall purchase, by or through its food service contractor, locally produced organic food" for service in the Woodbury County jail, work release center, and juvenile detention facilities (Woodbury County, 2006).

2. **City of Cleveland, Ohio (the "Cleveland Ordinance"):** This proposed policy grants "Local Food," defined as food grown within a defined "Local Contracting Market," a two percent bid preference when contracting with the city (Cleveland City Council, 2010).

3. **Iowa Local Farmer and Food Security Act (the "LFFSA"):** This proposed law offers a 20 percent tax credit to grocers against the cost of purchasing "Local Farm Products," defined as "raw fruits, vegetables, grain, and meats that may be minimally processed for sale within the Local Territory" (Local Farmer and Food Security Act, 2010). "Local Territory," in turn, is defined as "the area within 150 miles of the reselling grocer that may include areas outside the State of Iowa" (Local Farmer and Food Security Act, 2010).

Is the policy discriminatory?

The first question to ask when assessing how these policies would fare under the DCCD is whether they are discriminatory. If a court found a policy to be discriminatory, the court would very likely invalidate the policy unless the market-participant exception to the DCCD applies.

The Cleveland Ordinance undoubtedly is discriminatory: not only does it define the "Local Food" subject to the bid preference as that produced within a few enumerated Ohio counties, but it also is explicit in its findings about its intent to benefit the local community. Note that the fact that some food grown in Ohio is excluded along with all food grown out-of-state does not save the ordinance from being discriminatory against out-of-state growers (*Dean Milk Co. v. Madison,* 1951).

The analysis is a bit more complex with regard to the Woodbury County Policy and the LFFSA. Since neither explicitly bars out-of-state products from being considered "locally grown" or "locally produced," these policies are not discriminatory on their face. But a court could find them to be either discriminatory in purpose (if it turns out that the hidden intent of the policies is to benefit local interests) or discriminatory in effect (if the benefits conferred are enjoyed mainly by in-state producers).

The Woodbury County Policy, for example, defines locally grown food as that which is "grown and processed within a 100-mile radius of the Woodbury County courthouse" in Sioux City, Iowa. It is plausible that a court could find that the policy is discriminatory in its purpose or effect because it excludes most out-of-state food.[4]

LFFSA's definition of "Local Territory," which explicitly includes areas outside Iowa, has accompanying legislative history indicating that drafters considered and rejected making the law "Iowa Farms Only." This antiprotectionist history might aid in rebutting claims that the law is discriminatory in its purpose. But if it turns out that few or no out-of-state grocers could take advantage of the tax credit, the LFFSA could ultimately be discriminatory in its effects.

If the policy is discriminatory, how would it fare under strict scrutiny?

As we have described, if a court were to find one of the policies to be discriminatory—*and if the policy were not subject to any DCCD exception*—the policy would almost surely be invalidated. Applying strict scrutiny, a court would examine the goal of the law encouraging locally grown food and the means for achieving that goal. If, as with the Cleveland Ordinance, the goal is stated as supporting local agriculture, ensuring a market for locally grown food, or something similar, that goal will most surely be seen as protectionist, virtually ensuring invalidation (again, assuming that a DCCD exception does not apply). Even if a court finds a nonprotectionist goal—say, obesity prevention, or pursuing sustainability or environmentalism—the court is unlikely to be convinced that the exclusion of food grown outside X miles from a geographical reference point is the only means to achieve that goal. However sympathetic courts might be with the goal of the law, they might be skeptical about the means chosen. Because of the feedback loop between goal and means, the availability of less discriminatory means might in turn make courts suspicious about the true goal of the ordinance; that is, is it really about environmentalism, or is it about insulating local farmers from outside competition?

If the policy is not discriminatory, how would the balancing test apply?

It is possible that a court would determine that a policy like the Woodbury County Policy or the LFFSA is not discriminatory. In that case, *unless the policy were subject to a DCCD exception,* the government would have to build a factual record[5] sufficient to satisfy a court under the balancing test's lenient standard, i.e., that the costs to interstate commerce (likely to be not insubstantial because they would potentially be borne by all food producers outside the "locally grown" area) do not clearly exceed whatever putative local benefits are claimed for the ordinance. If such a factual record is not compiled (which could be included in the law's findings or a memo attached to the passage of the law), then a court might question whether there are local benefits or whether the benefits are minimal to nonexistent. The more it appears that the benefits are nonexistent or, worse, are pretextual, the greater the chance a judge would invalidate the ordinance, even under the forgiving balancing test.

[4] The Woodbury County example is further complicated by the fact that Sioux City is located on the border. The 100-mile radius would likely extend into neighboring states such as South Dakota and Nebraska.

[5] Even though under balancing the burden is on the *challenger* to demonstrate that the burdens are clearly excessive in light of the local benefits, defendants would certainly want to be ready with evidence of such benefits, if only to rebut allegations by the challenger that no such benefits exist, or that the claimed benefits are a pretext for discrimination or protectionism.

Can these policies claim the market-participant exception?

To avoid the uncertainty of how a DCCD analysis would play out, a government wishing to enact a locally grown food ordinance ought to craft policies that enable it to claim the market-participant exception to the DCCD.

Both the Cleveland Ordinance and the Woodbury County Policy present classic cases of the government acting as a market participant—and therefore falling outside the purview of the DCCD. Under both policies, the city is merely setting terms for how it will engage in the market for food and food-related services. Like any private market participant, it is entitled to spend its money buying local food. Such choices would be clearly open to private market participants—a restaurant, say, which decides to only serve locally grown, grass-fed beef, or a consumer who decides to buy local.

In neither case does the government exercise power that is unavailable to a normal market participant. Neither jurisdiction is regulating the market by, say, requiring new restaurants to purchase locally grown food as a condition of an operating permit. Cleveland and Woodbury are not attempting to favor locally grown food through the tax code, so no "primeval governmental activity" is involved. Nor are these jurisdictions impermissibly reaching "downstream" by extending their influence past the market in which the government is participating. So Cleveland and Woodbury can rest assured that the DCCD is not a threat to their policies because they are protected by the market-participant exception.

In contrast, the LFFSA is unlikely to qualify for the market-participant exception. Instead of using its position as a market participant to bid up the market for locally grown food, Iowa employs a tax credit equal to 20 percent of the total amount paid for such food. If the LFFSA were deemed to be discriminatory, it would almost surely be struck down under strict scrutiny. (However, as discussed above, there is a decent chance that a court would consider such a law to be nondiscriminatory and would apply the much more lenient balancing test to uphold the law.) Since the use of tax credits to stimulate production is a "primeval governmental activity," the market-participant exception would not apply.

Note that Iowa could simply replace the tax credit with a direct subsidy to grocers for their purchase of locally produced goods. Since the case law establishes that subsidies may be offered on a discriminatory basis, the state could restrict the subsidy to goods purchased from Iowa farms only, as it originally contemplated doing with the LFFSA.

To insulate itself from a DCCD challenge, Iowa should either make the LFFSA truly evenhanded by removing the geographic reference (which likely would defeat the purpose of enacting such a law in the first place) or offer a subsidy instead of a tax credit. A switch to a subsidy could have an additional benefit: The overall costs of the program could be reduced by restricting the subsidy to locally produced food purchased from in-state (Iowa) farms.

Additional Legal Considerations

In addition to the DCCD, policymakers should be aware of two legal frameworks that could, but are unlikely to, affect laws on locally grown food: The Privileges and Immunities Clause of the U.S. Constitution, and international trade law.

The Privileges and Immunities Clause

Article IV, section 2, of the Constitution, the so-called "Privileges and Immunities Clause" (PIC), requires each state to extend to citizens of other states all the "privileges and immunities" the state offers its own citizens (Chemerinsky, 2006, pp. 466–67; Denning, 2003). Article IV, section 2, is a constitutional mandate of equal treatment for out-of-state citizens in matters such as the ability to ply a trade, to own property, and to pay taxes on the same terms as in-state citizens. If a state law discriminates against an out-of-state citizen, claims might be brought under both the DCCD and PIC.

There are at least three important differences between the DCCD and the PIC. First, the PIC

lacks a market-participant exception. (*United Building & Construction Trades Council v. Camden,* 1984). A locally grown food law that explicitly discriminates against out-of-state food, but which is insulated from a DCCD challenge by the market-participant exception, may still be challenged as discriminatory under the PIC. This makes the PIC sound of more concern than it is, for the second important difference between the DCCD and the PIC is that corporations may not invoke the PIC because the PIC does not treat them as citizens (*Paul v. Virginia,* 1869; Denning, 2003). This vastly reduces the incidence of PIC relative to DCCD challenges because a large percentage of DCCD cases are brought by corporations. Third, the PIC case law has evolved to focus mainly on the ability of an out-of-state citizen to come into a state and receive equal treatment with regard to applying for a job, buying property, and paying taxes—what the Court has characterized as "fundamental rights" (*Baldwin v. Montana Fish & Game Commission,* 1978). So it is unclear whether the PIC would even apply to a locally grown food law because the right of an out-of-state grower to sell food to a government agency or instrumentality on equal terms with in-state growers might not be regarded by courts as a "fundamental right."

The PIC looms far less large than the DCCD. Nonetheless, some jurisdictions might want to pursue the lowest-risk strategy when designing a locally grown food law to fall under the market participant exception to the DCCD. This strategy would head off a PIC challenge by including some food produced out of state in the definition of "locally grown."

International Trade Law

The United States is a signatory to the World Trade Organization's General Agreement on Tariffs and Trade (GATT). Article III, Section 4, of GATT prohibits favoring domestic over foreign goods in transactions that involve "like products." Conceivably a locally grown food law could be challenged under GATT for preferring domestic over foreign food. Such a challenge should have little chance of succeeding under the governing standards. Since a product is not considered "like" if a legitimate distinction can be made based on "consumer tastes and habits," there is a strong argument to be made that consumer preferences reveal that locally grown food is not "like" foreign grown food (World Trade Organization, 2001). Even if local and foreign food products were found to be "like" one another, a locally grown food law probably does not violate GATT because it is not favoring domestic over foreign products but instead is favoring local over all other products, domestic and foreign alike. Moreover, Article XX contains exceptions relating to health and environmental protection that could apply.

Conclusion and Recommendations

In sum, laws on locally grown food that require or provide incentives for purchasing food grown within a defined geographic boundary are vulnerable to challenge under the DCCD, especially if the geographic boundary excludes out-of-state food from qualifying as "locally grown," whether explicitly, in purpose, or in effect. However, under the market-participant exception, even a law defining locally grown foods to encompass only that food grown in the enacting state or a subarea of the state will be immune from DCCD scrutiny if the law applies to government purchasing.

Because the Court has held that the use of tax credits is a "primeval governmental activity," laws such as the LFFSA that rely on tax incentives rather than direct subsidies could not use the market-participant exception and would be vulnerable to invalidation under the DCCD. On the other hand, because the LFFSA includes out-of-state produce in the definition of locally grown food, it might be found to be nondiscriminatory, leading a court to apply the more lenient balancing test.

To minimize the chances any law would be invalidated, drafters should[6]:

[6] These recommendations represent a general legal analysis of this issue. Advocates and policymakers should work closely with their local city attorney or county counsel when crafting new policies to ensure these policies are viable in the context of the given jurisdiction.

- Decide whether to craft the law to fit under the market-participant exception to the DCCD.

- If the law is designed to fit under the market-participant exception:

    - It should cover only food bought by the government itself or by firms that contract directly with the government to provide food to schools, jails, and the like.

    - Subsidies to private entities to purchase locally grown foods should come in cash, not tax credits. Under the DCCD, cash subsidies can be restricted to the purchase of in-state food alone because of the DCCD's differential treatment of cash subsidies and tax credits. (Note that this approach has a small risk of triggering a PIC challenge.)

    - It should apply only to food purchasing and should not attempt to favor other in-state industries by imposing "downstream" market requirements. For example, the law should not require that food be subject to some sort of in-state processing in order to be eligible for purchase.

- If the law does not fit under the market-participant exception (because, for instance, there is a good reason to regulate nongovernment-related purchasers or to offer tax credits):

    - Define "locally grown" as broadly as possible, consistent with whatever demonstrable benefits flow from locally grown food. In other words, just how "local" does the food need to be in order to achieve the benefits intended by the law? Foodsheds are as much natural geographies made up of systems and ecosystems as they are political geographies of cities, counties, states and territories. Situating a local food purchase policy within a broad framework of healthy, sustainable purchasing may be helpful when defining a geography that best supports the policy goals.[7]

    - At a minimum, such a law should copy the LFFSA's explicit inclusion of out-of-state food in its definition of locally grown.

Erratum

On 20 October 2010, the following correction was made to this article:

The second sentence on page 141 was updated *from* "So, for example, since the National School Lunch Act allows operators of all child nutrition programs to apply a geographic preference for locally grown food, a state law requiring school districts to favor locally grown food raises no DCCD concerns." *to* "Were Congress to pass a law that, for example, expressly permitted states to require restaurants to serve a certain percentage of locally grown food, a state law doing precisely that would raise no DCCD concerns because it had been sanctioned by Congress."

This correction was made at the authors' request because the initial hypothetical example could cause confusion in light of a USDA memo brought to their attention by a colleague.

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From the boardroom to the farmers' market: Using activity system mapping to explore a farmers' market competitive advantage

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Abstract
There are few recent success stories in North American agriculture that match the growth of direct marketing. The number of farmers' markets in the United States, for example, tripled from 1,755 in 1994 to 5,274 in 2009 (USDA, 2009). Despite this positive trend, recent research suggests that this dramatic increase masks the reality that many farmers' markets fail within their first few years of operation. Markets may fail for many reasons, including ineffective management weakened by a lack of resources. On the other hand, those markets that have been well planned and understand their strategic position and competitive advantage in the local market are more likely to survive these vulnerable formative years. Business strategist Porter (1985) developed the "activity system map" to show how a small set of core competencies (what an enterprise does well), together with specific management and policies that support those competencies, fit together to create a strategic position. An enterprise that has effective strategic position is said to have a competitive advantage in the marketplace.

In this paper we describe how we created an activity system map for a farmers' market in an eastern Tennessee. This included analyzing organizational documents and interviewing market organizers and management, and then creating a simple diagram that depicts the web of relationships between core competencies of the market and the ongoing activities and policies of the farmers' market managers that support these competencies. We believe that farmers' market sponsors and managers often may be too immersed in day-to-day activities to step back and see the relationship of these activities and policy enforcement to the core competencies. Activity system mapping facilitates discussions on market policy, promotion, and competitiveness. We conclude from this exercise that activity system mapping has the potential to be a useful tool for agriculture and food system practitioners in assisting new or existing farmers' markets to increase their viability in the short run and their sustainability over the long term. Recommendations are made for adopting and/or adapting this technique for use with farmers' markets in other communities.

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Keywords
Competitive advantage, activity system map, farmers' markets, strategic planning tools, strategic positioning

Introduction

Increased consumer demand for locally grown foods, heightened concern over the safety of the global food supply, and desire for profit maximization by farmers through direct-to-consumer selling have resulted in a substantial rise in the number of farmers' markets in the United States. From 1994 to 2009, the number of operating farmers' markets increased from 1,755 to 5,274 (USDA, 2009). While impressive, the numbers may mask the reality that many farmers' markets fail in their formative years. In a study of Oregon farmers' markets, Stephenson, Lev, and Brewer (2008) reported that a significant number of markets failed during their first four years of operation. The authors identified five factors associated with these failures: small size, lack of volume or diversity of products, lack of administrative revenue, unpaid or underpaid market manager, and high market manager turnover.

We believe that farmers' markets can at least partially address some of these difficulties early on through strategic positioning that includes a focus on competitive advantage in the local market.

Porter (1985) defined competitive advantage as having the ability to deliver the same benefits as competitors but at a lower cost (cost advantage), or to deliver benefits that exceed those of competing products (differentiation advantage). Therefore, a competitive advantage enables an enterprise to create superior value for its customers and superior profits for itself. Farmers' markets may or may not have a cost advantage, but they certainly can differentiate themselves from other food outlets in a community.

Porter developed a tool that he called the "activity system map" (ASM) for analyzing a company's competitive advantage. In this paper we demonstrate how an activity system map can be used by a farmers' market to better understand its competitive advantage, thereby improving its chances of survival during its challenging formative years.

We begin with a summary of the key literature on farmers' market development and structure, as well as on the process of activity system mapping. We follow this with the application of this technique to a case study farmers' market. We conclude with recommendations for farmers' market managers and advisory boards, as well as for professionals who work with farmers' markets.

Farmers' Market Growth and Development; Strategic Planning

There is a broad literature on the benefits of farmers' markets to vendors and their contributions to communities (see Gillespie, Hilchey, Hinrichs & Feenstra, 2007; Govindasamy, Italia, & Adelaja, 2002; Hinrichs, 2000, p. 301; and Lyson, Gillespie, & Hilchey, 1995). There is considerably less literature on farmers' market growth and development, or on strategic planning for farmers' markets. What is known, however, is instructive. Lloyd, Nelson, and Tilley (1987) found that farmers' markets develop in a sequence of three stages, with the probability that a farmers' market will succeed increasing as it moves to more complex stages of development. They found that the initial years of a farmers' market are generally marked by instability, lack of regular vendors, and reluctance by consumers to shop at the market regularly due to what they perceive as a lack of vendors and supply of products. After the first few years in operation, famers' markets begin the transition to the second stage of development. During this stage, the presence of regular vendors, increased consumer patronage, and addition of larger producers increases the probability that the farmers' market will succeed. Over time, farmers' markets reach the third and final developmental stage, which is marked by substantial supply as well as steady consumer patronage.

As markets grow, they also become more organizationally complicated. In their work studying farmers' markets' in Oregon, Stephenson, et al. (2007) found the use of more complex organizational structures to be positively associated with the size

of the market in operation. They observed that while small markets employ more management *structure* (vendor guidelines, bylaws, volunteer manager, boards of directors), medium-sized and large markets add more management *complexity* in the form of paid market managers and other employees, as well as more sophisticated planning and budgeting management systems (Stephenson, Lev & Brewer, 2007, p. 5).

Sophisticated planning includes establishing a strategic position in the marketplace. German, Toensmeyer, Cain, and Rouse (1994) argued that in order to be viable, farmers' markets need to differentiate and establish a competitive advantage in the intense competition for food dollars facing farmers' markets. Indeed, it could be argued that the basis of sustainable farmers' market development is a circular or self-reinforcing process: a clear understanding of competitive advantage should lead to an increase in sales and revenue to the market, which, in turn, leads to more stable and professional administration of the market, which is then able to strengthen the competitive advantage of the market.

Strategic Positioning, Competitive Advantage, and Activity System Mapping

According to Porter (1985), retail strategy at its very core is about being different. This difference from one's competitors is achieved by selecting a set of core competencies and related management activities and policies that result in delivering a sense of value to the customer. Taken together, these form the organization's strategic position in the marketplace. An enterprise with a unique strategic position is said to have competitive advantage (Porter, 1996).

Porter outlined three distinct types of strategic positions: variety, needs, and access (Porter, 1985). Depending on the products offered, customer demographics, or market location, farmers' markets could easily derive strategic positions for any of the above sources. Variety-based positioning is based on producing a specific set of products or services. Farmers' markets that limit their sales to only locally grown agricultural products are seeking to occupy a variety-based position. These markets are seeking to set themselves apart from competitors, including other farmers' markets, by specializing in offering a specific, in this case locally grown, segment of agricultural products to the exclusion of all other products. Need-based positioning occurs when an organization seeks to fulfill a majority of the needs for a given target group of customers. For farmers' markets, need-based positioning may emerge when specific activities and policies are utilized to meet the needs of consumer groups concerned with the safety of the food supply and the use of pesticides, hormones, and other modification agents during food production. Need-based positioning can also occur when farmers' markets elect to operate in food deserts, thereby meeting a need for fresh food in these areas. Often this form of positioning is utilized in concert with variety-based positioning to give farmers' markets their competitive advantage as a source of locally grown products. Access-based positioning, the last of Porter's types of strategic positioning, is achieved when efforts are focused on reaching a segment of customers that is accessible in defined ways. According to Porter, access-based positioning is often thought of in terms of geography or customer scale. Markets that make a deliberate decision to operate in a certain location (city center, limited-income neighborhood, suburban fringe) for the express desire of reaching a target segment of customers would be employing this form of strategic positioning.

To analyze strategic positions and competitive advantage, Porter developed activity system mapping, which is a diagram that shows the core competencies of a company along with the associated management activities and policies that support them. More than just a laundry list of strategies and activities, an ASM provides a graphic representation of how the activities pursued by an organization fit with and reinforce each other. Porter believes that the extent to which the activities and policies of an organization lock together or "fit" helps determine the competitive advantage of that organization.

Over the years Porter applied ASM to a variety of traditional retailers, including Ikea and Southwest Airlines. In the case of Ikea, Porter showed how the company's core competencies of modular furniture design, limited customer service, self-selection by customers, and low manufacturing cost, together with the related management activities and policies to support these strategies, formed Ikea's very effective competitive advantage. Porter warned that the interlinked nature of the core competencies and activities means that "poor performance in one activity will degrade the performance in another" (Porter, 1996, p. 74). Thus, the degree of fit among the activities determines the sustainability of that advantage over time.

Due in part to its simplicity and effectiveness in organizing complex information, activity system mapping has become a staple strategic planning tool in corporate boardrooms. The question for us was could this be a useful tool for farmers' markets as well?

A case study: Applying activity system mapping to a farmers' market in eastern Tennessee

To assess its applicability as a tool for analyzing the competitive advantage of a farmers' market, the coauthors created an activity system map for a small, suburban farmers' market in eastern Tennessee for which the coauthors are advisors. The one-day, Saturday market is composed of thirty vendors offering a variety of locally produced farm goods ranging from organic vegetables to specialty cheeses and breads. Total annual sales at the market are under $150,000. The week-to-week operations of the market are coordinated by a part-time market manager and an advisory board.

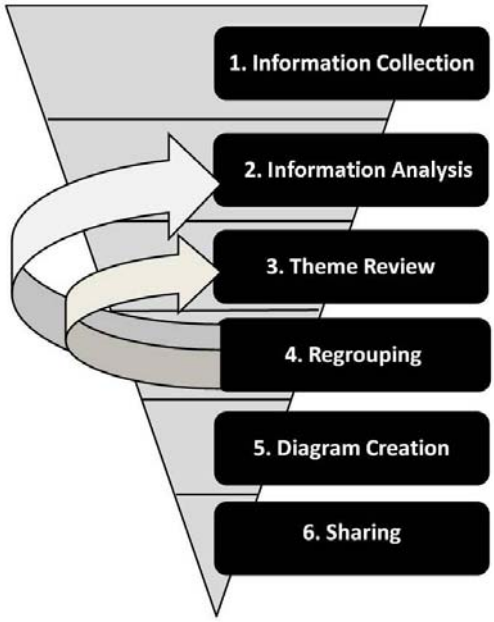
In addition to its convenience and our familiarity, we selected this market for several other reasons: first, the market was beginning its fourth year and therefore was operating in a very critical time period in its development; second, a wide range of documentation was available for analysis; and finally, the market operates in a highly competitive environment. Two adjacent counties host four farmers' markets within a thirty minute drive of the market site, and so competition for farmer-vendors is very keen. In addition, a specialty grocery focused on the sale of locally produced foods opened recently less than a mile from the market and has become a major competitor in the local foods market.

Steps in Creating the Activity System Map

The process we adapted from Porter to create an ASM works much like a funnel, with large amounts of information being analyzed and organized into a final visual representation (see figure 1).

1. **Information Collection.** The first step included gathering documents such as annual and monthly financial statements, bylaws, the mission statement, vendor guidelines, news releases, and available minutes of the farmers' market advisory board meetings since its inception. Board minutes were incomplete, so

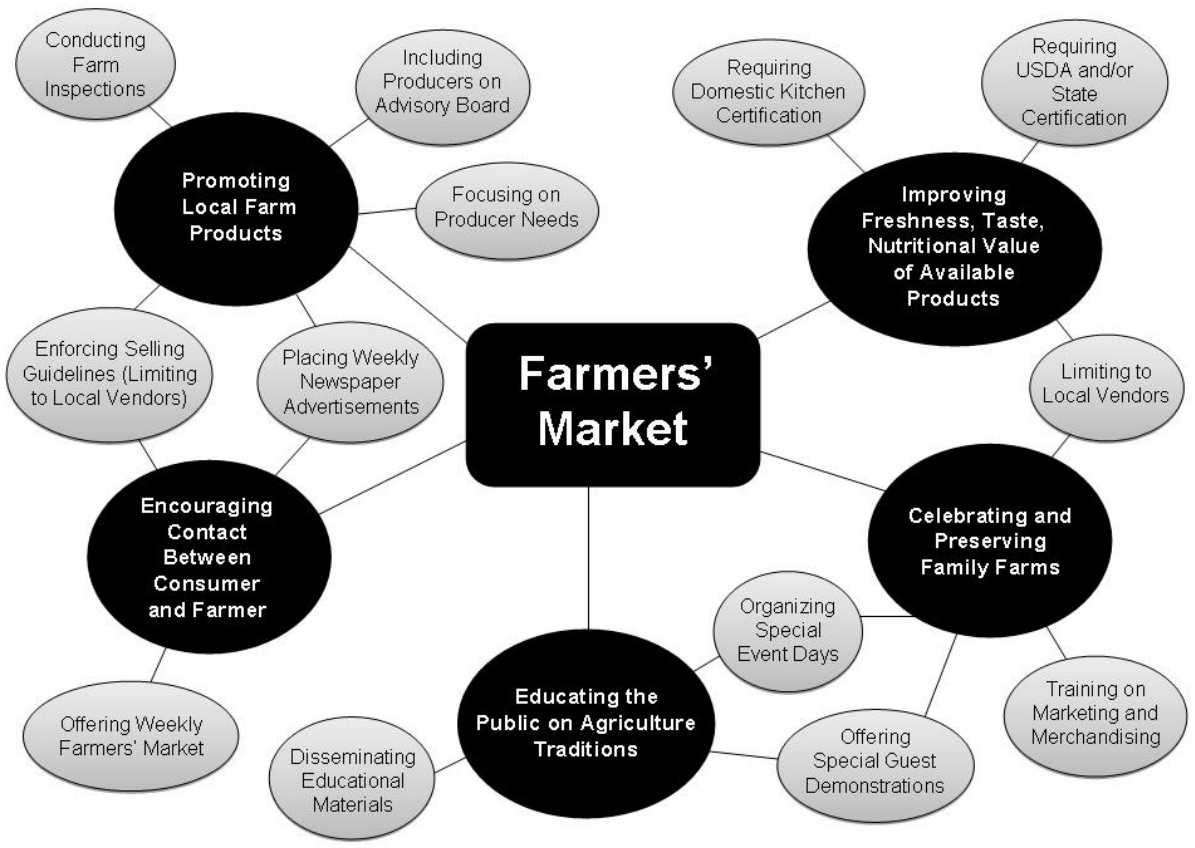
Figure 1. Activity System Map Process
Adapted from maps created by Porter (1996) for Ikea and Southwest Airlines.



interviews with board members were used to help fill in the gaps.

2. **Information Analysis.** The documents were carefully screened to identify specific statements related to the aspirations or objectives of the market, especially how it was differentiating itself from its competition. As a means of ensuring a thorough and unbiased analysis, the coauthors reviewed the documents independently. Recurring statements were combined into broad themes. We also inventoried details related to the stated policies and weekly activities of the market that supported the core competencies. We found that color-coding these statements using highlighters was a convenient way to track their relationship to competencies or supporting activities and policies.
3. **Theme Review.** Again working independently, the authors listed the management activities and policies under each broad theme they appeared to support.
4. **Regrouping.** The authors compared their lists of themes and supporting activities and policies. Although we did our information analysis separately, there was nearly perfect agreement between the coauthors concerning the identification of core competencies, and the links between the activities and policies supporting these competencies. Minor differences were discussed and resolved.
5. **Diagram Creation.** We then constructed this analysis into a diagram: the activity system map. The broad themes that captured the essence of the market's mission, objectives, and what it did

Figure 2. Activity System Map of Selected Eastern Tennessee Farmers' Market



well or wanted to do well were its core competencies. The management activities and policies we identified were management undertakings in support of its core competencies. Using lines and circles, we generated a graphical representation of the information we had gathered and analyzed.

6. **Sharing.** The final step was to share the ASM with the market's administration. The map was used as a means for sparking communication and increasing dialogue concerning the day-to-day operations of the market.

Results

The ASM we produced is depicted in figure 2. Thirteen activities and policies clustered around five core competencies form the activity system map for the eastern Tennessee farmers' market selected for this study.

The core competencies are depicted as dark circles on the activity system map; the gray circles depict the management activities and policies of the market to support the core competencies. The lines between these elements depict the key links.

It should be noted, however, that it is possible to make a case for linking just about every core competency with every supporting management activity or policy. Such is the nature of organizations. And while such a version of the ASM might be more complete, it would not be entirely useful. For obvious practical reasons we only include the key links.

A discussion of the core competencies and their related activities and policies follows.

***Core competency:* Promoting local farm products**

A majority of the activities and policies implemented by the farmers' market center on promoting local farm products. In order to ensure that all products sold at the market are locally grown (produced within a nine-county radius), a member of the farmers' market advisory board conducts *on-farm inspections* of each vendor who applies to sell at the market. These inspections provide assurance to the market board as well as market patrons that products being offered are grown by the vendors and meet the criteria set by the advisory board for being locally grown. Furthermore, these inspections help to discourage vendors who might bring in farm products and resell them at the market.

In addition to on-farm inspections, the farmers' market *selling guidelines* limit items sold at the market to produce, plants, herbs, or value-added products. Though attempts have been made to expand the selling guidelines to include craft items as well as other nonfarm products, the advisory board has consistently held the position to deny membership to food vendors and crafters. A focus on locally grown farm products and value-added products sets the market apart from neighboring farmers' markets and roadside stands that sell nonfarm items. Members of the advisory board as well as the part-time market manager stress the importance of *putting the producer first.* Producers have an active role in the oversight and management of the market. According to the organization's bylaws, at least *half of the advisory board membership must be producers* who are selling at the market. Early board minutes revealed that the original intent was for the board to be vendor-run. This food and agricultural orientation may also make the market competitive in terms of recruiting and retaining farmer-vendors; it can be an issue for farmers' markets to have vendors "poached" by farmers' markets in adjacent areas.

***Core competency:* Encouraging contact**

Policies of this farmers' market are designed to foster interaction between producer and consumer. As stated in the vendor application and *seller guidelines,* selling is limited to a producer or his or her farmworkers. Discussions documented in the minutes of the advisory board reveal that the primary purpose of this guideline is to ensure that individuals selling at the market are knowledgeable about the cultivation practices of the products they are vending. As stated by one of the board members, "letting a representative [sell products at the market] defeats the purpose of getting the

farmer and consumer together" (Advisory Board Meeting Minutes, 11/15/2005).

The advisory board spends considerable time promoting the farmers' market. Minutes of advisory board meetings reveal that the topic of marketing is discussed in some form at each of its meetings. *Weekly advertisements* are placed in the local news media to remind consumers of the date, time, and location of the market. In addition, these advertisements include reference to any special events at the market that weekend.

Core competency: **Educating the public**
The special events suggest that the market is more than a place for the buying and selling of farm goods. The market is also a vehicle for educating the public concerning agricultural issues and traditions. In partnership with the local Cooperative Extension office and other community groups, the market hosts a variety of information booths (where *educational materials are disseminated)* and *special event days* throughout the selling season, with topics including farm sustainability, home food preservation, and cooking demonstrations. The *special events* have the dual purpose of education as well as celebration.

Core competency: **Celebrating and preserving family farms**
Allowing only *local vendors* to sell local products at the market supports local producers by keeping consumer dollars in the area. Market board members are passionate in their promotion of the market as an important and profitable venue for local producers to offer their products.

On days when there are special events such as music and *guest chef demonstrations*, the market takes on a very different feel from that of the traditional grocery-store environment. Creating this festive atmosphere makes the market more of a destination, a place individuals attend not only for the products offered, but also for the opportunity to experience the social nature of connecting with producers and other community members. The resulting festive nature of farmers' markets is one of its strongest attractions. Attendance records along with anecdotal evidence from board members and consumers show that on days the market is hosting a special event, attendance increases.

To assist in farm sustainability, *training* is regularly offered to market vendors concerning effective selling practices for the market. It is the belief of the advisory board that with an increased focus on the best practices in pricing and merchandising, vendors at the market will see an increase in the profits generated. By extension, greater profitability for the farm will lead to preservation of the farm. While no research has been undertaken by the market to demonstrate the effectiveness of these trainings, vendors view the training opportunities as yet another way to increase their sales at the market. It should be noted that trainings also stand to have a positive impact for the consumer, who benefits from neat displays, clearly priced products, and products free of dirt and debris.

Core competency: **Improving freshness, taste, and nutritional value of available products**
By limiting vending to *local producers* and local products, the market's advisory board tries to capitalize on the belief that local products are superior in taste and freshness. The superiority of the products offered is one of the major draws for the market.

In addition to being locally grown, all products sold at this farmers' market must meet the appropriate *certifications* as mandated by the state department of agriculture and the United States Department of Agriculture (USDA). To insure the safety of the food items sold to consumers, vendors must provide the advisory board with a copy of USDA licenses for the retailing of meat products. Likewise, any vendor wishing to sell food products produced at home, such as jams and jellies, must provide evidence of completion and certification in the state's domestic kitchen program. Additionally, state department of agriculture certification is required for individuals vending any products with soil and mulch, such as bedding plants.

Sharing the Map with Stakeholders
The activity system map was presented to the board members of the case study farmers' market.

The ASM confirmed that many decisions made by the board in the market's beginning years proved advantageous in positioning the market as a leading source of locally grown produce and value-added products. However, based on an evaluation of the ASM, board members did see the need to make some minor changes. According to one board member, the activity system map showed an opportunity to build on what was working by offering even more educational activities.

As a result of the presentation of the ASM to the market board, the following are being implemented during the 2010 market season:

- The farmers' market advisory board is increasing the volume of educational materials it disseminates to market patrons. The board has always distributed materials promoting the market's location and hours of operation. New materials focusing on the benefits of eating locally, organic farming, and environmental stewardship will be distributed to market patrons in the future as well.

- Special-event days will now include more in-depth educational programs. The board is planning to bring in guest speakers who will provide educational sessions related to the theme of the day.

- As an expansion of its effort to provide training for producers, the advisory board purchased a DVD on guidelines for selling at a farmers' market. This DVD is available for vendors to check out and view on their own.

Conclusions

When one considers the numerous activities inherent in managing the weekly operations of a farmers' market, as well as the tight budgetary constraints within which many farmers' markets operate, the usefulness of strategic positioning to gain a competitive advantage becomes apparent. By using strategic positioning and activity system mapping, market management and vendors can better understand what aspects of their market set it apart from neighboring markets, food retailers, and other forms of direct-to-consumer options competing for the food dollars and patronage of area consumers. Market management will also be able to determine which activities and policies reinforce the competitive advantage of the market and therefore deserve continued or additional allocation of resources.

In the case of our study market, the ASM suggests that the activities and policies undertaken by the farmers' market advisory board and management have worked to support the competitive advantage of the market based on *variety* and to a lesser degree need-based *positioning*. By limiting sales to a specific set of products (locally grown farm goods), as well as offering events, public education, and support to local farms, the farmers' market has set itself apart from its nearby competition.

The results of our case study demonstrate that activity system mapping can be a useful way for farmers' markets to both explore and clarify their competitive advantage. The process of creating an activity system map transforms paper, data, stories, and numbers into a visual representation of how policies and weekly management activities of a farmers' market combine to either facilitate or perhaps challenge the success of the market.

We believe the results of this research hold value for farmers' market organizational bodies as well as local stakeholders that work to foster farmers' market development and success. Implications for three groups are outlined below.

Implications for Start-up Farmers' Markets

Developing an activity system map can be useful to markets that are in their formative stages. New farmers' markets must have a clear strategy to communicate direction for the market and assist in growing the customer and vendor base. An ASM can be completed after the market's first season of operation. By getting a bird's-eye view of the market, management can critically examine the extent to which activities of the first year supported the original mission of the farmers' market, and which might have squandered precious financial and volunteer resources. New markets might

consider informally reviewing their activity system map on an annual basis through their first five years. In doing so, these markets can be more certain that their activities and policies maintain the competitive advantage of the market.

Implications for Existing Farmers' Markets

More established markets may not feel the need to prepare an ASM, even as a midcourse correction tool, unless there is a major organizational or policy change. The complex and rapidly changing nature of direct-to-consumer marketing of farm products necessitates that farmers' markets continually evaluate previous success and future direction. We believe that an ASM can be a useful tool to help older farmers' markets reassess what sets their market apart from other competitors engaged in food retailing — their competitive advantage. Mapping the policies and activities undertaken by the market allows management to identify areas needing reallocation of resources. A critical examination of regular activities and policies can also foster a renewed sense of purpose and commitment to selling through the market venue within advisory board members and vendors.

Implications for Agricultural and Food System Practitioners

Agriculture and food system practitioners can play a critical role in helping nurture the success of farmers' markets within their communities. The process of developing an activity system map and understanding the underlying principles of competitive advantage takes time, but is not technically difficult. Outside advisors are in a position to provide training and assistance to markets in understanding and completing the process of activity system mapping, and using the results to inform future management decisions.

Recommendations

Based on our experience, we make the following recommendations:

Recordkeeping: The strength of an activity system mapping outcome rests on the quality of organizational information on the farmers' market that is available. During the review of the documents for this study, many missing pieces of information were noted. The nature of the missing information varied. In some cases, minutes from organizational and board meetings were missing. In other cases, only brief reports of meeting business were available. Therefore other documents, including news releases and financial reports, were utilized. Our experience points out the critical importance of keeping good records during all stages of the market's life, from conception and pre-opening to maturity, such that they may be utilized for ASM and perhaps other purposes in the future.

Include Interviews with Stakeholders. In addition to gathering documents, we recommend conducting semistructured interviews or a focus group with vendors, advisory board members, and market management, both past and present. Questions should focus on the history of the market, events that precipitated the advent of the market, the evolution of organizational structure and operational activities, market policies, and financial trends, among others. This will supplement the document analysis by filling in information gaps and providing new information.

Engagement: Engagement of market stakeholders in the process of preparing an ASM is essential. After all, this is a management tool that can help the market stay competitive. The management of a farmers' market will likely want to do this and will be supportive of an outside professional preparing the ASM. A facilitator will need to provide a full explanation of the activity system mapping process, the deliverables, and the benefit of this process for the entire market.

Maximize objectivity. While engagement is critical, we suggest that the information analysis, theme review, and diagram creation be conducted by an indifferent party. In order for the ASM to be most effective, the analysis must be completed by a neutral observer. An individual connected with the market might subconsciously introduce bias, or in the worst case might deliberately alter the content of the ASM in order to sway opinion to a particular point of view or objective.

Feedback: Once the activity system map has been developed, time should be scheduled to share the results of the process. A review of the finished activity system map can serve as a reality check. Does the map agree with the views of management and vendors? Does it need to be fine-tuned? Are any current activities or market policies missing? Looking ahead, what new activities or policies would support existing or new core competencies? Managers and vendors can become so entrenched in the day-to-day operations of the market that they are unable to step back and see the big picture and the progress that has been made. Sharing the activity system map allows both market management and vendors to reflect, take stock, and perhaps take pride in the accomplishments produced by their dedicated efforts.

Conducting competition analysis. A basic level of competition analysis is embedded in the process of preparing an ASM, since mission and core competencies are generally developed in the context of the local market and its competitors. It is possible, however, that the market's founders did not give much thought to the competition and may have implemented the market with the attitude that "if we build it, they will come." In this case, an ASM will not be enough to establish a solid competitive advantage, and the market management might consider preparing a complementary competition analysis as well. The description of such a tool is beyond the scope of this paper, but the technical means of conducting competition analysis is readily available on the Internet.

Further Research

This study represents a first attempt to apply an activity system map in the context of farmers' market strategic planning. The authors plan to follow this market over time to see the long-term impacts of activity system mapping in terms of the market's competitive position and overall viability.

We would also like to see additional activity system maps completed for farmers' markets around the country. This might facilitate the creation of standardized data collection forms, sample farmers' market activity system maps, and ASM training materials.

Finally, we believe there is a need to adapt other business strategic planning and organizational development tools for use by farmers' markets. These might include strategy maps (Kaplan & Norton, 2004), force field analysis (Lewin, 1943), and the Blake-Mouton Managerial Grid (Blake & Mouton, 1964). Applied research collaborations between farmers' markets and local business schools and land grants universities may bear valuable fruit. We strongly encourage agriculture and food system practitioners to help facilitate these relationships.

Disclosure

The farmers' market referenced in the article is one on which both authors serve on the advisory board. Their participation on the board is done in a service capacity with no compensation.

Acknowledgements

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The Town That Food Saved: How One Community Found Vitality in Local Food

Ben Hewitt (2009). Ne w York, NY: Rodale. ISBN 978-1-60529-686-9. 234 pp. $24.95, hardcover.

Review by Valerie Imbruce

Published online August 2010

I picked up the book *The Town That Food Saved: How One Community Found Vitality in Local Food* with a healthy dose of skepticism. The title sounds like a booster for how the local food movement can bring prosperity, not to mention salvation, to a hard-scrabble town. In this case the town in question is Hardwick, a rural, working-class town in northern Vermont where the unemployment rate is high and the median income low.

I recently moved to Vermont to start teaching at Bennington College, a small liberal arts college in the southern part of the state. The gossip about Hardwick was immediate. The buzz carried one message: Hardwick is a local food mecca where local agricultural development really is bringing social cohesion and economic growth to the town. Vermont in general has a very active and thoughtful local agriculture movement made up of farmers, food processors, chefs, wholesale distributors, food service directors, individual consumers, municipal and state government officials, activists, scholars… the list goes on. It would not be surprising that such a model town exists in Vermont. I had yet to see the evidence or understand what is going on in Hardwick. So along with my skepticism I started the task of reviewing this book with great curiosity.

See the publisher's site at www.rodalestore.com.

Ben Hewitt immediately laid out his own skepticism, biases, and curiosity about Hardwick in the opening of the book. He is a Vermonter, a son of homesteaders and hippies from a town very close to Hardwick. He grew up shopping at the long-standing food co-op in Hardwick. He is also a freelance journalist, an admittedly enterprising one who won a contract from *Gourmet* magazine to write "a great American story of redemption and pride" (p. 20) on the "agricultural uprising" (p. 19) in Hardwick. His bias about Hardwick is based on previous media coverage that portrays Hardwick and its agricultural entrepreneurs as darling. His curiosity is that of a Vermonter who loves and respects rural life and is seeking to understand a changing town that he has a personal connection to. He threads his skepticism about local agriculture through the entire book: local foods are expensive; the local foods now produced in the Hardwick area are for urbane clientele and are not

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what the average Hardwick resident purchases ($20 per pound cheese, soy products, organic seed, compost); and the sole focus on the new crop of agricultural enterprises in Hardwick ignores the mainstay of the agricultural economy in the area. Like the state of Vermont, 88 percent of Caledonia County's $31.5 million in agricultural sales are from the dairy industry, and 97 percent of its cropland is in forage and corn for silage (USDA, 2007).

While I am heartened that Hewitt presents contradictions embedded in the local agriculture movement, I am disappointed that he does not adequately interrogate them nor explain how they play out in Hardwick. Instead he tells the Hardwick story through character portraits of its most celebrated agricultural entrepreneurs: Tom Stearns of High Mowing Organic Seeds, Mateo Kehler of Jasper Hill Farm and the Cellars at Jasper Hill, Andrew Meyer of Vermont Soy and the Center for an Agricultural Economy, Tom Gilbert of Highfields Center for Composting, Pete Johnson of Pete's Greens (Vermont's largest CSA farm). As well he includes agriculturalists who have been under the media radar to give voice to Hardwick's "old guard": Forrest Foster and Karen Shaw of Foster Farm, an old dairy that recently went organic; Steve Gorelick and Suzanna Jones who milk goats and sell blueberries to local markets; Ralph and Cindy Pearsons who run a mobile slaughter unit that services many small commercial and home meat producers; Louie Pulver and Annie Gaillard of the 25-year-old organic vegetable farm Surfing Veggie Farm.

I enjoy reading about peoples' lives and find all of these characters interesting. What emerges from the variety of viewpoints presented as most interesting to me about the Hardwick story is that there is no unified vision about the future of agriculture from this group of people, or how Hardwick is currently being saved (aside from one statistic that 100 jobs have been created). It is unfortunate that Hewitt only uses his interviews and his selection of interviewees to establish that there are two guards in Hardwick and that the old guard is distrustful, even disdainful, of the new guard. He builds this conflict around a few comments such as: "It's just guys with capital mediating between us and our needs. It's not an opportunity for us; it's being *imposed* on us. They talk about food security…I hate the term food security. It's a fear term. It gets people all worked up" (p. 91) and "this whole thing is ego-driven" (p. 92).

If Hewitt wanted to start a dialogue, or really get at the interesting perspectives about what is happening in Hardwick, he might have addressed each of his informants as part of the same agricultural economy. Instead he asks the old guard to comment on the new guard and asks the new guard for perspectives on themselves. Their perspectives are generally politely self-deprecating, in the vein of "I don't know what the hype is all about, I am just trying to build a socially responsible business and make a high quality product, I am not claiming to know how to change the world." I don't doubt that there are tensions between agricultural visions and entrepreneurial aspirations in Hardwick — and find this point worth exploring — but Hewitt's approach leads me to question if the dualism between the old and the new really exists or if it is inflamed for the sake of the story.

In the end there is very little evidence that Hardwick is saved by food at all, or if it even needs saving, and from what. Still, Hewitt says that there are lessons for us to take home to our communities from this story: To be creative and each do our part to improve the ways that food is grown, distributed, and ultimately eaten. What I take from this book is that there are many creative farmers and entrepreneurs in the Hardwick area who are adapting to changing social, economic, and environmental trends. But if you are really interested in the particulars of how they are adapting, what they are adapting to, and what their successes and failures have been, then you'll be disappointed in the book. If you are interested in a light-hearted, gossipy read about an inspired group of people, then this book is for you. Some of their passion just might rub off.

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The Call of the Land: An Agrarian Primer for the 21st Century

Steven McFadden (2009). Nashville, IN: Norlights Press. ISBN 978-1-935254-11-9. 128 pp. $12.95, paperback.

Review by Kim L. Niewolny and Nancy K. Franz

Published online August 2010

According to Hinrichs and Lyson (2007), lessons learned from the university and the field are increasingly helping us to participate in a flourishing movement to transform the North American food system. Readers new to this movement sometimes struggle to identify a primer that is accessible and grounded in real-world examples. *The Call of the Land: An Agrarian Primer for the 21st Century* lends itself as a tool for such readers, as it not only illustrates a foundational agrarian ethos historically argued by Wendell Berry and Wes Jackson, but it also outlines a variety of practical models and approaches to inform the practice of local food system development. For most of the book, McFadden draws upon the lived experiences of various practitioners, farmers, and educators to reveal his agrarian philosophy and subsequent suggestions to better "live with the land" (p. 32). The result is a broad overview of issues affecting the trajectory of food and farming development, and an introduction to several approaches we might take to alter this unsustainable path. McFadden's ethical stance for agrarian transformation strongly influences these issues and strategies for change.

See the book's website at www.thecalloftheland.info and the author's blog at http://thecalloftheland.wordpress.com.

The author's agrarian ethos can be traced to his long-time practice as a journalist, group facilitator, and speaker on issues pertaining to earth sustainability and community engagement. It is not surprising, therefore, that this book feels more like a journalistic report than an academic synthesis or practitioner discussion of best practices. The

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Nancy K. Franz *was recently named the associate dean for Extension and Outreach to Families and 4-H Youth Development at Iowa State University College of Human Sciences. Franz also serves as director of ISU Extension to Families, holding a faculty appointment in educational leadership and policy studies. She was previously a professor and extension specialist in program development for agricultural and extension education at Virginia Polytechnic Institute and State University. Her work focuses on conditions for transformative learning in nonformal education contexts, determining and measuring educational program impacts, and best practices in Extension education.*

introductory chapter briefly outlines a number of key issues affecting our modern agricultural system, including climate change, global economic instability, and chemical inputs. This chapter also provides the author's main argument for agricultural reform through more social movement action: "Individuals, families, and communities have an opportunity and a responsibility to step forward and be directly involved in producing an ample supply of clean food, while also helping to heal our distressed environment" (p 2). The first chapter presents insight learned from seventeen food and farming "pioneers" as they attempt to "listen to the land" (p. 9). The author shares their views on the state of farming, health, and agrarian culture in the United States. The second chapter lays out the values, wisdom, and ethic needed for this new agricultural movement to succeed. Chapters three through six illustrate a variety of food system models, strategies, and organizations that function to provide more ecological responsibility, social equity, and community viability. It is in these chapters that McFadden demonstrates the ways in which these initiatives operate at the individual, household, and community level. In the final chapter, McFadden revisits his call for an agrarian response to ensure that our food and farming future is wholesome and sustainable.

A key strength of *The Call of the Land* is that it provides a practical introduction to a variety of philosophical ideas and strategies that should be of interest to a broad spectrum of agriculture and food system development practitioners. For example, the first few chapters might be a supportive resource to use in a group discussion about conservation and farmland protection in a community setting, farming group, or Extension workshop. Chapters three through six might also provide a suitable starting point for practitioners and educators looking for new or forgotten initiatives, development models, and advocacy organizations ranging from such topics as community supported agriculture (CSA) and land trusts, to holistic land management, among others. The agrarian resource appendix will be particularly helpful for anyone seeking names and contact information of organizations across the United States that directly support the development of agricultural and food system sustainability.

We also have several criticisms of the book. Although McFadden is a careful and artistic writer, the journalist style he chooses to use does not easily allow the reader to substantively engage in the material, as it lacks depth, scope, and integration of ideas across chapters. Our primary concern, however, is the book's absence of evidenced-based arguments, which should be a concern for applied researchers, development practitioners, and farmers alike. For example, the author makes several claims about the global impact of industrial agriculture that have numerous implications beyond those covered in the book. While McFadden is to be praised for bringing up the complex issues of climate change and genetic engineering in such a way that aligns with our sensibilities, it is very troubling that the number of facts and quality of arguments framing such immense issues are mediocre at best. The book overall would further benefit from more balanced coverage of the economic and social benefits of food and farming sustainability in the United States, rather than having such a heavily weighted emphasis on environmental consequences and calls for change, especially since the author hints at fostering social justice and cultural reform.

This book is most appropriate for the reader who desires a brief and spirited introduction to the far-reaching social, political, environmental, and economic issues that inform agricultural and food system research and practice. It will be particularly helpful as a secondary resource for a practitioner or university student audience interested in learning the names and locations of the many organizations and community-based initiatives that work to create and strengthen linkages for sustainable food and farming outcomes.

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Closing the Food Gap: Resetting the Table in the Land of Plenty

Mark Winne (2008). Boston: Beacon Press. ISBN 978-080704730-9. 192 pp. $23.95 (hardcover).

Review by Cornelia Butler Flora

Published online August 2010

Mark Winne's book *Closing the Food Gap: Resetting the Table in the Land of Plenty* comes as a welcome contrast to the volumes by intellectuals about their quests to eat locally as part of their mission to expose the industrial food system. While equally personal and situated in the structural, Mark Winne describes and analyzes his efforts to close the food gap through providing healthy food for the urban poor. As personal as the foodquest books by Kingsolver and by Pollan, Winne shares his attempts to reduce poverty by increasing access to healthy food by people who are food-insecure.

He takes us through his first efforts at gardening and organizing community gardens, reminding us that the most important word in that phrase is "community." He illustrates his premise that the best programs link members of the community to each other as well as to programs that increase access to good food. He introduces us to teenagers, parents, farmers, and organizers who are part of the food- and social-justice movement. And he demonstrates the many barriers to healthy eating in the food deserts of inner cities and the various attempts — few of which have been successful — to make healthy food available to the food-insecure people who live there.

See the book's website at www.markwinne.com.

Winne's analysis is intensely place-based. While the major part of the book deals with the development of the Hartford Food System in Connecticut (U.S.), he deepens the analysis through stories of other places facing similar challenges. He credits community activists with successes, but he also exposes failures and analyzes what might be necessary to make their efforts work better.

While optimistic about farmers' markets as a mechanism to democratize healthy food, he takes on the "hunger establishment," such as food banks and not-for-profit antihunger organizations, which defend the particular federal program that funds their efforts by beating back any new program or suggestion of integration or expansion of those served. Food banks, which early on sold themselves as dealing with food waste, have become huge dumps for the food industry, cultivated by the food bank managers. What better tax-deductible use for outdated packages filled with

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high-fructose corn syrup and fats than "giving" them to the poor, who because of low wages, precarious employment, and the shrinking state and federal safety nets, must take what is there and be grateful?

While the local provides the context for effective efforts to close the food gap, Winne brilliantly traces the decline of attempts to reduce poverty in the U.S. as the federal government systematically removed itself from concern about the poor and their access to food. He shows the ease with which political maneuvering transformed concern about the poor's access to food to concern about farmers' access to subsidies. He is, however, laudatory of the Farmers' Market Nutrition Program (FMNP), which began as state-level actions and finally was embraced by the U.S. Department of Agriculture. He argues that innovation must come from the local level, because entrenched vested interests work to maintain their piece of existing poverty management programs.

Increasing income inequality is mirrored in dual food systems. Upper-middle-class consumers have access to fresh and local produce available from clean and well-stocked stores near their homes. The poor must settle for fast food or a very long trek to grocery stores that actually sell fresh produce. He emphasizes the health impacts of that differential diet, as obesity and its concomitant conditions of diabetes and heart disease increase at the same pace as the increase of fast-food outlets in low-income neighborhoods.

The book has no footnotes and no index, which makes it difficult to find the excellent studies to which he refers or to find particular insights that link local action and place. But despite the occasionally impossible metaphor or unsupportable hyperbole, it is written with such wit and passion that even college professors can take joy and hope for a more equitable food system emerging from local action.