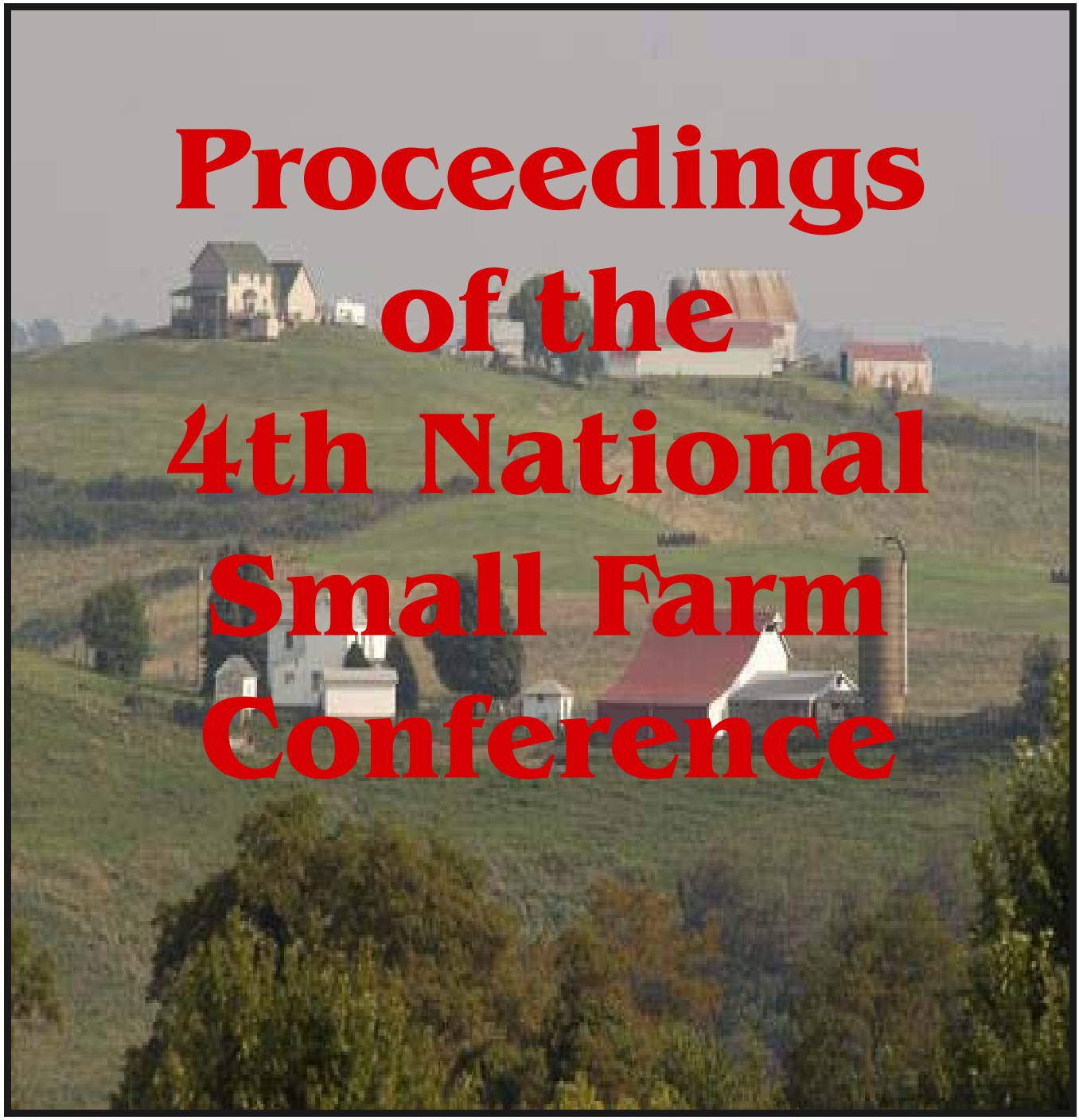
United States
Department of
Agriculture



Proceedings of the 4th National Small Farm Conference

Proceedings of the Fourth National Small Farm Conference

October 16 - 19, 2005
Koury Convention Center
Greensboro, NC

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August, 2006

Preface

"Enhancing Opportunities for Small Farmers and Ranchers," summarizes the main goal of the 4th National Small Farm Conference. To enhance economic opportunities and the quality of life for small farmers and ranchers, our role as professionals is to facilitate programs and services by providing financial and technical assistance and ensure that research is conducted for successful development of alternative enterprises or creating new crops and special niches. Bringing together approximately 750 professionals from throughout the nation encourages dialogue and the exchange of ideas that will trickle down to small farmers and ranchers. This train-the-trainer conference which was held in Greensboro, North Carolina on October 16-19, 2005, provided a venue for national, state, and local small farm program managers from land-grant universities, community-based organizations, and other public and private sector organizations to learn about successful programs they can take home to their constituents for program enrichment. Special attention was paid to programs that had the potential to be replicated elsewhere.

This conference provided a forum for the development of strategies to maximize existing resources for the prosperity of small farmers and ranchers; enhance the ability of producers to maximize marketing opportunities; provide an effective and adequate income safety net for small farmers and ranchers; develop and strengthen programs to meet small farm specific needs; enhance the development and use of risk management tools; provide support for agricultural research, education, and outreach; and promote programs designed to maximize results and emphasize measurable outcomes. The conference focused on the following six tracks: 1) alternative enterprises, (2) marketing strategies, (3) risk management, (4) bridging gaps in programs and services, (5) organic agriculture, and (6) professional/program development.

Posters, exhibits and educational tours were also built into the conference functions to promote partnership and collaboration among conference participants. The educational tours provided included an alternative enterprise tour, a very diversified tour, and two organic tours as well as a winery tour and an urban horticulture tour.

As a train-the-trainer, we hope you will find these proceedings helpful in strengthening your programs and services to enhance the economic opportunity and quality of life for the small farmers and ranchers you serve in your area.

Acknowledgements

On behalf of the U.S. Department of Agriculture and its stakeholders, including land-grant university partners, community-based organizations, foundations, farmers and ranchers, and other public and private sector organizations, we would like to thank Dr. Daniel M. Lyons, Sr. of North Carolina A&T State University and Dr. Ed Jones of North Carolina State University and their administration, faculty and staff for hosting the Fourth National Small Farm Conference in Greensboro, North Carolina.

Great thanks to the following for sponsoring the conference: The Cooperative Extension Program at North Carolina A&T State University, North Carolina State University Cooperative Extension Service, Pioneer Community Investment-Dupont Agriculture & Nutrition, Farm Foundation, U.S. Environmental Protection Agency-Ag. Center, United States Department of Agriculture: Agricultural marketing Service, Agricultural Research Service, Animal and Plant Health Inspection Service, Cooperative State Research, Education & Extension Service-Economic and Community Systems, Sustainable Agriculture Research and Education Program, Farm Service Agency, Foreign Agricultural Service, Forest Service, National Agricultural Statistics Service, Risk Management Agency, Office of the Assistant Secretary for Civil Rights, Office of Outreach, Natural Resources Conservation Service, Rural Development.

Great appreciation if offered to Drs. Colien Hefferan and Frank Boteler for their administrative and program support. We would like to thank Ms. Patricia McAleer for her role in coordinating the topic submissions, and to Ms. Alicia Simon, Dr. Elizabeth Tuckermanty, Ms. Katrina Hanks, Ms. Priscilla Johnson, Mr. John Snyder, Ms. Nan Sargent, Ms. Adelaide Conaway, Ms. Gwynne Manty, and Ms. Stephanie Koziski, all of USDA-CSREES, for their program support.

We wish to acknowledge the assistance of Mr. Alfonzo Drain, Director of USDA Small Farm Coordination and the assistance of USDA Small Farm Coordination, the conference Steering, Program, Exhibit, Poster committees; conference track and Chairs and Co-Chairs; the educational tours committee under Dr. Keith Baldwin's leadership, and the local planning committee for their patience and resilience during conference planning, and to conference sponsors for providing the resources to support this conference. To the oral, exhibit and poster presenters, and to all conference participants, and our stakeholders, we thank you for your contributions in making this conference a success. This conference will not have taken place and be as successful without your contributions and hard work.

Many thanks to Dr. Robin Adams and her Communications staff at North Carolina A&T State University and North Carolina State University for the design, layout and printing of the conference agenda and proceedings. Our thanks go to Dr. Sheilda Sutton, Ms. Tiffany Slade and Ms. Tina Foxx for their hard work and great success with conference logistics.

Many others provided assistance to the overall success of the conference who we are unable to mention, and to all of you, we express our sincere appreciation.

Denis Ebodaghe
National Program Leader for Small Farms
USDA-Cooperative State Research, Education, and Extension Service,
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- Office of the Assistant Secretary for Civil Rights
- Office of Outreach
- Rural Development
- Natural Resources Conservation Service
- Risk Management Agency

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Small Farms are Fundamental to our Culture and Foundation as a Free Society

Franklin E. Boteler
Deputy Administrator, Cooperative State Research,
Education, and Extension Service
U.S. Department of Agriculture
Washington, DC

Welcome to the 4th National Small Farm Conference—Theme "Enhancing Opportunities for Small Farmers and Ranchers." This year 200 speakers and 720 registered attendees are gathered in Koury Convention Center.

I hope you find your accommodations here at Sheraton Hilton, nearby Comfort Inn, or other area facilities to meet you needs in the wonderful state of North Carolina—a land of significant mountain cultures, breathtaking seashores, and a very productive piedmont.

The Cooperative State Research, Education, and Extension Service (CSREES) is pleased to cosponsor this conference with North Carolina A&T State University and North Carolina State University. Many land grant universities, community-based organizations, foundations and other universities work to enhance the capacity of small farmers and ranchers in remaining competitive in today's economy.

I would also like to thank the farmers and ranchers who are taking the time to attend. I believe you will find the conference speakers and presenters to provide a significant amount of information related to improving small farm / ranch operations. Sharing your perspectives will enable us to better meet the needs of small farmers and ranchers as we work in the future.

CSREES, the agency I work with, functions to advance knowledge in agriculture, the environment, human health and wellbeing, and rural communities. The goal of the CSREES program for small farms/ranches is to improve the income levels and the economic viability of small farm and ranch enterprises through a partnership effort with the land grant university system, public and private sectors, by encouraging research, extension, and education programs that meet the specific needs of small farmers and ranchers.

The CSREES and other USDA agencies provides a number of grants, loans, and training programs to support small scale producers —many are reviewed as part of this conference agenda and displays. Many are described in the small farms fact sheet which is available at our CSREES Small Farms Program display.

The conference sessions include many notable speakers. There are national experts on dozens of factors affecting small farm and ranch operations. Tracks in concurrent sessions include alternative enterprises, marketing, risk management, bridging gaps in programs and services, organic agriculture, and professional/ program development.

Small farms and ranchers are fundamental to our culture and foundation as a free society. Indeed, in his Pulitzer Prize-winning book *Guns, Germs and Steel*, Jared Diamond postulates that our ability to cultivate crops, and domesticate livestock, is the fundamental determinant which leads to differences in the economic status of the world's continents and countries.

As a large national scale trend, farms have leveled off in number to 1.9 million and are generally getting larger and smaller in size.

In a 2005 ERS Publication Robert Hoppe and David Banker found that small family farms own three-fifths of the farm and ranchland held by U.S. farms. Ninety two percent (92%) of farms are small farms. Farms with sales less than $10,000 now account for half of all U.S. farms. Most small farmers earn the majority of their income from off farm enterprises.

Small farms and ranches make significant contributions to the production of specific commodities. For example, small farms and ranches account for 74 percent of the value of production for oats, 67 percent for tobacco, 60 percent for hay, 47 percent for wheat, 45 percent for soybeans, 39 percent for corn, and 38 percent for beef cattle. Clearly small farms/ranches are also moving strongly into niche crop production and direct sales.

Perhaps the most significant recent change with small farms/ranches is the increase in the share of farms in the residential/ lifestyle category from 736,300 in 1993 to 943,200 in 2001. People are seeking to live on farms and ranches as a way of life.

Throughout your conference speakers will address these changes in small farms and ranches and provide expert insights in how to improve their profitability while conserving our environment.

I hope you will use this time to get to know one another, share your knowledge with one another, and leave further enabled to support America's small farm and ranch families.

Helping Small Farms Help the Land

Carolyn Adams
Director, East National Technology Support Center
Natural Resources Conservation Service
U.S. Department of Agriculture
Greensboro, NC

Good morning, and thank you, Ray (McKinnie). I am delighted to be with you this morning for the 4th National Small Farm Conference representing Chief Knight. I spent a few minutes with him in DC last week and he asked me to pass on his congratulations for putting on this important conference.

Most of you are familiar with the Natural Resources Conservation Service, but I want to highlight for you this morning some of our programs that are particularly important to small-acreage farmers. And I want to ask for your help in our efforts to reach out to these farmers and involve them in conservation.

This year NRCS is celebrating its 70th anniversary. We've been a partner in conservation since 1935. That's seven decades of helping people help the land.

NRCS has a broad portfolio of conservation programs, and we are committed to making sure that every farmer in America can benefit from the opportunities that are available. We appreciate all that you do as you work with producers on small farms to spread the word about our programs.

Conservation Technical Assistance
The foundation of our conservation effort is Conservation Technical Assistance—available from every NRCS office across the country. Through CTA, we help landowners determine their conservation needs, create a conservation plan and develop priorities for conservation activities. Then we look at the conservation programs we can offer to help farmers meet their goals.

Every farm and every farmer should have a conservation plan. It's a blueprint for profitability and for protecting the environment. These are goals that go hand in hand. As Secretary Johanns told participants at the White House Conference on Cooperative Conservation two months ago, "There is a powerful connection between sound, profitable farming and effective conservation practices."

Last February, NRCS released a comprehensive policy for the Conservation Technical Assistance Program, setting national priorities for the program. Our priorities focus on helping farmers and ranchers better prepare to successfully apply for conservation programs and also get ready to meet environmental regulations.

A conservation plan helps landowners take a comprehensive approach to managing their farming operation and making wise land use decisions. All agricultural land is eligible for conservation planning technical assistance.

EQIP
I want to highlight for you this morning two major NRCS programs—EQIP and CSP. As you may know, the Environmental Quality Incentives Program is our largest voluntary conservation program. In FY 2005, we committed more than $735 million for more than 40,000 new contracts for conservation practices on over 24 million acres.

EQIP offers up to 75 percent cost share to help farmers and ranchers reduce soil erosion, improve water use, and protect grazing land. An important point: limited resource and beginning farmers may be

eligible for cost-shares up to 90 percent. This is part of our increasing effort to make sure that our programs work for both large and small farmers.

Small-Scale/Limited Resource Farmer Initiative

There are some special activities under EQIP that have particularly benefited small-scale farmers. The first is our Small-Scale/Limited Resource Farmer Initiative announced last March. Under this initiative, 11 states set aside up to $6 million of their EQIP funds for small-scale/limited resource farmers focusing on cost-effective and economical conservation practices such as:

Erosion control
Water management
Grazing land planting and management
Livestock watering facilities
Fencing, and
Irrigation systems

The states included Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia and the Caribbean Area. Under the initiative:

At least 10 percent of the overall cropland had to be planted to alternative crops,
Producers could have 100 acres or less of cropland,
Cost-share rates were up to 90 percent for all practices, and
Contracts were limited to $10,000.

Preliminary FY 2005 EQIP contract information shows that for Limited Resource Farmers and Ranchers we approved approximately 62 percent of the applications we received (1,601 out of 2,571) accounting for approximately $29.9 million in contract obligations. This is an increase of over $11 million from last year and approximately 500 more contracts.

For EQIP beginning farmers, NRCS approved 4,135 contracts, an increase of almost 2,000 contracts. The total amount of the beginning farmer contracts was $92.2 million, an increase of $44.9 million.

At the same time our office here in Greensboro and our sister Technology Support Center in Fort Worth, Texas have launched a companion Small Farm Technology Initiative to make sure that our requirements for conservation practices include the breadth of materials and techniques appropriate for small-acreage farms and do not have biases toward highly-capitalized large operations.

Conservation Innovation Grants

One of our goals at NRCS is to identify new conservation technologies and strategies and encourage widespread implementation of beneficial practices. Our Conservation Innovation Grants assist in this effort.

One of our 2004 Conservation Innovation Grants went to The United Christian Community Association and partners in Alabama. Its goal was technology transfer—specifically, developing several demonstration farms to showcase management intensive grazing. T-U-C-C-A aimed to reach 60-80 limited resource farmers, most of whom are farming 50 acres or less to explain the benefits of management intensive grazing and minimize the negative environmental impacts of over-grazing.

In 2005, we announced $19 million in Conservation Innovation Grants for 54 projects. One of our 2005 grants went to Heifer International to encourage limited resource farmers across eight southern states to adopt management intensive grazing. Another project in Arkansas will demonstrate low-cost drip irrigation systems for small producers.

In Pennsylvania, we funded a project to promote conservation tillage practices among Plain Sect—primarily Amish—producers by demonstrating a horse-drawn no-till corn planter. A Georgia project will promote sustainability on small farms through solar power for irrigation. Several projects involve demonstrating ways to improve feed for

dairy cows to minimize excess nutrients that wind up in the watershed.

If you know of new technologies that could better conserve natural resources for the farmers you serve, you may want to consider applying for a Conservation Innovation Grant to develop or demonstrate those technologies. The competition is usually announced early in the year with awards in late summer.

2007 Farm Bill

In closing, I have to just briefly mention the 2007 farm bill. As you know, discussions are already in full swing. Secretary Johanns and other top USDA staff have been reaching out to our customers to learn what they want to see in the next farm bill.

USDA has held 33 listening sessions already; 8 more have been scheduled—including two forums this week in Florida and Georgia.

As we look ahead to 2007, we already know we need to have conservation programs that are holistic, better integrated and more transparent. We know we need programs that work for all producers, including small farmers.

Introduction to General Session II: Farm Policy Discussion

Alfonzo Drain
Director, USDA Small Farms Coordination
Office of the Under Secretary
Research, Education & Economics (REE)
U.S. Department of Agriculture
Washington, DC

Thank you Ray for that kind introduction.

I also wish to say good morning to all of you and welcome you to the 4th National Small Farm Conference. I especially want to thank Dr. Denis Ebodaghe and Dr. Dan Lyons and their steering and planning committees for all their dedication and hard work in planning this Conference.

This Conference is another demonstration of USDA and its partners' continuing efforts to help small and limited resource farmers and ranchers meet the numerous challenges they face in 21st century production agriculture. I am indeed honored to be the moderator of this panel.

Before we start with the panel, let me give you some brief background information on the Small Farms program at USDA. The focus on small farms at USDA evolved from a February 1997 Civil Rights Action Team report which recommended that USDA change its management and program practices to address the needs of small farms and ranches. In September of 1999, USDA issued a Departmental Regulation which established a Small Farms Policy for the Department. This policy included strategies, systems, and a Departmental framework for achieving and maintaining the viability of small farms, ranches and woodlots in the United States.

During the past few years, enhancing the viability and economic livelihood of America's small farmers and ranchers has been on USDA's list of top priorities. The focus has been on the future of small farms and ranches which is now recognized as an issue of national importance. It is now time for USDA and America to look at small farms, not as separate and distinct entities, but look at them for their role within the broad social, economic and environmental context. The evolving structure of agriculture needs both large and small farms. It is imperative that the small family farm survive in 21st century agriculture.

Small farms coordinators provide a focal point to coordinate small farm policy and programs within USDA. They are responsible for planning, coordinating, and the implementation of small farms policies and programs.

The focus on small farms at USDA evolved from a February 1997 Civil Rights Action Team (CRAT) report which recommended that USDA change its management and program practices to address long term bias and discrimination against small farmers and ranchers.

In September 1999, USDA issued Departmental Regulation (9700-1) which established a Small Farms Policy for the Department. This policy included strategies, systems, and a Departmental framework for achieving and maintaining the viability of small farms, ranches, and woodlots in the United States. This regulation established an Office of Small Farms Coordination to provide a focal point to coordinate USDA small farms policy and programs. The regulation also established a Departmental-wide group of small farms coordinators which represented each mission area, individual agencies, the Offices of Outreach, Civil Rights, Budget and Program Analysis, Communications, Chief Economist, and the General Council.

Small farms coordinators provide a focal point to coordinate small farms policy and programs within USDA. They are responsible for planning, recommending, coordinating, and implementing small farms policies and programs. This includes promoting awareness, education, and/or participation in USDA's programs serving small farms and ranches.

Definitions and Base Line Information
Since the Conference and workshop agenda uses the term small farm and limited resource farmers and ranchers, I thought I should give you USDA's official definition of a farm/ranch, so that we all will be on the same page, as we spend the next few days talking about survival strategies.

The USDA's National Agricultural Statistics Service (NASS) defines a farm as any establishment from which $1,000 or more agriculture products were sold, or would normally be sold during the year.

The USDA's National Commission on Small Farms in its report A Time to Act, and the USDA's Economic Research Service (ERS), in its definitions of farm topology groups, define small farms as farms with less than $250,000 in gross receipts annually. Institutional farms, experimental and research farms, and Indian Reservations are included in this definition.

According to the latest NASS data, the number of farms and ranches in the U.S. in the year 2004 totaled 2.11 million, 0.6 percent fewer than in 2003. Small farms and ranches represented 92.2 percent of the total number of farms in the US. For 2004, small farms and ranches represented 92.5 percent. The total number of farms for previous years are:

Year	Number of Farms
2004	2,110.000
2003	2,126,860
2002	2,135,360
2001	2,148,630
2000	2,166,780
1999	2,187,280

The panel topic is Farm Policy
Although, there are many policies vital to agriculture, rural American and global trade, this topic will focus primarily on the components of Farm Bill policy that significantly impacts production agriculture. This includes the 2002 Farm Bill and current projections of the contents of the 2007 Farm Bill. Emphasis will be placed on the direction signaled by the 2002 Farm Bill and the possible path the next Farm Bill may channel.

The topic will be presented by three panelists. The first panelist will cover the Census of Agriculture and plans to improve coverage of small and minority farm and ranch operators. Census of Agriculture information provides the basis or base- line for Farm Policy. The second panelist will comment on Farm Policy from a USDA perspective. The third panelist will comment on Farm Policy from a Community- Based Organization perspective.

Comments and discussion from this session will help prepare constituents to be more responsive to Secretary Mike Johanns various Farm Bill Forums which will be held across the nation.

Making Minority and Small Farmers Count; Finding them is the First Step to Serving Them

Joseph T. Reilly
Associate Administrator
USDA-National Agricultural Statistics Service
Washington, DC

NASS Mission: To provide timely, accurate, and useful statistics in service to U.S. agriculture

What Does NASS Do?
- Administer USDA's Statistical Estimating Program and the 5-year Census of Agriculture
- Coordinate Federal/State agricultural statistics needs
- Conduct statistical research for other Federal/State or private organizations and other countries
- Statistical research

What Does NASS Do? Supply Statistics
- We supply the statistics necessary to manage USDA programs
- Our statistics help to improve efficiency of these programs
- Facilitate in the development of new programs

What Doesn't NASS Do?
- Set policy
- Regulate activities
- Permit influence
- Disclose individual reports
- Favor any group above others

Census of Agriculture: Farm Definition
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.

Census of Agriculture: Methodology Changes
- Inclusion of a "more than one race" category for operators who identify themselves as being of multiple races
- Incompleteness in the census mail list was measured by matching list names against qualifying operations found through canvassing sample land areas throughout the Nation

Undercount for Minority Principal Operators
Principal Operator Characteristics by Farm

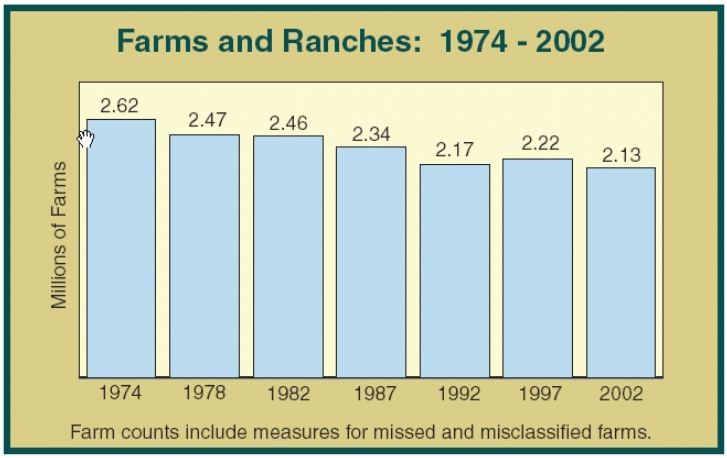
	2002*	2002	% Change	% of Total
Spanish, Hispanic, or Latino	50,592	28,767	+ 43	2.4
Women……	237,819	180,481	+ 24	11.1
Asian……	6,285	5,116	+ 19	0.3
American Indian……	15,494	12,366	+ 20	0.7
Black or African American…	29,090	16,328	+ 44	1.4

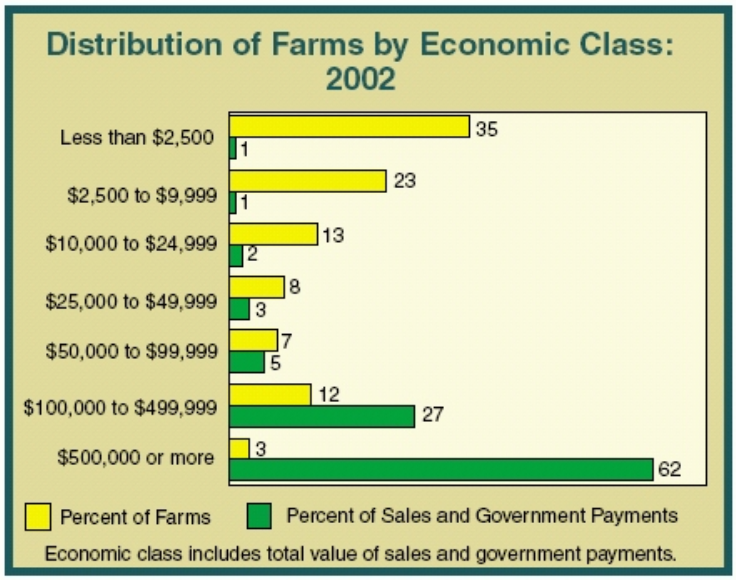
* After adjusting for undercoverage

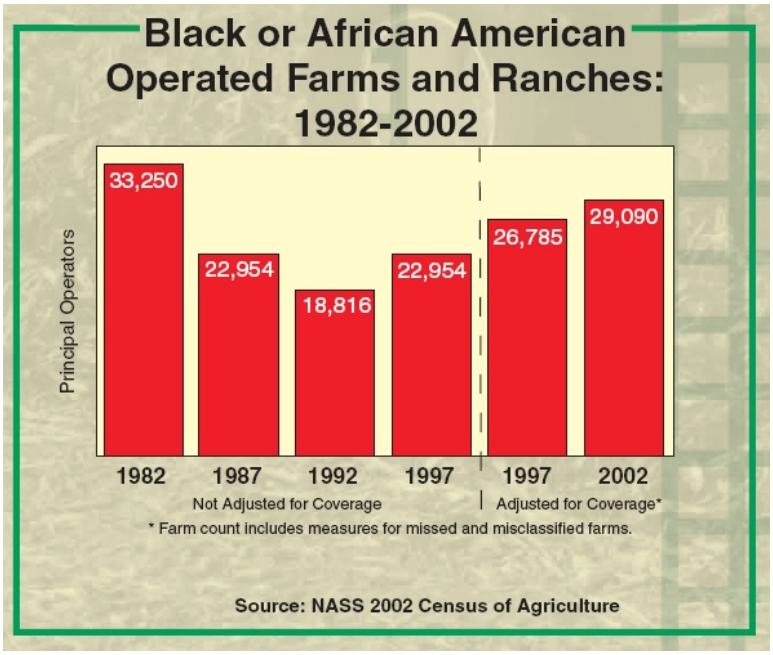
What Can You Do To Help?

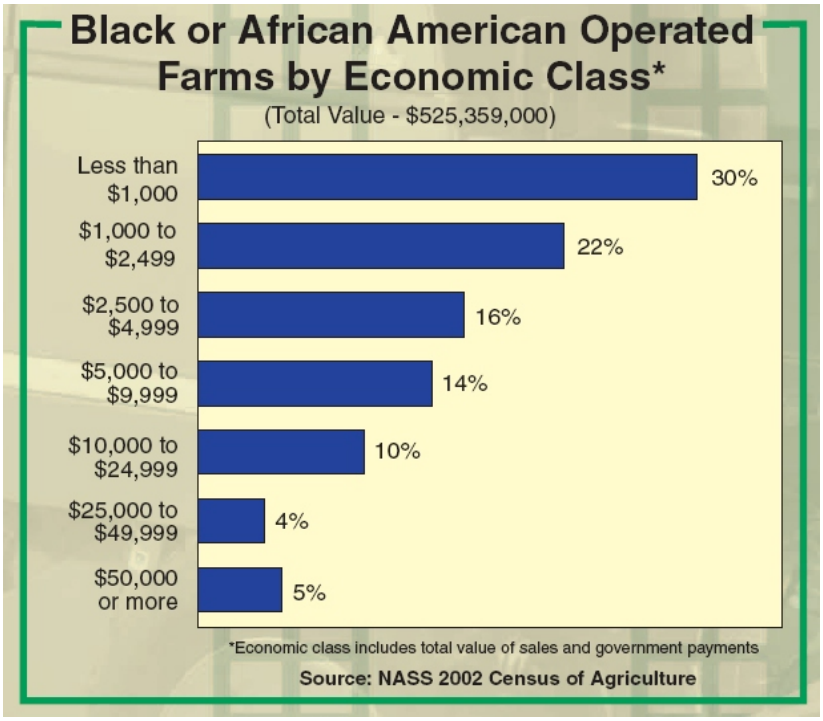
- Spread the word of the importance of information on limited resource producers in agriculture
- Identify limited resource producers to be included in our list building efforts
- Work towards increasing the response rates of limited resource producers

NASS Website Contact Information:
Website: http://www.usda.gov/nass
Census Data:
http://www.nass.usda.gov/census






Black or African American Operated Farms and Ranches: 1982-2002
Principal Operators
33,250
22,954
18,816
22,954
26,785
29,090
1982
1987
1992
1997
1997
2002
Not Adjusted for Coverage
Adjusted for Coverage*
* Farm count includes measures for missed and misclassified farms.
Source: NASS 2002 Census of Agriculture


Black or African American Operated Farms by Economic Class*
(Total Value - $525,359,000)
Less than $1,000
30%
$1,000 to $2,499
22%
$2,500 to $4,999
16%
$5,000 to $9,999
14%
$10,000 to $24,999
10%
$25,000 to $49,999
4%
$50,000 or more
5%
*Economic class includes total value of sales and government payments
Source: NASS 2002 Census of Agriculture

Tenure of Principal Operators

Tenants	BLACK or AFRICAN AMERICAN OPERATORS			ALL OPERATORS		
	Full	Part Owners	Tenants Owners	Full	Part Owners	Owners
Number of Farms	19,194	7,294	2,602	1,428,136	551,004	149,842
Percent of Farms	66%	25%	9%	67%	26%	7%
Number of Acres	1,650,583	1,410,676	294,532	356,767,305	495,012,197	86,499,554
Percent of Acres	49%	42%	9%	38%	53%	9%

Source: NASS 2002 Census of Agriculture

American Indian or Alaska Native Operated Farms: 2002

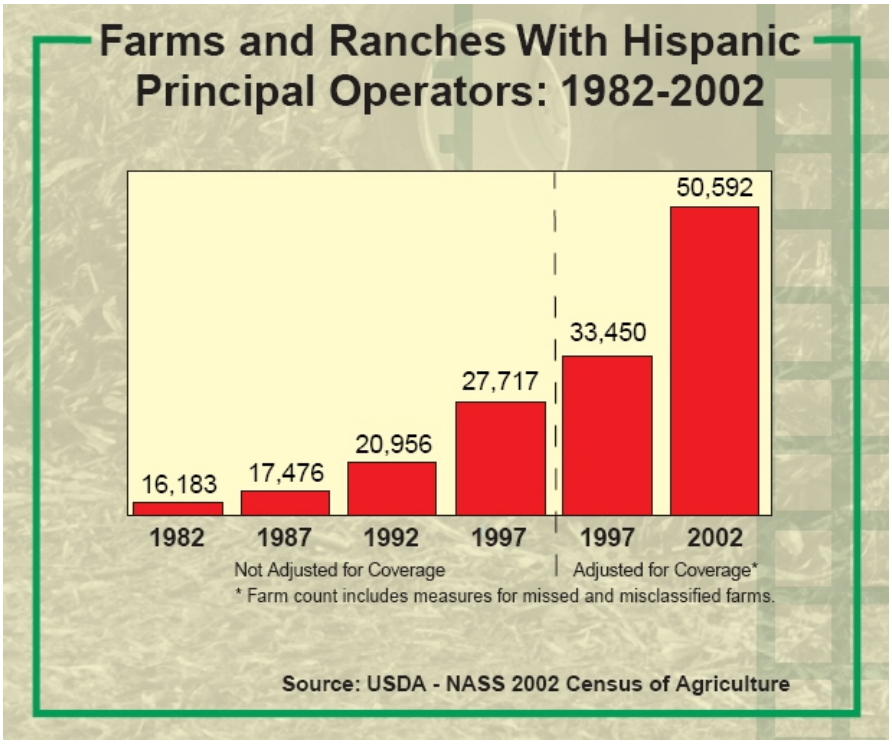
	American Indian or Alaska Native Operated Farms	All Farms	Percent of All Farms
Farms	29,189	2,128,982	1.4%
Land in farms	56,833,717	938,279,056	6.1%

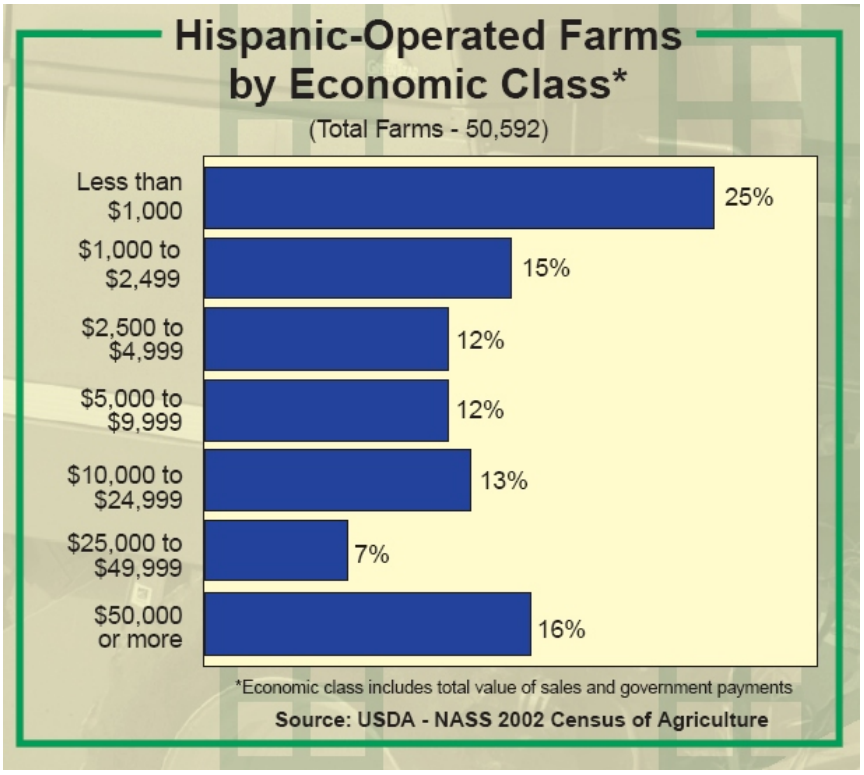
Source: USDA - NASS 2002 Census of Agriculture

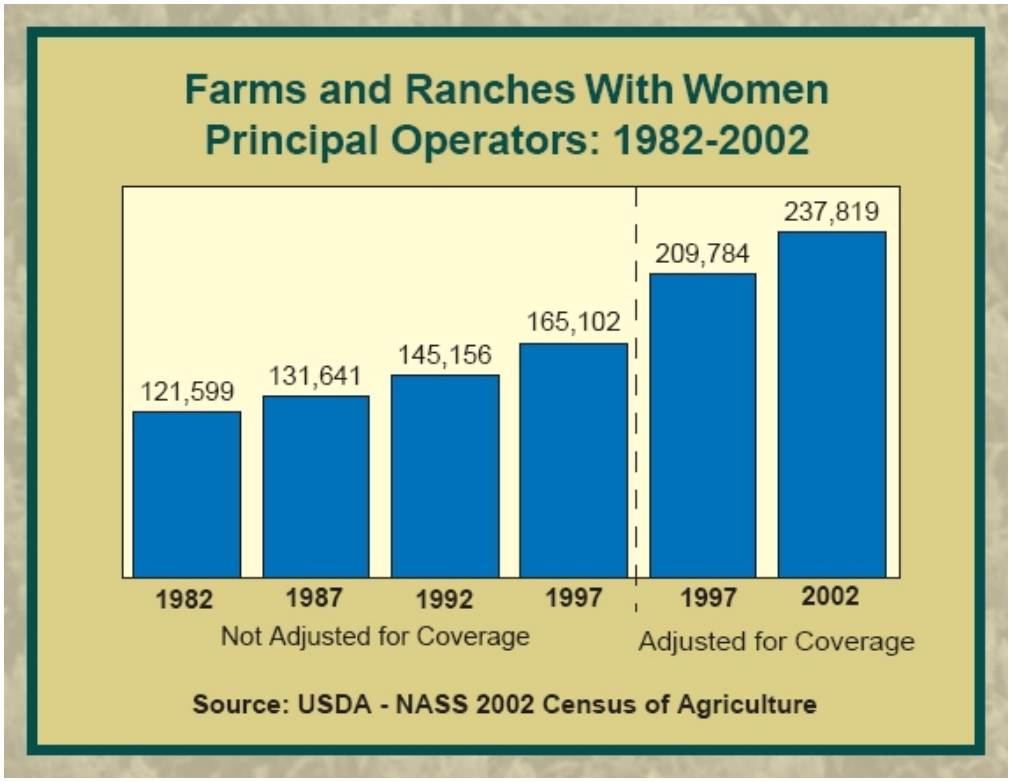
Computer Usage: 2002

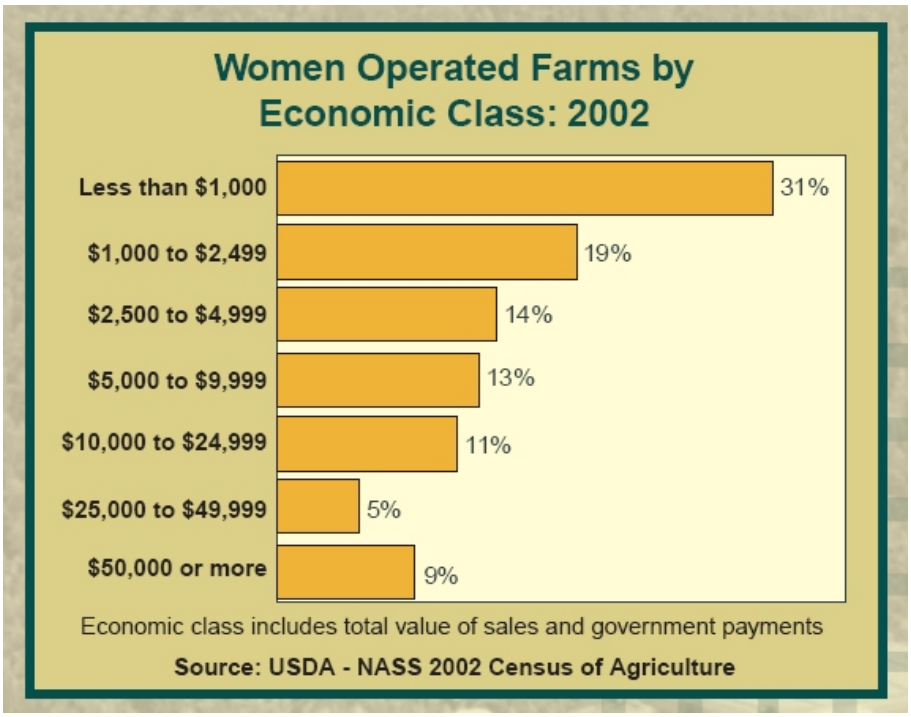
	American Indian or Alaska Native Operated Farm		All Farms	
Computer Usage for Farm Business	13,194	45%	827,215	39%
Internet Access	16,124	55%	1,056,875	50%

Source: USDA - NASS 2002 Census of Agriculture


Farms and Ranches With Hispanic Principal Operators: 1982-2002
16,183
17,476
20,956
27,717
33,450
50,592
1982
1987
1992
1997
1997
2002
Not Adjusted for Coverage
Adjusted for Coverage*
* Farm count includes measures for missed and misclassified farms.
Source: USDA - NASS 2002 Census of Agriculture


Hispanic-Operated Farms by Economic Class*
(Total Farms - 50,592)
Less than $1,000
25%
$1,000 to $2,499
15%
$2,500 to $4,999
12%
$5,000 to $9,999
12%
$10,000 to $24,999
13%
$25,000 to $49,999
7%
$50,000 or more
16%
*Economic class includes total value of sales and government payments
Source: USDA - NASS 2002 Census of Agriculture


Farms and Ranches With Women Principal Operators: 1982-2002
121,599
131,641
145,156
165,102
209,784
237,819
1982
1987
1992
1997
1997
2002
Not Adjusted for Coverage
Adjusted for Coverage
Source: USDA - NASS 2002 Census of Agriculture


Women Operated Farms by Economic Class: 2002
Less than $1,000
31%
$1,000 to $2,499
19%
$2,500 to $4,999
14%
$5,000 to $9,999
13%
$10,000 to $24,999
11%
$25,000 to $49,999
5%
$50,000 or more
9%
Economic class includes total value of sales and government payments
Source: USDA - NASS 2002 Census of Agriculture

Government Payments and Small Farms: Who Benefits and How Much?

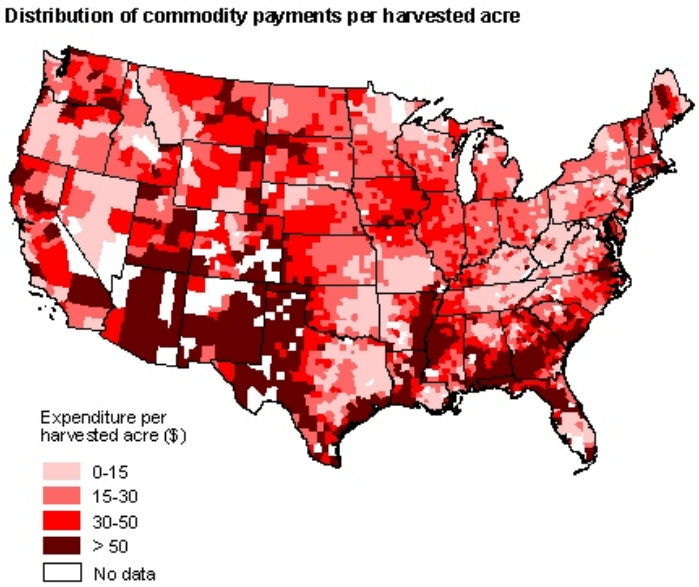
Dr. Neilson Conklin
Director, Markets and Trade Economics Division.
USDA – Economic Research Service
Washington, DC

Overview

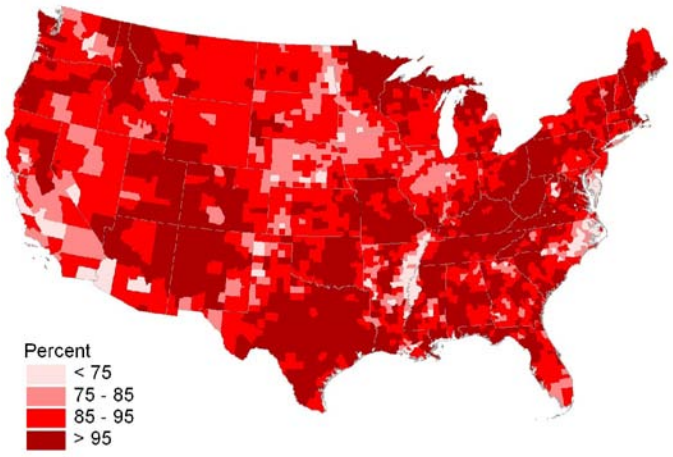
- About 40 percent of all farms received government payments in 2004
- Payments averaged $12,000 for those operations receiving payments
- The largest 10 percent of farms in terms of gross receipts received 56 percent of all government payments

Key Programs

- Income support commodity programs
  - Marketing loans
  - Direct payments
  - Counter-cyclical payments
  - MILC payment
- Price support commodity programs
  - Sugar
  - Dairy
- Conservation programs
  - Programs on land used for agricultural production
  - Land retirement
    - Conservation Reserve Program
- Crop insurance
- Disaster
- Credit
- Indirect support
  - Ethanol
  - Trade
- Extension/research



Share of county's farms with less than $250,000 of gross receipts



ERS Farm Typology

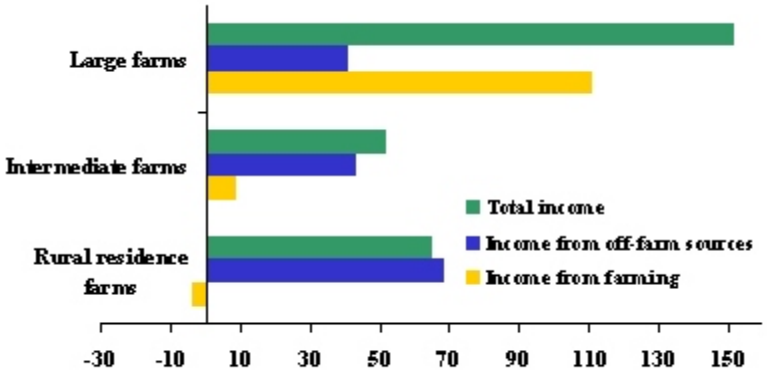
Small Farms

1. Limited resource Operator household income under the poverty level in both 2003 and 2004 or is less than half the county median income in both years and gross sales under $100,000
2. Retirement Operator's principal occupation is retired
3. Residential/Lifestyle Operator's principal occupation is 'other,'
4. Farming occupation/Lower sales Operator's principal occupation is farming *and f*arm sales are under $100,000
5. Farming occupation/Higher sales Operator's principal occupation is farming *and* farm sales are $100,000 to $249,999

Large Farms

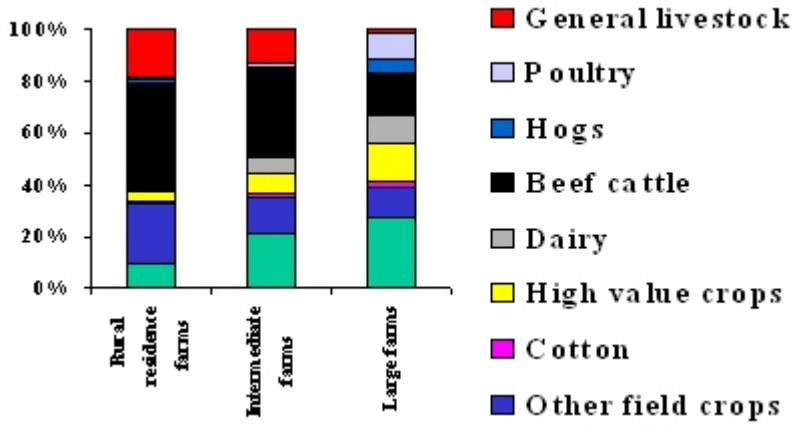
6. Large family Farm sales are $250,000 to $499,999.
7. Very large family Farm sales are $500,000 or more.
8. Non-family Farms organized as non-family corporation i.e., neither farming occupation nor retired.
   or organized as a cooperative,
   or farm is run by a hired manager.

Rural residence and intermediate farms get most of their household income from off-farm sources



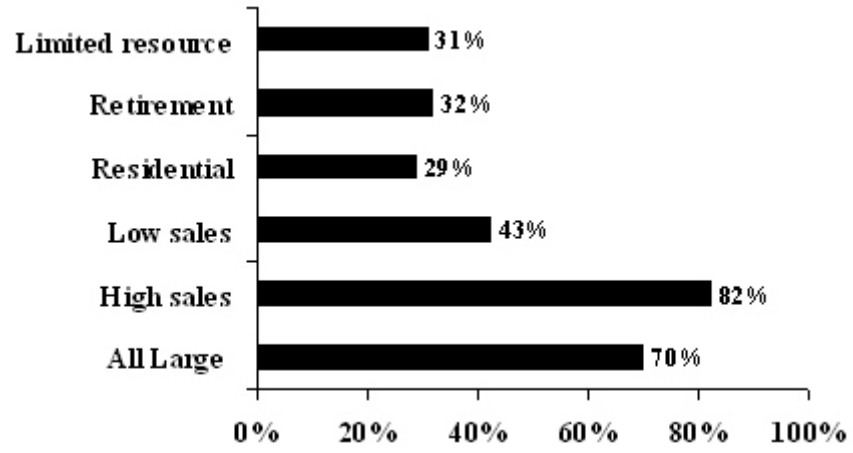
Source: 2003 USDA *Agricultural Resource Management Study.*
Economic Research Service, USDA.

Small farms are more likely to produce livestock rather than farm program crops



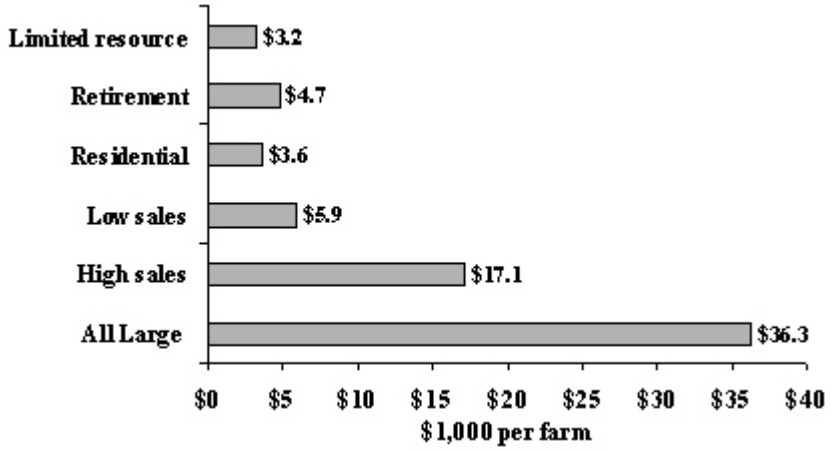
Source: 2004 USDA *Agricultural Resource Management Survey.*
Economic Research Service, USDA.

Share of government payments varies by farm type



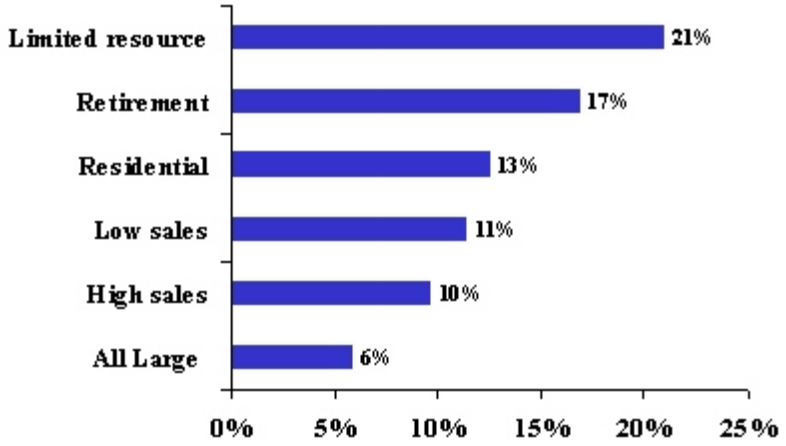
Source: 2004 USDA *Agricultural Resource Management Survey.*
Economic Research Service, USDA

Average payments per farm are lower for small farms . . . .



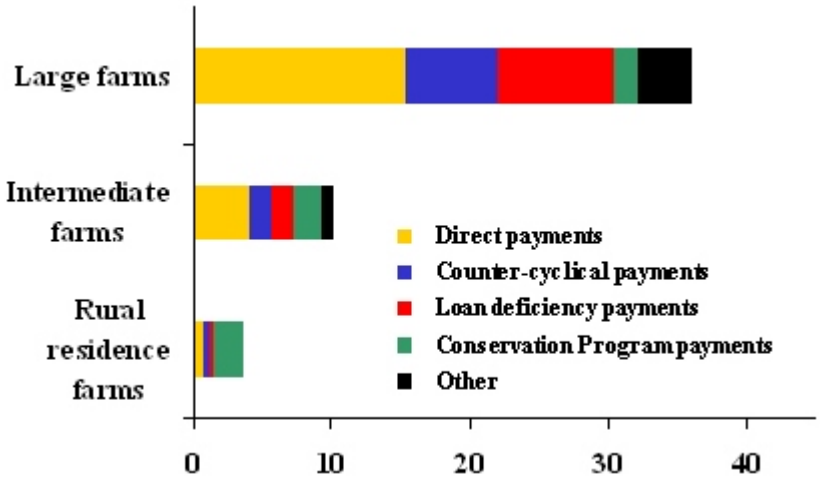
Source: 2004 USDA *Agricultural Resource Management Survey.*
Economic Research Service, USDA.

. . . . But government payments make up a larger share of gross receipts for small farms



Source: 2004 USDA *Agricultural Resource Management Survey.*
Economic Research Service, USDA

Average mix of government payments per farm varies by farm type



Source: 2004 USDA *Agricultural Resource Management Survey.*
Economic Research Service, USDA.

Concluding Comments

- Larger farms tend to receive the largest benefits since most support is paid on the land use or the amount of production
  - The largest 10 percent of farms in terms of gross receipts received 56 percent of all government payments in 2004.
- Government payments are important to small farms
  - Payments accounted for over 7 percent of gross receipts for small farms compared to 4 percent for large farms in 2004

Additional Resources

Economic Research Service (ERS) web site
http://ers.usda.gov

1996 and 2002 Farm Bill side-by-side comparison
http://ers.usda.gov/Features/farmbill

Farm Bill impacts
http://ers.usda.gov/briefing/FarmPolicy

Farm policy, farm households, and the rural economy
http://ers.usda.gov/Briefing/Adjustments/

Track One

Risk Management

Cultivating Success: Sustainable Small Farming and Ranching Education Program

Marcy Ostrom and **Malaquias Flores**
Washington State University
Puyallup, Washington
Cinda Williams and **Theresa Beaver**
University of Idaho
Moscow, Idaho

Cultivating Success is a collaborative educational program of Washington State University (WSU), the University of Idaho (UI), and a non-profit, Rural Roots, designed to address the risk management issues, and production, business and marketing needs of beginning and existing farmers, as well as agricultural professionals and students. The program consists of semester-long courses and intensive short courses that are offered through Extension and on campus at both WSU and UI. The goal of the program is to *create and implement new educational programs that will increase the number and foster the long-term success of small sustainable farmers and ranchers in Washington and Idaho.* With this goal in mind, the courses utilize a community-based, experiential approach. Experienced farmers, community resource people, and university specialists are brought together with students in the classroom and in the field. Farmer-student mentoring relationships are fostered. Since the program's beginning in Fall, 2001 over 700 participants have taken one or more classes.

Two of the courses developed as part of the Cultivating Success program have proven particularly useful in county extension settings and, to-date, have been offered through 14 county extension offices in Washington and five in Idaho. The first, Sustainable Small Acreage Farming and Ranching, was designed to provide beginning and existing farmers with the planning and decision-making tools and the knowledge of farm production and management systems needed to develop a whole-farm plan for an economically and environmentally successful small acreage enterprise. Weekly evening course sessions cover such topics as goal setting, resource assessment, sustainable pest and soil management techniques, alternative cropping and livestock systems, and marketing strategies. The course model encourages co-learning and interactive discussion among experienced farmer mentors, university agricultural specialists, and students. Field trips are taken to farms, value-added businesses and direct market outlets. By the end of the course students have completed a whole-farm plan for their unique farm enterprise.

A second course, Agricultural Entrepreneurship, focuses on farm business planning and the reduction of financial risks. Students gain knowledge of the business planning process, financial management techniques, and successful marketing strategies. By the end of the course, they are expected to have completed a farm business plan and made a presentation on it to the rest of the class. Topics covered include setting enterprise goals, planning and research, regulatory and legal structures, insurance, market analysis, marketing strategies, record-keeping, budgets & cash flow, financial statements, and federal farm programs and resources. Over 200 farm business plans have been developed as a result of students taking this course. Student evaluations indicate that many have improved or changed their farm management strategies as a result of

course participation. Other positive outcomes of course participation have included many new start-up farm businesses, the diversification of existing farm businesses, and strong farmer networking. Over 80 percent of participants report having taken advantage of additional educational activities and public agricultural resources as a result of being introduced to them in the classes.

New Programs for Immigrant Farmers

Recently, the Cultivating Success Program has expanded to include courses for Latino and Hmong audiences. Washington has growing numbers of immigrant farmers who need access to capital, land, and business management skills. Many formal extension formats have been a poor fit for these audiences due to limited English and literacy skills and extremely low incomes. Very little information exists on the actual numbers of these farmers or the extent of their needs and farming goals. While the 2002 Agricultural Census listed 1,821 Latino-owned farms in Washington, a 14 percent increase from 1997, this was most certainly an undercount. The last agricultural census missed all of Washington's growing population of Hmong farmers.

New partnership agreements with the USDA Risk Management Agency and a grant from the Sustainable Agriculture Research and Education program have allowed us to conduct initial needs assessments and begin developing and adapting our curricula for Latino and Hmong audiences. Listening sessions and interviews with Hmong farmers in the Puget Sound area and Latino farmers in central Washington have helped to identify educational and informational priorities. Over 350 Latino farm families and 99 Hmong farm families in need of assistance have been identified. In accordance with the stated farmer needs, educational programs on various aspects of business planning and whole farm management are being offered in cooperation with county extension offices in the form of courses, workshops, farm walks, radio talks, and one-on-one counseling. Over 50 Latino and 35 Hmong farmers have participated in these educational programs. Participants have gained knowledge about financial management and marketing, alternative pest and soil management, drought mitigation, and federal assistance programs.

Additional Educational Opportunities

Annual workshops are held in Washington and Idaho to train new course instructors and extension educators to offer Cultivating Success courses in additional counties. Student and instructor manuals are continually being improved to make it easy for such educators to adapt instructional materials to their unique audiences. New certificate programs in Sustainable Small Acreage Farming and Ranching have been approved at both Washington State University and the University of Idaho for academic and continuing education (CEU) students. Courses can be taken individually or in a series in designated topic areas to earn a certificate in Sustainable Small Acreage Farming and Ranching. The certificate program includes a strong emphasis on practical, on-farm experiences and farmer mentoring relationships. With the help of Higher Education Challenge grants, many new courses are under development for the certificate program, including courses in sustainable livestock management, organic farming, and applied soil management. Many of these courses will be available for distance delivery. For more information on the certificates, individual course offerings, or the Cultivating Success Program, please visit our website at http://cultivatingsuccess.org

What Are Animal Feeding Operations? Do The New Regulations Affect My Farm?

Gregory Beatty
U.S. EPA
Washington, DC

Introduction
On February 12, 2003, EPA published in the *Federal Register* revisions to the 25 year old regulations for concentrated animal feeding operations (CAFOs). The revised rule replaces 25 year old technology requirements and permitting regulations that did not address today's environmental needs and did not keep pace with growth in the industry. Effective manure management practices required by this rule will maximize the use of manure as a resource for agriculture while reducing adverse impacts on the environment.

The new rule applies to about 15,500 livestock operations across the country. Under the new rule all CAFOs were required to apply for a permit, submit an annual report, and develop and follow a plan for handling manure and wastewater. However, following a court challenge to the revised regulations brought by both industry and environmental petitioners, on February 28, 2005, the 2nd Circuit Court vacated the "Duty to Apply" and added the requirement that nutrient management plans (NMPs) must be submitted with the National Pollutant Discharge Elimination System (NPDES) permit application or notice of intent to provide for adequate public review. In addition, the court required the terms and conditions of the NMP become terms and conditions in the NPDES permit. EPA is currently in the process of revising the regulations to comply with the court decision.

EPA may approve states to run their own regulatory and permitting programs for CAFOs. If EPA has approved your state, the state is the permitting authority and will issue an NPDES permit for your CAFO. EPA has approved most states to run the CAFO program. Alaska, Idaho, Massachusetts, New Hampshire, New Mexico, and Oklahoma are states that EPA has not approved to run the permitting program for CAFOs. In those states, Tribal lands, and in all territories except the Virgin Islands, EPA is the permitting authority and will issue NPDES permits for CAFOs.

What are the CAFO Regulations?
For CAFOs and certain other industries, EPA has preset some of the minimum requirements that go into each permit in regulations called "effluent limitations guidelines" (ELGs). When the permitting authority issues a permit for your CAFO, it does not set your permit requirements on its own. Instead, it places the requirements of the ELGs directly into your permit. These requirements may consist of both limits on the amount of a pollutant that can be discharged (numerical limits called "discharge limits") and other ELG requirements (management practices and record-keeping requirements). Your state permitting authority may also set additional requirements that are needed to protect water quality or other requirements that apply under state or local law.

The ELGs for CAFOs include both discharge limits and certain management practice requirements. Note, however, that for most animal types, the ELGs for CAFOs apply only to large CAFOs. Permitting authorities will set effluent limitations for medium and small CAFOs on a case-by-case basis depending on the specific situation at the CAFO and based on the best professional judgment (BPJ) of the permitting authority. In many cases, those requirements may be similar to the requirements for large CAFOs.

The revised regulations focus on the CAFOs that pose the greatest risk to water quality. By regulating mainly large CAFOs and some smaller CAFOs that pose a high risk to water quality, EPA is regulating close to 60 percent of all manure generated by operations that confine animals.

Do These Regulations Affect Me?

These regulations apply to owners and operators of animal feeding operations (AFOs) that are CAFOs because they meet certain conditions. If your animal operation meets those conditions and discharges or proposes to discharge to waters of the U.S., it is regulated and you must apply for an NPDES permit.

All concentrated animal feeding operations, or CAFOs, are covered by these regulations. A CAFO is a specific kind of AFO. The regulations describe which AFOs are considered CAFOs. To be regulated as a CAFO, your operation must first meet the regulatory definition of an AFO.

An AFO is an animal feeding operation that meets both of these conditions:

1. The animals are confined for at least 45 days during any 12-month period.

   The 45 days of confinement do not have to be 45 days in a row, and the 12-month period can be any consecutive 12 months.

2. Crops, forage growth, and other vegetation are not grown in the area where the animals are confined.

   This does not mean that any vegetation at all in a confinement area would keep an operation from being defined as an AFO. For example, a confinement area like a pen or feedlot that has only "incident vegetation" (as defined by your permitting authority) would still be an AFO as long as the animals are confined for at least 45 days in any 12-month period.

For a facility to be a CAFO, it must first meet the regulatory definition of an AFO. A CAFO is an AFO that has certain characteristics. There are two ways for an AFO to be considered a CAFO:

- An AFO may be defined as a CAFO or
- An AFO may be designated a CAFO.

An AFO can be defined as a CAFO if it has a certain number of animals and it meets the other criteria contained in the regulations. The regulations set thresholds for size categories based on the number of animals confined at the operation for a total of 45 days or more in any 12-month period.

An operation is defined as a Large CAFO if it:

- Meets the regulatory definition of an AFO and
- Meets the large CAFO threshold for that animal type.

An operation is defined as a Medium CAFO if it:

- Meets the regulatory definition of an AFO;
- Meets the Medium CAFO thresholds for that animal type; and
- Meets at least one of the following two criteria (called "discharge criteria"):
  - A man-made ditch, pipe, or similar device carries manure or process wastewater from the operation to surface water or
  - The animals come into contact with surface water that runs through the area where they are confined.

The discharge criteria apply to only the parts of the operation where you confine animals, store manure or raw materials, and contain waste. For example, if you dig a ditch or install a pipe that drains water from your confinement area into a stream or lake, your operation would meet the first discharge criterion. Open tile

drains in the areas where animals are confined, wastes are collected and stored, or raw materials are kept also meet the first criterion if the tile drains carry pollutants from these areas to surface water. Your operation meets the second discharge criterion if a stream runs through the confinement area and the animals have direct access to the stream.

The second way for an AFO to be a CAFO is to be designated as a CAFO. If an AFO does not meet the definition of a large or medium CAFO but the permitting authority finds it to be a significant contributor of pollutants to surface waters, the permitting authority may designate that operation as a CAFO. To designate an AFO as a CAFO, the permitting authority must inspect the AFO and must find that the operation is a significant contributor of pollutants to surface waters.

EPA has set thresholds for operations that confine different kinds of animals. Thresholds are used with discharge criteria to determine which AFOs are defined as Large or Medium CAFOs and which should be designated as Medium and Small CAFOs.

How Do I Apply for a Permit?

You must get the forms you need to apply for an NPDES permit from your permitting authority. Under the federal NPDES regulations, there are two kinds of permits—general permits and individual permits. Each permitting authority adopts its own rules about what types of permits operations need, so you should contact your permitting authority.

An NPDES general permit has one set of requirements for a group of facilities. For example, all CAFOs or all poultry CAFOs in a particular area, such as an entire state or watershed within the state, might be covered under one general permit. The permitting authority sets the permit conditions, issues a draft permit, and requests comments from the public. The permitting authority makes changes to the draft permit based on the public comments and then issues the final permit. The general permit specifies what kinds of operations can be covered. Owners and operators of eligible operations may then apply for coverage under the permit.

Operators of CAFOs that are eligible for coverage under a general permit may notify the permitting authority that they want to be covered by submitting a Notice of Intent (NOI). If an NPDES general permit is available in your state and your operation meets the eligibility requirements, you must fill out an NOI and submit it to your permitting authority to apply for coverage under the general permit. The general permit will tell you how to apply for coverage and when your coverage will become effective.

An NPDES individual permit contains requirements specifically for one CAFO. You must apply for an NPDES individual permit if:

- A general permit is not available
- Your CAFO is not eligible to be covered under the general NPDES permit
- You want an individual permit, or
- Your permitting authority requires you to apply for an individual permit.

To apply for an individual permit, you must fill out either NPDES Forms 1 and 2B or similar forms required by your state. (Contact your permitting authority for the proper forms). You must complete the forms and submit them to your permitting authority.

When your permitting authority receives your permit application, it will use the information you have submitted to draft a permit for your operation. Your permitting authority will base your permit requirements on the unique conditions at your operation. After a public comment period on the draft permit, your permitting authority will modify the draft, if necessary, and then issue your final NPDES individual permit.

What Requirements Will my NPDES Permit Contain?

Your NPDES permit will say what you have to do to comply. Certain minimum requirements must be in every NPDES CAFO permit. Your permitting authority may include more than the minimum requirements in your NPDES permit. Read your permit carefully to find out exactly what you have to do to your CAFO.

Your NPDES permit will have four main sets of requirements:

1. Effluent limitations
2. Special conditions
3. Standard conditions
4. Monitoring, record-keeping, and reporting requirements

The CAFO regulations establish two special conditions that must be included in all NPDES CAFO permits and one additional condition for only large CAFOs. Your permitting authority may include other special conditions in your NPDES permit as well. Remember to read your permit to find out what you have to do, and contact your permitting authority if there is anything in your NPDES permit that you do not understand.

First special condition for all CAFOs: The terms and conditions of your nutrient management plan. If you own or operate a CAFO of any size your NPDES permit will contain the terms and conditions of your nutrient management plan. The goal of the nutrient management plan is to minimize your CAFO's impact on water quality. Your plan must describe the practices and procedures that will be implemented at your operation to meet all of the production area and land application area requirements that apply to your operation.

Second special condition for all CAFOs: Duty to maintain permit coverage. Every CAFO operator must maintain coverage under an NPDES permit until the CAFO is properly closed. In general, an operation is considered properly closed based on showing that there is no remaining potential for a discharge of the manure, litter or process wastewater that was generated while the operation was a CAFO. This condition applies to CAFOs that are closing down and to CAFOs that are downsizing or making other changes so that they will no longer meet the CAFO definition. If you are closing or downsizing your CAFO and your NPDES permit expires before the facility is properly closed or while the facility might still discharge CAFO-generated manure or wastewater you must reapply for an NPDES permit.

Additional special condition for large CAFOs: Transfer of manure, litter, and process wastewater to other persons. If you own or operate a Large CAFO, your NPDES permit will have a special condition for transfers of manure, litter, or process wastewater to other persons.

If you own or operate a large CAFO, and you transfer manure, litter or process wastewater to other persons, you must:

Give nutrient content information to the recipient. If you give away or sell manure, litter, or process wastewater from large CAFO, before the transfer you must give the results of your most recent representative nutrient analysis to the person who takes it away.

Keep records of your transfers.

These requirements apply no matter how much manure you sell or give away or who takes it.

What Is the Compliance Assurance Process?

For help in understanding the regulations, permitting process, and permit requirements, it is best to contact your NPDES permitting authority. Even if you do not have an NPDES permit, the permitting authority for CAFOs in your state can explain what the regulations are all about and whether you need an NPDES permit. You can find contact information for your permitting authority on EPA's Web site at www.epa.gov/npdes/afo/statecontacts

EPA can also help you understand the regulations and permitting process. You can find contact information about the regulations (including animal sector-specific brochures, frequently asked questions, and the text of the regulations) on EPA's Web site at www.epa.gov/npdes/caforule.

In addition, EPA plans to publish more information to help you use different technologies and management practices at your CAFO to comply with the regulations.

EPA's National Agriculture Compliance Assistance Center, or Ag Center has information on many topics, including best management practices, education and training, laws, and research.

EPA's National Agriculture Compliance Assistance Center
901 North 5th Street, Kansas City, KS 66101
1-888-663-2155
E-mail: agcenter@epa.gov
Web site: http://www.epa.gov/agriculture

Are Managed Onsite Wastewater Systems a Permanent Element of Wastewater Infrastructure or Can You Keep an Onsite Wastewater System Smelling Sweet?

A. R. Rubin
McKim and Creed
Cary, North Carolina

Infrastructure constitutes those essential services and functions necessary to support a society or culture. Historically we have considered the municipal water supply and wastewater system, the transportation network, the power grid and communication network as essential elements of infrastructure. These managed elements of our service infrastructure provide the underlying framework or foundation for protecting our collective well being. Onsite wastewater treatment systems have been utilized extensively for over 100 years and they too are a part of infrastructure if managed properly and professionally.

To develop sustainability of the onsite wastewater system as a permanent element of infrastructure we must begin with a basic change in our mindset, the mindset of the public served by wastewater systems, and by the elected and appointed officials supporting the development and proliferation of wastewater systems. Our challenge as managers is to assure:

1. Program Direction
2. Budget and operating capital available
3. Fiscal management adequate to sustain system
4. Maintenance Management
5. Operations Management
6. Project Management
7. Comprehensive planning
8. Management Review and Program Modification/Modernization

For many of these years, the system was considered a temporary system, destined to fail and to be replaced by municipal sewerage. The traditional onsite wastewater treatment system consisted of a tank followed by a soil absorption system. For many of these 100 years, little time was required to develop any innovation to the traditional system. This philosophy changed dramatically in the 1970s as the Clean Water Act Amendments recognized the value of innovative and alternative technologies to address serious water quality and public health issues.

To assure the sustainability of the onsite and decentralized system as a permanent element of the nation's wastewater infrastructure, those essential activities and practices listed previously must be implemented, operationalized, and sustained. These are not unique to the wastewater industry, but necessary in any activity/service considered an essential element of infrastructure.

To assure the sustainability of the industry, practitioners must continue to address:

1. Analysis of wasteflows and quality,
2. Evaluation of site and soil limitations and associated assimilative capacity,
3. Available treatment and dispersal technologies
4. Management Requirements
    a. Essential Management Issues
        1. Permanence
        2. Sustainability
        3. Indispensability

Wastewater Flow and Quality

Onsite and decentralized wastewater treatment systems were initially developed to accommodate the wastewater generated at small, rural homesteads. Today, onsite and

decentralized systems are utilized to treat wastewater generated in the traditional rural homestead generating 50 to 60 gallons per person per day to the trophy home containing over 10,000 square feet of living space, employing a cadre of service providers and generating thousands of gallons of water per day; rural businesses and industries, and community based systems generating many thousands of gallons per day.

Critical to the development of the on site wastewater system as integral to infrastructure is acceptance that these systems can cope with a wide range of waste volumes and qualities. Our task as managers, designers, installers and operators is to assure that the clients - the landowner and the elected officials responsible for the proliferation of onsite systems - are well acquainted with the management requirements of the system developed for a specific site.

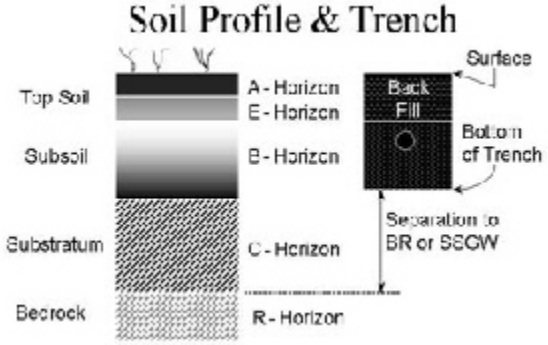
Site and Soil Assessment

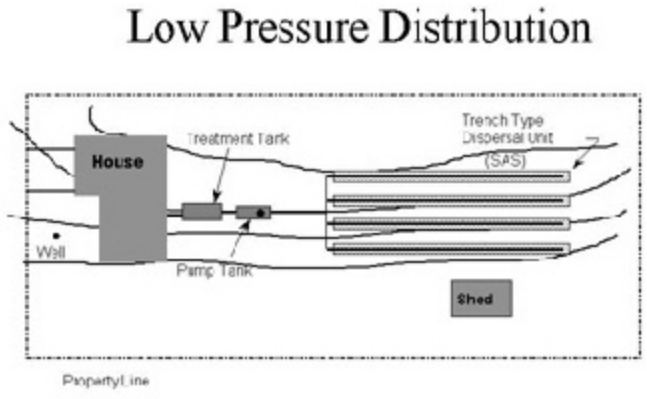
Throughout the country onsite wastewater management systems are commonly used in rural and urban fringe areas. Presently many state laws (see for example Virginia Department of Health, 12 VAC 5 or North Carolina Laws and Rules for Onsite Sewage Disposal, 15A NCAC .1300) allow a variety of onsite wastewater management options and alternatives. Prior to determining which of the options to utilize on any parcel of land, the local environmental health specialist accomplishes both a comprehensive analysis of the wastewater to be treated on the site and a site and soil assessment to determine the treatment potential of the proposed wastewater receiver. These analyses of the waste and the receiver are essential to assure that the system selected will protect public health, environmental quality, the homeowner investment in the property, local tax base and the community's image and investment potential.

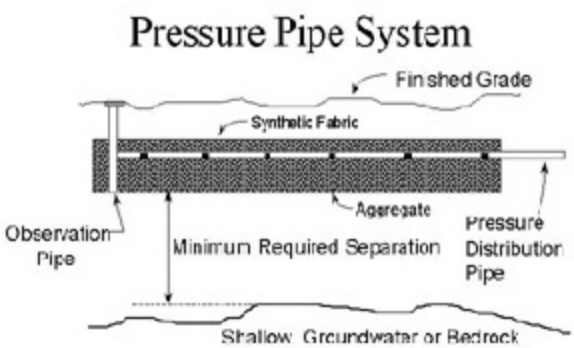
The site evaluation examines the area available on site for wastewater management, the slope and topography of the site, and the landscape position occupied by the property. This assessment is essential to assure that the property is sufficiently large to host the wastewater system and to insure that when installed, the onsite wastewater system is buffered adequately from wells, surface waters, and the adjoining property.

The soil evaluation is required to determine the soil properties deemed critical for a properly functioning soil absorption system. The properties evaluated include: depth to limiting layers or horizons (such as rock or shallow groundwater) on the site, soil texture and structure, mineralogy and consistence, the estimated permeability of soil on any receiver site, and whether the native soil is adequate to provide the necessary treatment of wastewater applied. Each of these factors is critical in the design process. For example, states have specific regulatory requirements addressing separation distance. In several states including North Carolina, wastewater which has been treated to secondary levels can be in as little as 6 inches of suitable soil.

The selection of the wastewater management option or alternative is dependent on maintaining the appropriate separation distance between the zone of waste application and any restriction that will reduce treatment capacity of a site. State and Local rules must be consulted prior to design and specification for any onsite wastewater treatment system.







Wastewater Treatment Options

Maintenance of these separation distances is important. Where soil is deep, a conventional or traditional gravity dosed soil absorption wastewater treatment system is often adequate. These traditional systems are typically placed in a 30 inch to 36 inch wide by 30 inch to 36 inch deep trench. The trench is typically filled with approximately 12 inches to 18 inches of gravel, expanded polystyrene, or a chamber type system all of which serve to support a trench type system and utilize gravity to facilitate the distribution of wastewater to the soil. Soil material is used to fill and close the trench. These traditional systems require a soil at least 42 inches in depth to maintain adequate soil cover over a system and adequate separation distances to a restriction. In some jurisdictions around the country, the soil depth required to install a traditional, gravity dosed wastewater soil absorption system is as much as 6 feet.

Where the depth of the soil is restricted, one of the pressure dosed options may be designated. The low pressure pipe (LPP) system was developed in North Carolina in the late 1970s and more recently drip/spray irrigation systems have been utilized extensively where soil limitations exist.

In areas where there are serious site or soil limitations, where the environment is particularly sensitive, or where there are sources of drinking water that may be impacted by onsite wastewater systems, some form of advanced treatment may be required before liquid is placed into the soil for final treatment and dispersal. In other instances, there may be no option available to repair an improperly operating onsite wastewater system than a mechanical treatment device. In either of these examples, aerobic treatment units or media filters may be employed to provide extensive pretreatment of the wastewater before it is placed in the receiver environment. In order for these systems to function properly for the life of the property, continuous, high level operation, maintenance, and management is essential.

These technically advanced wastewater treatment and dispersal systems will not function in a sustainable manner without a comprehensive management effort. Several states have now mandated essential management requirements associated with the use of advanced systems. Experience indicates that the management may be either public or private, but it must be performed by competent service providers. These requirements are contained in the USEPA Voluntary Guidelines for Onsite and Decentralized Wastewater Treatment (2003).

Management

All onsite wastewater treatment systems will require routine and recurring inspection, operation and maintenance, and management. In order for a county to issue a development or improvement permit which specifies one of these mechanically intensive options, a public or private, certified management entity must be available. This can be accomplished either as contract or service agreement with a private management entity or through an agreement with a county management entity. Both public and private management entities are operating in North Carolina and throughout the country. Recently the USEPA developed a comprehensive set of management guidelines which, although voluntary at this time, encourage local units of government to become much more involved in the management of onsite and decentralized wastewater management systems. These systems are a permanent part of the wastewater management infrastructure and they must be managed accordingly. The USEPA has proposed 5 levels of management for onsite and community wastewater treatment systems. Communities are strongly encouraged to examine management needs associated with onsite wastewater programs.

Management will be necessary to assure any system is managed properly and in a sustainable manner. The technologies and management strategies are essential to develop this infrastructure.

Conclusions

Onsite wastewater treatment systems have been a part of the rural landscape for over a century. Since the early 1980s the use of these systems has resulted in development of millions of dwelling units throughout the country. On sites with few limitations, the conventional treatment and dispersal technologies of a septic tank and gravity dosed leach field are appropriate. In areas with site or soil limitations, degree of technology employed to address site and soil conditions becomes more complex. Today on-lot wastewater treatment facilities are capable of producing high quality treated liquid suited for unrestricted reuse. The levels of treatment required on a specific site and the associated management are the subject of the recent EPA Guidelines and Strategy statement concerning onsite and decentralized wastewater systems. The agency has concluded that these systems are a permanent element of infrastructure and must, like any element of infrastructure, be managed comprehensively.

Children's Health: Are Your Children at Risk from their Environment?

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Children's Environmental Health (CEH) has been identified as one of the top priorities by the U.S. Environmental Protection Agency (EPA). Children are often more heavily exposed to toxins in the environment. Pound for pound, children breathe more air, drink more water, and eat more food than adults. Children's behavior patterns, such as playing close to the ground and hand-to-mouth behavior, increase exposure to potential toxics. In addition, children may be more vulnerable to environmental hazards; they are less able than adults to metabolize, detoxify, and excrete toxins due to developing body systems. Environmental risks to children include asthma-exacerbating air pollution, lead-based paint in older homes, and persistent chemicals resulting from multimedia exposures (air, soil, water) in a variety of settings. Environmental risks include cancer and reproductive and/or developmental changes.

The principal objective of the EPA Region 4 CEH Partnership is to develop capacity, enhance communication, and facilitate coordination of partnership states to reduce children's exposures to environmental health hazards. Efforts to reduce children's exposures to environmental health hazards consist of a variety of outreach efforts highlighting hazards, the effects of such hazards, and practical ways to protect children from exposure in home and school environments.

Beginning in 2000, EPA Region 4 Children's Environmental Health Program established a partnership with the U.S. Department of Agriculture Cooperative State Research, Education, and Extension Service (CSREES) through regional land grant universities to develop state capacity in children's environmental health. Land grant universities include: Alabama Cooperative Extension System—Auburn University, Clemson University, University of Georgia, University of Florida, University of Kentucky, Mississippi State University, North Carolina A&T State University, North Carolina State University, and the University of Tennessee. Through this partnership, EPA and CSREES have conducted educational activities to increase awareness of children's environmental health hazards. Education and outreach material addressing health hazards are being utilized and distributed in over 80 percent of the counties in the region via programming and special education efforts. Special efforts have included the promotion of Children's Environmental Health Month (October), which collectively reached over 17 million people via conferences, health fairs, and media programming. In addition to serving as an education and outreach resource, CSREES also provides compliance assistance for EPA's lead program in each of the partnership states.

Each of the partnership states has designated an extension professional, as listed on the proposal cover page, to serve as the state contact to promote children's environmental health activities. To further expand the level of expertise/resources for the promotion of children's environmental health, each state contact has established a state-specific children's environmental health State Working Group. State-specific working groups include representation from the state level organizations, including but not limited to the Departments of Agriculture,

Environment, and Health. Other examples of effective partnering include:

- Schools of Pharmacy. Cooperative efforts include addressing childhood asthma (three states have established this partnership).
- 1890 - Traditional Black Land Grant Institutions. Cooperative efforts include focusing on under-served audiences (seven states have established this partnership).
- Cherokee Indian Reservation. Cooperative efforts include the development of materials specific for Native American audiences. (NC has established this partnership).

Additionally, state-specific work groups include representation from local level organizations and movements.

EPA Region 4 CEH Partnership maintains regular contact via conference calls, electronic/hard copy correspondences, and regular meetings. An annual meeting/training is held each year to share the past year's accomplishments and determine the future direction of the program. Since 2001, annual meetings focusing on topics including but not limited to asthma, lead, mercury, mold, air quality, and safe drinking water have provided training to over 160 participants.

LPES Small Farms Fact Sheet Series

Mark Rice
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Practical, science-based fact sheets developed for small-scale animal producers by 20 national experts from 12 land-grant universities, EPA National Ag Assistance Center, MWPS, and USDA-CSREES:
http://.lpes.org/Small_Farms.html

Introduction
Small-scale farms make up 92% of the farms in the United States. They contribute significantly to the nation's food supply and to local economies. They strengthen rural communities and contribute to a diverse and pleasing rural landscape.

Exceeding $100 billion annually, animals and animal products account for the majority of U.S. agricultural products. However, livestock and poultry farms, regardless of size, are facing increasing attention about the way they affect the environment. Many factors can affect a farm's impact on the environment. These factors include the animal type (kind), size, and number; the distance to water; the soil type; the weather; and the distance to neighbors.

Good stewardship is important for everyone, including small-scale farmers. Using best management practices can protect the environment. These practices can also improve the health and well-being of the animals and increase farm profits. The first step is to evaluate individual farm situations and then adopting best management practices suitable for each farm situation.

Purpose
The ***LPES Small Farms Fact Sheet*** series was prepared to inform the large, diverse population of small-scale animal producers about environmental stewardship and to equip the educators who advise them with appropriate information. With this information, producers are encouraged to practice environmentally sound management with the goal of increasing the success of their animal operations.

Producers may prefer to use the ***Small Farms Fact Sheet*** series as a reference guide, viewing the online PDF files of each fact sheet at www.lpes.org/SmFarms.html The PDF files can also be printed or downloaded for future reference. These files can be accessed at no charge.

Educators may choose to purchase unlimited access to the MS Word files. By purchasing access to the materials, they can download the files and modify them to meet their specific educational needs.

At present, the series consists of seven completed fact sheets that can be printed as is or modified. Two of these fact sheets are being translated into Spanish, and additional fact sheets are being prepared.

Currently available fact sheets include:

1. Small-Scale Farmers and the Environment: How to be a Good Steward
2. The ABCs of Pasture Grazing
3. Manure on Your Farm: Asset or Liability?
4. Protecting the Water on Your Small Farm
5. Managing Animal Deaths: Your Options
6. Got Barnyard and Lot Runoff?
7. Good Stewardship Practices for Horse Owners

Summaries of Each Fact Sheet

1. Good stewardship is important for everyone, including small-scale farmers. Using best management practices can protect the environment. These practices can also improve the health and well-being of your animals and increase your farm's profits. The first step is to evaluate your farm. By adopting management practices suited to it, you can protect your investments as well as the environment.

2. Well-managed pastures are Always the Best Crop for the environment, for the grazing animal, and for you. A well-managed pasture is a dense, healthy crop of grass and legumes that can provide a security blanket for the land, good nutrition for the animal, and more money in your pocket. Achieving a well-managed pasture does not take a big investment. It does require animal and plant knowledge, identification of your goals, some equipment, and practice.

3. If farm animals spend any part of the year in barns, stalls, pens, loafing areas, or feeding areas, you will need to deal with manure from those areas. What do you think about that manure? Do you view it as an asset? Or, do you see that pile as being a liability? This fact sheet compares the value of different types of manure as sources of nutrients and organic matter. It describes how to make manure on your farm an asset rather than a liability.

4. Groundwater such as wells and surface water such as streams and ponds are important sources of water for drinking and recreation in the United States. In recent years, reports of bacteria, nitrogen, chemicals, and other pollutants in groundwater and surface water have increased concern about its quality. What causes water pollution? This fact sheet answers that question and discusses ways to protect water quality.

5. Animals routinely die on a small farm. Selecting a method of disposing of them is an important decision because it affects animal and human health. Factors that should be considered include the number of dead animals, use or destruction of the nutrients contained in the dead animals, farm location, soil type, labor available, cost, and availability of alternative options. Planning and preparing for animal deaths, including deciding on the best method to use, developing the best setup, and ensuring that it meets local and state regulations, is very important.

6. Uncontrolled runoff can contain nutrients and runoff from manure. If allowed to enter nearby surface water like rivers and ponds, it can cause significant harm. This fact sheet discusses ways to prevent or reduce the possibility that runoff from barnyards and open lots will pollute the surrounding environment.

7. This fact sheet provides a brief overview of some good soil and water stewardship practices for horse owners. It focuses on basic pasture and paddock management and on manure management. Two manure treatment options, composting and fertilizer nitrogen enhancement, are presented along with a method to calculate the proper manure application rate on pastures and crops.

New Fact Sheets Under Development

Small-Scale Farmers and the Environment: How to be a Good Steward (Spanish translation)

The ABCs of Pasture Grazing (Spanish translation)

Nutrient Management Basics

Managing Runoff from Open Lot Livestock Facilities with Vegetative Systems

The ABCs of Livestock Watering Systems

The ABCs of Livestock Fencing

Manure Management for Small Swine Farms

Modified Dry Litter System for Small Swine Farms

Animal Waste Management in Tropical Island Environments

Small Farms Fact Sheet Team Members

A national team of 20 subject matter experts from 12 land-grant-universities, the EPA's National Ag Assistance Center, MWPS, and the USDA CSREES collaborated in the development of the *Small Farms Fact Sheet* series.

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Jill Auburn, USDA CSREES
Mark Risse, University of Georgia
Tommy Bass, University of Georgia

Obtaining Small Farms Fact Sheets

The fact sheets can be obtained at the LPES website: http://www.lpes.org , under the "Educational Products" button. PDF or Word files are available. The PDF files are accessible free of charge; the Word files, suitable for modification, can be downloaded for a one-time fee of $35.00. Both MasterCard and Visa are accepted.

For More Information

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Finally, Revenue Insurance for Small Farm Families

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There are five types of risk that farm families face. Human risk is related to the personal aspects of agriculture like, retirement and health and health insurance and the effect agriculture has on them. Our effect (real or perceived) on the environment is becoming more contentious every day and is recognized as risk for farm families. The fact that our society is becoming more litigious and that our trading partners operate at greater distances every day makes recognizing and managing legal risk more important. The last two types of risk - production and marketing- have long been identified as the only risk farm families face. The majority of the current risk management tools reflect that.

However, farm families must first learn to recognize the risk in their lives and then explore every opportunity to manage and minimize risk. Luckily, today there are many risk management strategies and tools available. That's good because every operation is different and every family's set of resources, needs, and desires is different too.

The agriculture service industry including the USDA have developed many tools to help farm families minimize risk and many individuals have developed and adopted both management and production strategies that are important, too. They might include crop diversification or simply an irrigation system. Some farmers may choose to specialize in one enterprise and be as efficient and aggressive as possible where another may choose to add value or diversify within their segment of the industry. An example might be pre-conditioning feeder calves or feeding your cattle to a finished weight and marketing them to townspeople and neighbors. Others may diversify to another enterprise that is completely different like sheep and a market garden; where two enterprises do not follow the same market structure, peak labor needs, or demand curves. Each of these examples is normally profit driven rather than risk inspired, but the end result is the same that these options allow farm families to spread their marketing and production risk. Many farmers have engaged in production contracts and yet others have simply added a hay wrapping system to eliminate harvest (production) loss. There are many, many risk management strategies being used every day by many, many different farm families that are specific to their needs. These strategies for managing risk could be classified as pro-active, as requiring increased marketing and production knowledge and effort.

One other strategy available to farm families is buying crop insurance. This is classified as passive risk management where after the policy is put in force the insured has very little else to do, except report to the insurance agent. Many of the early developed crop insurance products insure against production risk and others against market risk. And now a new type of policy called Adjusted Gross Revenue-Lite can insure the family against decreases in gross revenue is available.

It's important to mention that a mix of pro-active and passive strategies would allow the manager the broadest risk management protection. Meaning crop insurance should be added to the overall risk management program because a well understood crop insurance policy may cover all the unknown and un-anticipated events, as well as, the unintended consequences of non-related events that happen to farm families throughout the production and marketing season.

Most small and diversified farm families have no experience with crop insurance as there have never been products available to match the agriculture they have. But that changed when the Federal Crop Insurance Corporation released a new policy- Adjusted Gross Revenue –Lite. It is now available to farm families in CT, DE, ID, MA, MD, ME, NH, NJ, NY, RI, VT,WV, AK, NC, OR, WA, and VA. The problem is farm families are limiting their risk management options by not taking the time to learn about this valuable tool. Many different types of operations can attain protection against declines in their adjusted gross revenue at an affordable price by using the AGR-Lite crop insurance tool. You owe it to your family to carefully study Adjusted Gross Revenue – Lite.

Grass based animal and vegetable, fruit, and vegetable, operations (including organic) appear to have found a special niche with Adjusted Gross Revenue-Lite as premiums are affordable considering the level of coverage and just what is required to file a claim. The policy provides insurance against loss of revenue from any unavoidable natural peril or market fluctuation that causes a loss in revenue. Let's review the facts.

AGR-Lite

Insures against decreases in gross revenue of the farm based on a 5 year average from the 1040 Schedule F
Based on the level of diversification, farm families may buy different levels of coverage to protect their gross farm income that range from 65 to 80% and at different payment rates of either 75% or 90%
The plan provides protection against low revenue due to unavoidable natural disasters and market fluctuations that affect income during an insurance year.
The government will pay a portion of the premium for the AGR-Lite policy that ranges between 48% and 59% based on the level of protection.

How it works: Small vegetable operation example:

Let's assume your market garden has an adjusted gross revenue of $17,100 per year based on a five year average. Let's also consider that your family depended on the profit from this revenue to be added to it's off- farm income. You could buy coverage to insure 80% of the adjusted gross income at a "90 cents on the dollar" payback option. The premium for this coverage level at this gross revenue would be $340 (There is variation of premium between states and counties within states)

Continuing with the example let's assume that because of a drought the market garden grossed only $5000 for this insured year. What would happen? Without the insurance, the operation would obviously gross $5000. But with the AGR-lite coverage at the 80% level and a 90% payment rate the gross revenue would be different. First the farmer would receive the $5000, and then the additional would be derived from the following breakdown. Eighty percent of the difference between his coverage level and his actual gross income would be calculated as follows:

1. Coverage level = $17,100 X 80% or **$13,680** called your target income

2. Target Income $13,600 minus the actual gross income of $5,000 equals **$8680** which is called the income deficit.

3. The indemnity payment is derived by multiplying the income deficit by the repayment rate of $0.90. In this example the computation would be $8,680 times $0.90 equals $7,812 when added to the original $5000 would gross the family $7,812 plus $5,000 or **$12,812**.

So, in this case, the family has insured 80% of their gross income at a $0.90 on the dollar payment rate for a premium of $340. Every individual situation is different as there is variation between counties and

enterprises. Also, the family has insured gross revenue levels not profit. This means though, that for operations like vegetables where the margins are generally higher than for livestock enterprises by insuring 72% of the gross revenue **the family has indeed insured a profit!**

Considering even larger operations using the same crop mix but considering a higher gross revenue of $100,000 and the coverage level of $72,000 the premium was $2,074. That makes sense for a high margin crop and the premium is considered an allowable expense by the IRS.

But if a dairy family was considering this risk management strategy the scenario would appear to be similar, but the nature of the business would cause the manager to take a closer look. The premium for a small dairy with an adjusted gross income of $90,000 and a 75% coverage level with a 90% payment rate is calculated at $2,488. That means that family can buy protection for $60,750 of their average gross revenue of $90,000. As their gross revenue falls below $67,500 the insurance company will pay an indemnity of $0.90 on each dollar below the target. The manager must understand two points about this product and its relationship with a dairy operation. First, since this is revenue insurance; what happens when the feed supply is reduced because of dry weather and the manager buys extra feed to get the cows and replacement through the winter? The answer is, considering the AGR – Lite indemnity nothing. Because this policy insures only the gross revenue not the increased expenses associated with buying feed crops (another policy may be available for the feed crop protection-but not all feed crops have a back-up policy) that reduced profit experienced by the droughty farm. So, replacement feed prices will not be covered, while low milk prices will affect the gross revenue and, if severe enough, qualify the policy holder for an indemnity payment. Obviously the farms that raise all their feed or those that graze and thus have less dependence on purchased feed will be able to consider this opportunity with more enthusiasm. Secondly, unlike the vegetable operations, dairy farm margins are slim and the policy holder cannot insure a profit. This is not to say that this type of policy cannot help with financial commitments and add to the farm's financial stability. It should be considered by every family farmer.

To get started each farm family must evaluate their operations from a risk management point of view and determine what the effects of a major reduction in income would mean. If the family farm income were reduced by 30% would the family have enough money to buy food and could they buy insurance? If the average gross income were reduced by 25% could all the bills be paid? Would there be enough money to pay all the lenders? The list of financial responsibilities of each individual farm can grow after this consideration is given serious study. Next the family should factor in the bottom line with and without an AGR-Lite indemnity. To complete the analysis call a crop insurance agent. All this information including the location of insurance agents and the rate calculator can be accessed on the Risk Management Agency website at http://www.rma.usda.gov

If you live in a state that does not offer AGR-Lite and you want to change that; there is a process that can be followed. First the interested party should appeal to their State Department of Agriculture to apply to the Pennsylvania Department of Agriculture at 717-772-3094 (they own the policy) to start the process. The Federal Crop Insurance Corporation will approve the policy application after the state that is applying has gathered much information so the product may be "rated" for use in that particular state.

Constructing Small Farm Enterprise Budgets

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Objectives

- What are enterprise budgets
- Why use enterprise budgets
- How to design your own budget for a new enterprise
- Budget tips

What are Enterprise Budgets?

- Enterprise budgets
  - An organized listing of your estimated gross income and costs which can be used to determine the expected net income for a particular enterprise
  - Budget on a per unit basis – 1 acre or 1 animal
  - Sections include
    - Income, Costs, Profit

What are Enterprise Budgets?

- Traditional Crops
  - Very common
  - Very detailed, more accurate
    - Livestock
  - Dairy
  - Beef
- Forages
- Specialty crops and livestock
  - Less common
  - Less detailed, less accurate

Who can use these budgets?

- Agricultural producers
- Extension specialists
- Financial institutions
- Governmental agencies
- Advisors of food and fiber

Budgets are used for:

- Itemize the receipts (income) received for an enterprise
- List the inputs and production practices required by an enterprise
- Evaluate the efficiency of farm enterprises
- Estimate benefits and costs for major changes in production practices
- Provide the basis for a total farm plan
- Support applications for credit
- Inform non-farmers of the costs incurred in producing crops
- Not an exact science – Difficult to estimate drought, disease etc….

6 Parts of a Budget

- Investment
- Gross Income
- Variable Costs
- Fixed Costs
- Net Income

Budget Suggestions

- Should be prepared with specific objectives
  - Markets, establishment, soil types
- Receipts and costs are often difficult to estimate
  - Numerous, variable ie rent land
  - Be sure to have a column of your estimates
- Should contain receipts for every product and by product – processing, stalks etc
- Prices used should reflect market values and productivity of enterprise resources – i.e. land, labor, equipment

Cost Components

Variable costs –

These are expenses that vary with output within a production period

- Feed
- Marketing
- Fuel
- Fertilizer/Lime
- Disease/Insect control

Variable Costs

Some costs are easy to estimate

Seed, fertilizer, and chemicals

Some costs are more difficult

Labor, repairs and machinery

Cost Components

Fixed Costs

Fixed costs are expenses that do not vary with the level of output.

- Building costs
- Machinery costs
- Taxes
- Insurance
- Mortgage

Fixed Costs

These can also be difficult

Fixed costs need to be allocated over each enterprise

Vary because size, new, used, field operations

Land should be valued

Income (receipts)

Determine yield goals

High, medium and low

Prices

High, medium and low estimate

Net Income (=Income-Cost)

Income over variable costs

Income over variable and fixed costs

Decision making time….

Tracking Enterprise Costs

It is important to know the cost of each enterprise you have year to year

Can be by grain/livestock or tomatoes/peppers

This can easily be tracked in record keeping software

Resources http://www.agnr.umd.edu

FS-545 - Enterprise Budgets in Farm Management

Risk-Assessed Business Planning for Small Producers

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Frankfort, Kentucky
Daniel Lyons
North Carolina A&T State University
Greensboro, North Carolina
Nelson Daniels, Allen Malone and **Jeff Kock**
Prairie View A&M University
Prairie View, Texas

The Association of Extension Administrators' Small Farm Task Force under the leadership of South Carolina State University received a competitive USDA-CSREES Risk Management National Project to develop an educational curriculum on risk management for low literacy and small farmers. In 2002, this project was revised with Prairie View A&M University (responsible for the development of educational materials), North Carolina A&T State University (responsible for facilitating the project), and Kentucky State University (responsible for education, promotion and dissemination of the materials to 1890 Land Grant Extension Programs) as the collaborators, and the USDA-CSREES National Program Leader for Farm Business Management and the Southern Region Risk Management Education Center (SRRMEC) as advisors. This team chose to subcontract with Texas A&M University to convert the Texas Cooperative Extension's "Tomorrow's Top Agriculture Producer" educational materials to a manual suitable for small farmers, low literacy farmers, and 1890 Extension Programs. Prairie View A&M University worked closely with the Texas Cooperative Extension Service to develop the materials. The resulting manual is entitled "Risk-Assessed Business Planning for Small Producers." The Risk-Assessed Business Planning for Small Producers manual targets small farmer education needs including: 1) alternative farm enterprises, particularly vegetable and livestock enterprises; 2) low literacy educational materials, particularly for farm financial management decisions; 3) cooperatives, farmers markets, direct marketing, and marketing issues; 4) issues related to minority farmers; and 5) risk management education including production and marketing risks. It includes theory, lesson plans, overheads for teaching, and a case study farm.

Justification:

Agriculture varies throughout the states that have 1890 Land Grant Institutions. Ranging from small farms on the eastern seaboard, through the Appalachian and Ozark mountain regions, the Mississippi River delta, the Gulf states, to the Southwest, agriculture crosses highly erodible, karst areas, to productive flatlands, to forestlands and woodlands, to rangelands and prairies. Temperatures, rainfall, and humidity range from the colder, temperate Northeast, through areas with excellent rainfall and water resources, to the sub-tropical areas of Florida, to areas known for heat, drought, rapidly decreasing water resources, and near desert conditions. The agricultural enterprises in the region are quite diverse. Enterprises range from forages, and traditional row crops including rice, cotton, tobacco, peanuts, grain sorghum, wheat, corn, soybeans to beef and dairy cattle, hogs, sheep, goats, horses, aquaculture, bees, and wildlife, and other livestock; forestry and agroforestry to urban forestry, nurseries, and wood/forest

products; and the vast diversity of horticulture crops from apples, grapes, oranges, and other fruit crops to flowers, vegetables, turf grasses, and ornamentals. Evaluating the different climates, topographies, soil types, natural resources, and the vast range of enterprises, make 1890 multi-institutional collaboration in the agriculture area both a critical need and a major challenge.

The region's demographics show rapidly expanding diversity among its agricultural population. The region is historically known for its concentration of African-American farmers. However, it has rapidly expanding populations of Hispanic/ Latino, Middle Eastern, and Asian immigrant farmers, along with populations of Native-American farmers. The region has high percentages of women, tenant/ share-cropping, and part-time farmers. The region includes the historically lowest income, lowest literacy/educational attainment populations in the mainland U.S., most notably Appalachia, the "Ozarks," the "Black Belt," and Native-American tribal nations. The rapidly growing areas of immigrant farmers, particularly the Rio Grande Valley and southern Florida, are becoming low income/low literacy areas with language challenges and/or barriers. Small farms comprise significant percentages of the farms in the region. The region has the top five states in the numbers of small farms and the contributions of small farms to their state's economies. The numbers of small farms, the diversity of the farming populations, combined with the lowest literacy and income regions of the mainland U.S. and limited or non-English speaking populations, make the need for Extension small farm educational materials, particularly low literacy materials, and the multi-state sharing of experience and expertise of paramount importance for 1890 Small Farm Extension staff.

Because many small farmers targeted by 1890 programs produced government supported crops that were coming under political scrutiny, particularly tobacco, rice, cotton, and peanuts, risk-assessed farm planning is critical. These farmers, farm owners, and farm operators, were at risk of losing their primary, or only, source of farm income. Within these states, Extension staff needed to look at the many facets of risk management, i.e., marketing, financial management, farm management, production, alternative farm enterprises that were appropriate and affordable, enterprise diversification, value-added, farm safety, insurance for commodities and families, farm family health and stress management, and impacts on local communities and economies. In August of 2002, Dr. Don West (USDA-CSREES National Program Leader), Mr. Nelson Daniels (Prairie View A&M University, collaborator), Dr. Marion Simon (Kentucky State University, Project Developer/ Writer), Mr. Louie Rivers, Jr. (Kentucky State University, collaborator), Dr. Daniel Lyons (North Carolina A&T State University, Project Director), and Dr. Kenneth Stokes (advisor and Director of the Southern Region Risk Management Education Center, SRRMEC), met at Kentucky State University to outline the initiative.

Objectives

Objective 1**:** Small farmers make informed risk management decisions and plans for their farms thereby stabilizing their farm's net income.

Objective 2**:** 1890 Extension professionals and paraprofessionals have a uniform, system-wide curriculum for teaching risk management education to a diversity of small farmers, with a particular emphasis on low-literacy farmers.

Objective 3**:** New linkages and collaborations are developed within the 1890 Extension System.

Objective 4**:** 1890 professionals and institutions become more visible in the risk management area.

Objective 5**:** 1862 and 1890 Extension staffs use the curriculum in teaching small farmers.

Outlined Overview of the "Risk-Assessed Business Planning for Small Producers" curriculum manual

Risk-Assessed Farm Business Planning

Farm business planning develops a roadmap for the management of the operation that helps all parts of the farm to flow smoothly.

The Roles of Farm Business Planning are:

- Identify farm goals
- Inventory the farm resources
- Assess the farm business & its environment
- Analyze its past performance
- Decide on actions (What to do now)
- Implement strategies (How will you do it)
- Evaluate the farm plan (Is it working)

Step 1: Identify the Farm's Business Goals: SMART

- Specific (in what it is),
- Measurable (it can be measured and proven),
- Attainable (realistic),
- Rewarding (it moves the operation along its expected path, and
- Timely (there is a time limit to reach the goal).

Step 2: Create the Farm's Resource Inventory

- Human & Personnel
- Soils, topography, water, annual rainfall, land, buildings, fences, farm map
- Equipment
- Animals & Wildlife
- Crops
- Financial Resources

Step 3: SWOT Analysis

- Internal Strengths of the operation
- Internal Weaknesses of the operation
- Opportunities - the External business environment
- External Threats to the operation

Step 4: Farm Business Transactions

- Transactions are exchanges of resources
- Cash or Non-cash
- Inflows into the operation or
- Outflows from the operation
- For the Farm business or Personal
- Lead into Income Statement & Balance Sheet analysis

Step 5: Cash Transaction Logs for Farm Activities:

- Profit Centers: Where direct costs and returns are recorded by enterprise for products sold in the production year, i.e., cow enterprise-sell weaned calves; fresh market sweet corn enterprise
- Support Centers: Where cost are compiled to be allocated back to the enterprises, i.e., tractor fuel, finance charges, labor, rent
- Cost Centers: Where the product is not sold in the production year, i.e., cow enterprise-sell stocker calves

Step 6: Information from the Transaction Logs are used for financial analysis:

- Income Statements
- Balance Sheets
- Cash Flow Statements
- Financial Ratio analysis
- To determine the farm's financial position

Step 7: Enterprise Budgets from Transaction Logs show full cost accounting

- Income potential for the commodity
- Its Variable costs
- Its Fixed Costs
- Its Expected Net Income
- Its contribution to the farm

Step 8: Evaluating Market Alternatives

- Farmers Markets
- Roadside Stands
- Cooperatives
- Retail Markets
- Brokers
- Livestock Auctions
- Retained ownership
- Video/Tele-auctions

Latino Farmers: Characteristics and Risk Management Education Programs in the Midwest

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Introduction

The efforts of the Community Food Systems and Sustainable Agriculture Program of the University of Missouri are to increase the number of Latino producers using Risk Management tools and products. We wanted to share with the audience and readers our experience in planning and conducting three workshops on managing risks of production, marketing, financial, and legal, as well as the use of computers on the farm to manage risks. Additionally, we organized a visit with Latino farmers to the Southwest Center experiment station of the University of Missouri to see examples of risk management strategies on production and marketing on the field. We discuss the accomplishments and challenges that emerged in planning and conducting workshops and the strategies used in overcoming them. We also pointed out ideas and approaches in working with non-traditional audiences on risk management education. Finally, we are using the workshop experience to address the issue of a better understanding of Latino farmers and their needs with our partners in Extension within the states and federal agencies.

Demographics and trends

The nation has experienced a steady growth of Latino farmers in the last decades. According to Agriculture Census Data, Latino farm operators increased from 20,956 in 1992, to 33,450 in 1997, and to 72,329 (up to 3 operators/farm) in 2002. On the other hand, the U.S. lost over 86,000 main stream farmers between 1997 and 2002. In the 12 states of the North Central Region of the Sustainable Agriculture Research and Education Program (MO, IL, IN, IA, KS, MI, MN, NE, ND, OH, WI, SD) there were 3,636 Latino farms in 1997. That number increased to 7,246 in 2002 (up to 3 operators per farm) operating 2.6 million acres. Missouri, in particular, has experienced an 87% Latino producers increase from 266 in 1992 to 444 in 1997; and by 2002 the number was close to 1,000. Despite the increase in numbers, it is apparent that Latino producers are often isolated and unaware of state and federal services and programs.

A report of the Natural Resources Conservation Service of USDA (Buland & Hunt) identified various trends in Latino operated farms including:

- Numbers are increasing faster than other demographic groups.
- Average sales increased faster than most groups.
- Latino farmers with less than 5 years on the present farm have increased steadily.
- But many have not been on the farm long enough to establish long-term relationships with USDA-programs.
- Distribution of Latino farms went from a regional to a national phenomenon.
- 589 counties counted Latino farms in 1982. It changed to 1,775 counties in 1997
- There were 2,289 rural counties with a Hispanic presence in 2000 (Kandel & Cromartie, USDA-ERS).
- USDA program participation is low

Issues Impacting Latino Producers

Latino farmers not only face the same issues that their main stream peers face, but also additional, more "distinctive" challenges. In a survey conducted in 2004 in Missouri, we concluded:

- Latino farmers have little or no awareness about (and access to)

services and programs (federal, state, extension).
Latino farmers have a diversity of backgrounds and different needs. Their major concerns about farm and family include production, marketing and financial risks.
Agencies and Extension are hardly aware of Latino producers' needs.
Latino producers may be less organized than other groups.
Latino producers are harder to count because of little use of federal and state services, low response to agriculture census surveys, and different perceptions of what makes a Latino/Hispanic farmer.

In another survey conducted in Michigan, some obstacles for Latinos to farming were:

Purchasing a Farm (access to loans and capital) is a major issue.
Infrastructure Development
Technology Availability
Familiarity with Crops
Language and Culture
Participation in USDA Programs

University of Missouri Extension Programs Supporting Latino Farmers

University of Missouri Extension has various programs and projects that support Latinos and other minorities in Missouri and partners with other higher education institutions to assist and educate minorities connected to agriculture. The University's Community Food Systems and Sustainable Agriculture (CFSSA) Program serves Latino and other minority producers with training, education, information, and technical assistance in all aspects related to sustainable production and community food systems.

CFSSA launched new initiatives to serve Latinos in agriculture in 2004. One of them is the "Empowering Latino Producers Through Risk Management Education" Project funded by the North Central Risk Management Education (NC-RME) Center.

Latino producers are generally isolated from state and federal agricultural services, have no visibility, are not organized and have no political or economic leverage; hence are more vulnerable to financial and production risks than the main stream producer. In talks with agencies and Latinos in various regions of Missouri, it was apparent that Latino producers are not targeted by USDA or state programs, services, or even known by other Latinos. Information about Latino producers is minimal and exists mostly as data tables in the agriculture census website. Risk management needs, business and financial planning, production practices and farm and family priorities among many others are examples of areas not studied/researched by agencies and universities.

A typical Latino producer in Missouri operates on small to mid size scale, is not usually connected to services, nor is a member of producer organizations. Further, his or her relations to other Latino or main stream producers may be limited and because of these disconnections and relative isolation, the risks on his or her farm and family are greater than on a main stream producer. The workshops represent the opportunity to access information and education on topics of interest on their farms and families. Challenges such as language barriers and cultural differences that may prevent the targeted producers to participate in this educational opportunity have been addressed.

Objectives of the project

The outcomes of this project are expected to be Latino producers with an increased awareness, a new attitude, and a change of behavior towards the need of risk management for their farms and families. The Community Food system and Sustainable Agriculture (CFSSA) Program set the following objectives for this project:

Latino farmers will increase their awareness and interest in risk management tools.

Latino farmers will begin using risk management tools/programs including production, financial, legal, and human short after the project activities are completed. Latino farmers are more confident with the regional risk management agents and agricultural business extension educators, and better articulate their needs and interests.

Approach and methods

The project has organized three one-day bilingual workshops on risk management tools and products, and a visit to a model dairy farm (the Southwest Center) of the University of Missouri. Topics at the workshops included recognizing and assessing economic and marketing risks for the farm, financial resources and analysis, insurance products, and how to use computers to help manage risk on the farm. We encouraged through the workshops to set up individual meetings between producers and agriculture business specialists or insurance agents to discuss risk management tools/products and prepare risk management plans for the family.

Qualified extension agriculture business specialists have collaborated facilitating the risk management portion. The project director, José García, has been the language and cultural liaison between facilitators and the Latino producers. CFSSA has partnered with state wide grass roots organizations, the Missouri Farmers Union and the Social Concerns Office of the Diocese of Jefferson City to publicize the workshops and disseminate the risk management materials.

CFSSA staff will follow up and assist with further information and referrals a few months after the workshops. The project can be expanded to Latino producers in the same and other regions and new workshops could address additional risk management issues for Latino farmers.

The success of the project will be measured by the increase in Latino farmers understanding and using risk management tools and products. The project has used (and will continue to use) pre-test and post-test tools, phone and email communications with participants and instructors as means of verification. Finally, it is expected that this project will help extension and insurance agents be aware of Latino producers' needs and offer appropriate programs and services.

Challenges and accomplishments

Organizing and conducting the workshops for Latino producers have proved to be a challenging and rewarding experience. Some accomplishments were:

Workshop topics were well received
Knowledgeable presenters
Positive evaluations
Bilingual workshops and materials
Interest in more training and additional meetings/materials

We also faced some challenges that made us realize the complexity of serving an underserved population. The most important challenges were:

Low turn out
Competing with farm activities
Hard to persuade farmers to go far away from home and overnight
Low interest in establishing a network
Simultaneous interpretation

Final thoughts

Although the project hasn't finalized yet, we believe that the training provided had a positive impact on Latino farmers. Two additional workshops on risk management are being planned and, if funding allows, another farm visit. Furthermore, because of the importance of the project and the potential impact on Latino farmers, we will develop (with funding from the North Central Risk Management Education Center) a "Business Planning Guide" in English and Spanish for minority producers in 2006.

The Movable School Approach to Farm Futures (Ethiopia's Teff)

Edgar Hicks
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Many farmers market their grain production at harvest with no underlying knowledge of any of the discovery factors that make up their farmgate price. They also may not understand the relationship in grain marketing between cash and futures (basis) which is a party to every contract made with a commercial grain company. For black grain farmers the penalty for this lack of marketing nomenclature has been traumatic.

This presenter was introduced to agriculture by summer visits during high school to grain and cotton producers in the U.S. Department of the Interior's National Heritage Area of Cane River, Louisiana. After a thirty year career with international grain firms there was a desire to share the acquired grain marketing experience with high school families. Unbelievably, none of the Cane River families are currently engaged in farming!

The only remaining black community of farmers in the Midwest is Nicodemus, Kansas, and Kansas is without an 1890 Land-Grant Institution. Inspired by reading the 1936 book published by The Tuskegee Press, The Movable School Goes To The Negro Farmer, the idea for incorporating the names of Booker T. Washington and George Washington Carver into sustainable price risk management format was incubated.

Recognizing the colloquialism of early 1900s, there seems to be a useful place at the table today for the spirit in which Thomas M. Campbell (the USDA's first extension agent) wrote his biography.

The KBFA feels price *risk management education* (RME) should draw from some part of the following Campbell historical commentary (page 82):

"Let us now consider the first annual Negro Farmers Conference, which was held in February, 1892, and out of which grew the present agricultural extension work among Negroes.*

*To Dr. Washington's surprise this first conference brought five hundred farm people to Tuskegee Institute. To this gathering many came afoot. Great numbers, in order to be on time for the opening session, left home as early as midnight prior to the meeting, in various types of vehicles and conveyances, including wagons drawn by oxen. At this and subsequent conferences, Dr. Washington always conducted the program and discussions in such an informal and simple manner that farmers were assured of their welcome to the school and readily made to feel that they were an integral part of the meetings. Usually someone was called upon to lead an old time plantation melody. Soon all present joined in, humming, nodding, and softly patting their feet. Many times when the climax of a spiritual was reached, the atmosphere was surcharged with that oneness of spirit which so completely characterizes the Negro rural church gathering. The constraints of fear and self-consciousness were swept away, and kindred souls felt only the stir of emotion which served to open their hearts and minds to the inspiration that was to follow. Dr. Washington, in his tactful way of approaching the most ' **delicate subjects'**, would launch into his program, calling the attention of the people to the '*

***vital facts affecting their lives'**, without offending or embarrassing them."*

The "delicate subject" and "vital fact" for the KBFA's presentation is: marketing grain as a commodity (with no farmer control of price, {input/output}) is not in the best interest of community, family, and rural development! Having said that, we trod on, presenting the KBFA's version of RME in a Movable School manner, while moving the Nicodemus community towards a sustainable agri-tourism format connected to its designation as a National Historic Park Site.

We are doing this in two ways: For current "Farm Futures" commodity education we are embracing the farm marketing business of Mrs. Ida Hurley of Charleston, Missouri (Hurley and Associates). This decision is based after recognizing the applicability of Mrs. Hurley's early *mission statement: The application of sound Christian principals to achieve positive results for the client's farm enterprise; It is a belief from within, not a behavioral attitude to learn:*

- *The Law of Use*
- *Accountability*
- *Reciprocity*
- *Perseverance*
- *Service*

"The Movable School" approach is the future direction of community which the KBFA seeks to sustain. We are embracing the Ethiopian grain (grass) teff as the most significant valued-added crop the Nicodemus community can grow to reach 'self determination'. Teff can be our bridge to a cultural connection, water conservation, medical, health, nutrition, animal feed, and an area that has not been invaded (currently) by multinational niche destroyers.

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Agricultural Law: What Every Small Farmer/ Rancher Needs to Know

Janie Simms Hipp Rogers
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Legal Issues

What we don't know can hurt us; Prevention is the key; Try not to ever need a lawyer; Planning is critical; Courage to examine your situation; If you need a lawyer, be prepared; Time; Money; Emotional

Farmers, ranchers and rural citizens need to know and think about legal issues relating to: Their Personal Lives; Their Professional Lives Both In & Out of Farming; Their Communities; Aspects of Legal Issues – Local, State, Federal

Personal & Professional - First, are your affairs in order? - Have you planned for your operation? - Short term, Long term, After you are gone - What about Property issues - What about Contract Issues - Injury/harm/tort issues - Environmental issues - Emerging issues, Property issues, Boundary lines – where are they? - Title issues – do you know where it is? Could you find it in a pinch? - Fences – fence disputes are still very popular conflicts – good fences make good neighbors - Adverse possession – what is the time period in your state for adverse possession of your property…what must be proven - In all 50 states a trespasser can acquire ownership by continuously occupying a parcel of land until the statutorily set period of limitations runs out.

Liability related to your property – when you allow individuals onto your property – do you know what the law is in your state - Your duty of care owed to those coming onto your property - What this realistically means - Transfer of ownership of your operation - How to do this - Who to transfer to and under what circumstances - Terms of transfer - Acquisition of new lands for your operation - What's been there - May be acquiring environmental liability

Contract Issues - How to form a contract – offer & acceptance still the rule –can be written, can be verbal - Who can enter into a contract & regarding what types of issues - What types of contracts must be in writing - How do breaches of contracts occur - What happens when someone breaches the contract – remedies – damages – what are the rules in your jurisdiction - What types of relationships involve contract issues - Warranties when you sell products

When you advertise your product as having certain characteristics – you are creating a warranty - If the product doesn't have those characteristics, you may have breached your warranty - Express warranties – can be verbal or written - Implied warranties – fitness for general purposes; general merchantability; fitness for particular purpose - How to disclaim warranties

Injury/harm/tort issues - Negligence – setting in motion, through less than careful behavior, a chain of events leading to harm to another - Trespass – coming on to another's property and interfering with their quiet use and enjoyment of their property

Nuisance – common agricultural-

related harm - public nuisances and private nuisances - Flies, dust, noise, odor common – regardless of size - Harm to employees – commonly caused by failure to maintain safe working environment or employ or properly train co-employees - Harm to third parties – your liability for harm caused to third parties - Harm to another's property

A tort is a civil wrong or injury - Does not involve breach of contract disputes - Generally, tort law is judge-made law - In all jurisdictions tort law changes as new cases are decided - Much change in 20th Century (esp. post-1950) - Tort law is concerned with substandard behavior; its objective is to establish the nature and extent of responsibility for tortuous conduct

General areas of tort law:
Intentional torts -Liability regardless of fault - Privileged torts; Negligent torts (90% of all tort cases) - Fault-based system; The line between intentional and negligent torts is one of degree - Intent is a desire to bring about a result which will invade the interests of another in a way that the law forbids; A person may be held liable for any resulting injury although intending nothing more than a good-natured joke, or honestly believing that the act would not injure the plaintiff, or acting under the belief that it is for the plaintiff's own good

Trespass - A trespass consists of two basic elements: Intent - Plaintiff must show that the trespasser either intended the act that resulted in the unlawful invasion or acted negligently or in a dangerous manner. Force - Any willful act, whether the intrusion is immediate or an inevitable consequence of a willful act. Intentional interference with real property - Every possessor of land must use the land so as to avoid injury to possessory rights of neighbors - Conceptually similar to nuisance

Intentional disparagement of food products- Common law -Many states recognize a claim for tortious interference with business relations - State legislation - Designed to protect perishable food products from false and malicious statements - Based on belief that perishability makes market value of food products vulnerable to false statements - Common law approach believed to be inadequate - Statutes in 13 states

Access to Land – Liability for torts that occur on your land - The traditional approach created a hierarchy of status based upon the benefit the entrant bestowed upon the owner or possessor - Invitees and child trespassers - Social guests and licensees - Adult trespassers
Hierarchy of status approach - Adult trespasser - Owner or possessor only has duty to refrain from willfully or wantonly injuring; Child trespassers -Attractive nuisance ("turntable") doctrine - If a landowner has a reasonable expectation that children will be attracted to the premises by a dangerous artificial condition, the "attractive nuisance doctrine" applies - The child is treated as a licensee or invitee
Child trespassers -Farm ponds - Usually are held not to be artificial conditions (doctrine does not apply unless child is invitee) - But, items associated with farm ponds can be attractive nuisances - Remoteness may be the key factor - Swimming pools are likely to be attractive nuisances
Child trespassers - Reach of the attractive nuisance doctrine - Smoldering ashes - jury question; Top-heavy newspaper stand - jury question; Large machine with exposed gear wheels - jury question; Rain-filled ditch on construction site - jury question;

Extra rails stored beside railroad track – no; Partially uprooted dead tree – no; Septic tank – no;
Licensee - Anyone on the premises with permission or acquiescence, but does not bestow a benefit on the landowner - Hunters with permission who do not pay a fee - Other than the duty of the landowner to notify of hidden dangers, the licensee takes the premises as is.
Social guest - A person on the premises who does not confer an economic benefit, but does confer a social benefit - Landowner must exercise reasonable care to maintain the premises
Invitee - A person on the premises for business purposes or for mutual advantage rather than solely for the entrant's benefit - Invitees include such persons as milk truck driver, cattle buyer, veterinarian or employee - Landowner must make and keep the premises safe and warn of existing dangers
Modern approach to tort liability of land owners and occupiers - The modern approach is a movement away from basing an owner's liability on the status of the entrant. - Ordinary negligence under all of the circumstances - Does this mean you must take steps to limit entrance to your land? - What types of steps should you take to ensure safety to all?
Modern approach to tort liability of land owners and occupiers - Eleven states follow the California approach - Eleven other states retain the common law duty regarding trespassers and all other unlawful entrants, but utilize a standard of reasonable care for all lawful entrants - Move toward reasonable care approach to all – valuing human life over property
Landlord is generally not liable for injuries to third parties that occur on leased premises unless: - Landlord conceals dangerous conditions or defects that cause injury; - Conditions are maintained on the premises that are dangerous to persons outside the premises; - The premises are leased for public admission; Landlord retains control over part of the leased premises that the tenant is entitled to use; Landlord makes an express covenant to repair the leased premises, but fails to do so and injury results; Landlord negligently repairs items located on the premises
Recreational use of land - Model Act (1965) - Limits the liability of persons making their rural land available to the general public for recreational purposes - Includes roads, waters, water courses, private ways and buildings, structures and machinery or equipment when attached to realty - Includes activities such as hunting, fishing, swimming, boating, camping, picnicking, hiking, pleasure driving, nature study, water skiing, water sports and viewing or enjoying historical, archeological, scenic or scientific sites
Recreational use of land - Recreational users given no higher status than trespassers - Owners not shielded from willful or malicious failure to guard or warn against a dangerous condition, use, structure, or activity - The Model Act does not provide liability protection if the owner charges a fee - Some states have modified this point - Requires careful drafting of release forms
90% of all civil cases relate to negligence - The negligence system is a fault-based system - Links in the chain of negligence - Duty (reasonable and prudent person standard) – Breach – Causation – Damages Reasonable foreseeability - The plaintiff's harm must have been a reasonably foreseeable result of the defendant's conduct at the time the conduct occurred. - Reasonable foreseeability is the

essence of proximate cause - Liability is imposed only for harm that is reasonably expected to result from the defendant's actions - A causal connection must be present between defendant's action and plaintiff's harm - Act of nature - Real question is whether an act of nature was the proximate cause of the damage - Reasonable foreseeability is the key -Guest statutes - An owner or operator of a motor vehicle is typically excused from liability for injuries suffered by nonpaying guests riding with the driver unless the driver is intoxicated or reckless - Nonpaying guests assume the risks associated with ordinary negligence - Many states' statutes have been declared unconstitutional - Rendering aid to persons in peril - No legal requirement to render aid - If aid is rendered carelessly, person providing aid can be held liable for any resulting damages - Once aid begins, the duty is to continue until a replacement comes or the aid otherwise becomes unnecessary Good Samaritan laws - In many states, a person rendering assistance is generally only liable for injuries resulting from willful intent or recklessness - Higher standard of care applies to those compensated for rendering aid - Still no affirmative duty to render aid, however
Manufacturers Products Liability - Much change since the 1960s - Recent trend is toward strict liability - Very favorable to plaintiffs - Insurance costs have skyrocketed - Proposed federal legislation (1998) - Replace state product liability laws with uniform federal standards - Punitive damage awards capped at $250,000 in cases involving small businesses - Total defense if plaintiff under influence of alcohol or other drugs and impaired condition was principal cause of harm - 18-year statute of repose - Legislation inapplicable to cases involving tobacco or silicone breast implants Injured party must prove five elements to recover on a product liability claim - Defendant sold the product and was engaged in the business of selling the product; Product was in a defective condition; Defective condition was unreasonably dangerous to ordinary user during "normal use"; Product was expected to and did reach the user without substantial change in condition; and Product proximately caused plaintiff's injury

Nuisance - An invasion of an individual's interest in the use and enjoyment of land rather than an interference with exclusive possession or ownership of the land

Two interrelated concepts: Landowners have the right to use and enjoy property free of unreasonable interference by others - Landowners must use property so as not to injure adjacent owners

Nuisance law is rooted in the common law and has been developed over several centuries as courts settled land use conflicts. Nuisance law is always changing - Legal rules vary between jurisdictions

Nuisance law is important to agriculture because of the noxious odors produced by many farm operations

Two primary issues in every ag. nuisance dispute: Whether the use alleged to be a nuisance is reasonable for the area; Whether the use alleged to be a nuisance substantially interferes with the use and enjoyment of neighboring land

"Nuisance" and "negligence" are not the same thing. Operating a farming or ranching activity properly and having all requisite permits may still constitute a nuisance if a court or

jury determines the activity "unreasonable" and causes a "substantial interference" with another person's use and enjoyment of property. Every case is dependent upon the particular facts of the case and the legal rules used in the particular jurisdiction

Nuisance - factors for consideration: Whether the use complained of is common to the area; Whether the activity is a minor inconvenience or is a regular and continuous activity; The nature of the property; Whether the activity substantially interferes with the plaintiff's land use; Whether the activity is vital to the local economy; Whether the complained-of use pre-dates the plaintiff's use

Remedies - Courts have the power to fashion a remedy to fit the particular circumstances of the situation - Award monetary damages - Issue an injunction - Order the defendant to cease the offending activity - Can be either a temporary or permanent injunction.

Private nuisance - A civil wrong based on a disturbance of rights in land for which a remedy lies in the hands of the individual whose rights have been disturbed

Public nuisance - An interference with the rights of the community at large with the remedy lying in the state's hands

Right-to-farm laws - Priority of location and reasonableness of operation - Farmers and ranchers satisfying legal requirements have a defense to nuisance actions - Basic idea is that it is unfair for a person to move to an agricultural area knowing the conditions which might be present and then ask a court to declare a neighboring farm a nuisance

Types - Nuisance related - Farming protected only if it has been in existence for a specified period of time; Restrictions on local regulations of agricultural operations ; Prevents local and county governments from enacting regulations or ordinances that impose restrictions on normal agricultural practices

Ag districting type statutes (Iowa) - Ag operations located within a designated area immune from nuisance laws if conducted properly - Property rights of those outside ag area must be considered.

Exemptions from zoning activities - Major issue is whether the ag activity is an ag use or a commercial activity - Most state statutes define "agricultural use" broadly (Ex. Illinois statute) - Seven acres used to board 19 show horses - Poultry hatchery on 3 acre tract - 60 acres used to store sewage sludge for later use as fertilizer - Not a mobile home on ag land - Raising of hogs in any quantity

- Cases historically involving nuisances and farming operations – Odor – Smoke – Dust – Flies – Noises - Regardless of size or type of operations – only recently have nuisance cases involved larger CAFO type operations

Employer's liability for employees injuries - Two separate legal systems - Common law system - Negligence-type approach; Workers' compensation system - An employee injured on the job is entitled to a statutorily prescribed amount; Exclusive remedy for loss from injury or death of a covered worker - Applicable to migrant workers

Common Law System - The employer bears certain common law responsibilities; Provide reasonably safe tools and appliances - Provide a reasonably safe place to work - Warn and instruct the employee of dangers which employee could not reasonably be expected to discover - Duty to fix a problem and warn subsequent employees of potential

danger - Provide reasonably competent fellow employees - Make reasonable rules for employee conduct

Common Law System - Duty to hire reasonably competent fellow employees - Failure to exercise reasonable care in the hiring of employees exposes the employer to liability for any injuries a particular employee causes to fellow employees - Failure to fire upon learning that an employee is incompetent also may subject an employer to liability - Duty to make reasonable rules for conduct of employees - The extent of the duty depends upon the employment situation - An employer's common law defenses: No duty was breached, Assumption of risk (Most courts refuse the defense if the employee must choose between submitting to the danger or getting fired; Contributory negligence; Employee's voluntary submission to risk must be unreasonable; Negligence of a co-employee (Employer must exercise due care in selecting employees)

Child Labor - All states have statutes defining what constitutes illegal or impermissible child labor - Generally in age categories - Generally all types of activities involving dangerous activities - Exemptions for your own family - Your neighbors' kids do not meet the definition of your family under the law – regardless of how close you might be!

Emerging Issues - Changes in tort liability - Tort reform - Limitations on $ damages - Still big issues around the country - Piercing the corporate veil

Right-to-farm challenges - What is a "right-to-farm" statute – protection against nuisance suits filed against agricultural operations - Constitutionality of provisions - Continuing legal challenges for right-to-farm statutes

New marketing opportunities – legal issues

Direct marketing - Warranties on products – what does it mean in a contract sense when you say "organic" or "natural"

Liability of farmers market boards & members – food safety issues related to food products sold on the market

Liability of the farmer for those entering his operation to "u-pick" – harm to those who enter to pick or harvest - Historically, insurance policies exclude coverage for "u-pick" operations - Insurance coverage – do you need it? Can you find it? Post-Katrina impact?

Cooperative marketing opportunities
Relative rights, duties & responsibilities of cooperative board members and just plain members of cooperatives
Breach of contract to sell to or market with the cooperative

Environmental Issues - Water
Point and non-point source liability for water pollution – exposure to the farming continues to rise – exposure continues to look at smaller and smaller operations
Clean Water Act – NPDES permit requirements - Liability for failure to obtain necessary permits - Do you need a permit? - Smaller and smaller animal ag operations will need permits in the future
Wetlands – what happens when you disturb a wetland?
Storm water regulation – where is the operation in relation to municipalities – do you need a permit for your activities disturbing land/water?
What steps are municipalities taking to address land use issues and permit requirements in your area? Where is your operation in

relation to water?

Other environmental issues - Endangered Species Act requirements – exposure for taking - permits for taking species– liability for failure to obtain a permit; Emerging Clean Air issues – drift, particulate matter, ammonia; Pesticides – labeling compliance, certification of applicators; Toxic chemicals, hazardous substances, CERCLA liability

These issues may not be of primary concern to you, but the general shift is to require smaller and smaller operations to seek, obtain and report against permits

Larger picture - emerging international frameworks for addressing environmental concerns Drift & Air

Water and Water Rights Issues

Availability of Water will continue to be an issue in many states - concerns regarding availability and use of water emerging throughout the south and southeast; Water Quality continues to be an issue; Permits/regulations controlling use and availability of water; Specially identified areas of a state in which water is critical or water quality is impacted – do you know where you are in relation to those areas?

What you don't know can hurt you - What you don't think about can hurt you - Preparing for the future is key to success and longevity of any operation

Just because we are in sustainable or organic enterprises, doesn't mean we aren't regulated now or won't be regulated in the future - Smaller and smaller animal operations under scrutiny - Food safety pressing onto the farm and into the small markets - Animal identification is coming regardless - Even though we "have a relationship with our customer/consumer" we might still be sued - You don't have a relationship with the medical or personal or property insurance carrier of the consumer - Already circumstances where lawsuits have occurred even though the consumer/customer expressed their support for the producer - Must think of your operation and your activities in the broader world and realize that the broader world may not hold the values you hold - Bottom line – litigious society – until that changes, all farmers and ranchers are exposed to legal liabilities - Plan accordingly…don't stick your head in the sand…

Excellent additional sources: Principles of Agricultural Law, McKeowen & Harl (published by Ag Law Press); www.aglawpress.com; Agricultural Law, Nutshell (published by West Legal Publications).; www.nationalaglawcenter.org - Reading Rooms on various subjects - Reference Desk online; Updated bibliographies; Missouri Ag Law Center & Drake Ag Law Center.

PACA – A Tool for Growers

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Producing a crop of fruit and vegetables is only half the job. The rest involves marketing. Too often, however, growers encounter a myriad of difficulties when selling and marketing their produce. Some of the more common dilemmas include buyers who arbitrarily "clip" invoices—or don't pay at all; loads that get rejected at destinations without justification; and sales agents who do not properly account for sales and expenses. Any of these problems can put a grower's entire business at risk.

The Perishable Agricultural Commodities Act, or PACA for short, protects growers, shippers, distributors, and retailers dealing in fresh and frozen fruits and vegetables by prohibiting unfair and fraudulent trade practices, and by providing a forum that growers and others can use to settle commercial disputes. PACA is administered by the U.S. Department of Agriculture and is funded almost entirely by license and complaint fees that are paid by companies that buy, sell, or broker commercial quantities of fruits and vegetables. This license requirement is what makes the law so effective. USDA can suspend or revoke the license of firms that don't abide by the law, and hold them liable for any damages that result. Naturally, the type of penalty issued depends upon the seriousness and nature of the violation.

Dispute Resolution

If a grower encounters problems getting payment from a buyer, or believes that they have suffered damages resulting from unfair trade practices, they should contact a USDA-PACA Branch office to discuss the matter. PACA Branch representatives provide expert, unbiased assistance—whether this involves interpreting a contract term, analyzing an inspection result, or merely providing advice regarding a firm's rights and responsibilities. Frequently, timely guidance is sufficient to avoid any further action. There are instances, however, when disputes are not so easily settled. In those cases, a claim must be filed with a PACA office.

To file a claim, a grower must simply submit a letter to any PACA Branch office outlining the nature of the complaint and the identity of the firm filed against. Along with the letter, the PACA Branch office will need copies of any supporting evidence such as invoices, broker's memoranda of sale, accountings, or other paperwork. Also, a claim must be filed within 9 months of the date that payment became due, or the date that performance of the contract was required. The cost of filing a claim is $60.

Once the PACA Branch office receives a complaint, they will gather the relevant facts from all parties involved in the dispute and assist in reaching a settlement. The PACA Branch handles more than 2,000 such cases each year and resolves about 75 percent of these claims informally, generally within 8 weeks. However, if informal settlement is not possible, USDA will issue a binding decision and order. Although it costs an additional $300 to obtain a formal ruling, this fee can be recovered from the other party, if the grower prevails.

Sales Agents

Many growers hire sales agents to sell and market their crop. Although arrangements vary, agents typically receive a percentage of the sales price as their commission, and may also be entitled to deduct other expenses. The PACA requires that agents outline the duties and responsibilities of

both parties in writing before the first lot is received. In addition, agents must issue accurate accountings documenting the sales prices obtained and the expenses deducted from each transaction. Agents are generally required to submit these accountings in 10-day intervals throughout the season, and must promptly pay the net proceeds due once payment is collected. If a sales agent has not met its responsibilities, a grower should speak to a PACA Branch specialist. If necessary, a claim can be filed and a PACA Branch representative will audit the agent's records to determine whether any additional proceeds are due.

Mediation Service

Mediation is an effective way to resolve disputes, since it places the resolution of the dispute directly in the hands of the interested parties. It provides an outlet for settling differences outside of the legal system, strengthens business relationships, and provides a forum where both parties can air their differences in a neutral atmosphere. All PACA Branch personnel that handle disputes are trained in mediation, and can mediate a dispute upon request provided both parties are agreeable. Mediation sessions can be held face-to-face or over the telephone. Furthermore, there is no additional cost to mediate a dispute beyond the initial $60 filing fee. To obtain more information about this service, or to arrange for mediation of a dispute, contact any PACA Branch office.

Trust Protection

PACA's dispute resolution and mediation services are important tools that produce businesses can utilize to resolve disputes that sometimes occur between trading partners. But what recourse is available when a customer goes out of business or files bankruptcy? The PACA trust provision requires that dealers maintain a statutory trust on fruits and vegetables received but not yet paid for. In the case of a business failure, the debtor's trust assets are not available for general distribution to other creditors until all valid trust claims have been satisfied. Because of this, suppliers that file for trust protection have a far greater chance of recovering money owed them when a buyer goes out of business.

To preserve trust rights, the PACA requires that a seller, within 30 days from the payment due date, provide to the debtor a written notice stating the intent to preserve trust rights, including in the notice information about the unpaid transaction. Since specific information is needed for the notice to be valid, it would be wise to call a PACA Branch office and speak with a representative before preparing a notice. The requirement for providing written notification to the debtor applies to all who want to preserve trust rights, whether they are a PACA-licensed firm or an unlicensed grower.

If a seller has a PACA license, however, the law allows for the automatic filing for trust protection simply by including the following wording on the invoice:

> "The perishable agricultural commodities listed on this invoice are sold subject to the statutory trust authorized by section 5(c) of the Perishable Agricultural Commodities Act, 1930 (7 U.S.C. 499e(c). The seller of these commodities retains a trust claim over these commodities, all inventories of food or other products derived from these commodities, and any receivables or proceeds from the sale of these commodities until full payment is received."

The PACA law is here to ensure fairness and offers many services to assist. For additional information, call any PACA Branch office or visit our website address at http://www.ams.usda.gov/fv/paca.htm.

Tucson, AZ: 1-888-639-0575
Manassas, VA: 1-888-639-9236
Ft Worth, TX: 1-888-901-6137

Heart of the Farm; Women in Agriculture

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During the late 1970s and early 1980s, University of Wisconsin-Extension (UWEX) sponsored educational programs specifically for farm women. These programs targeted women who helped manage their farming operation. Unfortunately, these programs were abandoned. Two reasons are thought to have contributed to the end of programs for farm women: (1) a lack of leadership in UWEX for these audience specific (versus topic specific) educational programs, and (2) the move of farm women to seek off-farm employment to supplement incomes and provide insurance benefits for their family. Adding off-farm employment to their workload made juggling their various roles even harder. Participating in the existing Extension educational programs fell off their "to do" lists. *Heart of the Farm – Women in Agriculture* is an attempt to reach this underserved audience of UW-Extension agriculture programming.

Three things happened to make Heart of the Farm in Wisconsin possible. (1) The Program on Agricultural Technology Studies (PATS), UW-Madison, published its research, **The Roles of Women on Wisconsin Dairy Farms at the Turn of the 21st Century.**[1] This research indicates that most farm women are responsible for the financial record keeping on their farms and also share in the decision-making to borrow money and/or expand their operations. At the same time, many women were taking off-farm jobs and the number of farms was decreasing. This demand for their time coupled with the lack of contact with others who understand the complexity of farm life created a feeling of social isolation for many farm women. (2) The second piece of the puzzle fell into place when a core group of UW-Cooperative Extension professionals were interested in developing programming for women involved in agriculture. As a result, two female county-based UWEX agricultural agents and four University of Wisconsin campus-based faculty/staff formed a steering committee to develop this project. (3) The final factor was funding. A series of small grants made it possible to conduct two pilot workshops.[2] Information gathered from pilot evaluations and a follow-up focus group provided information that was useful in developing the program and seeking additional funding to expand the program. In 2003, a grant from the North Central Region's Risk Management Education Center supported four *Heart of the Farm – Women in Agriculture* Conferences that were held throughout Wisconsin. The purpose of *Heart of the Farm* is to address the needs of farm women by providing education on pertinent topics, connecting them with agricultural resources, and creating support networks.

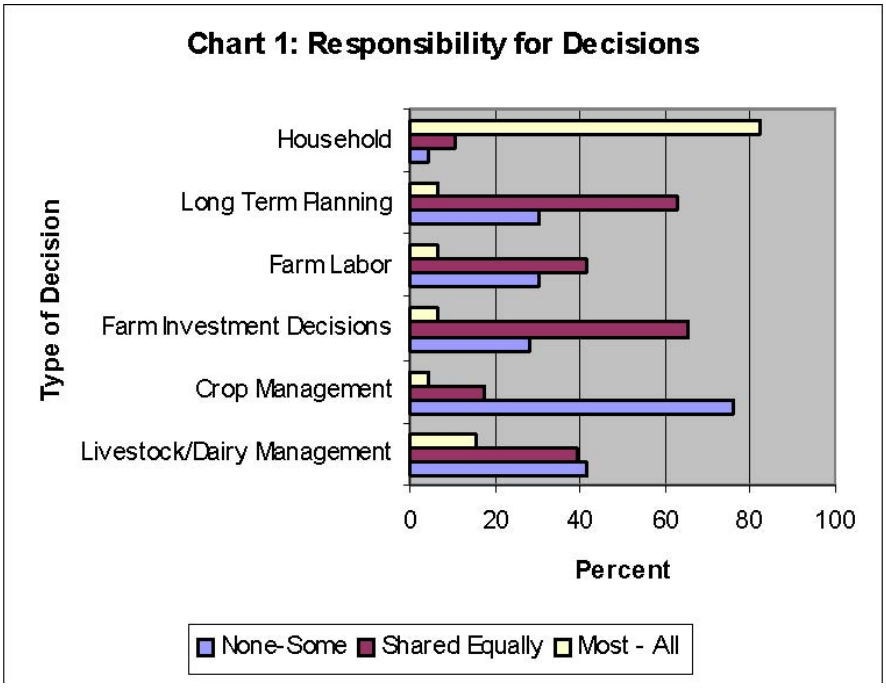
Heart of the Farm Participants

Six *Heart of the Farm* (HOF) conferences were offered at various sites throughout the state during 2002-2003: Jefferson, Ladysmith, Eau Claire (2), and Richland Center (2). Over 150 women attended these conferences. Almost two-thirds (62%) of the participants were between 35-54 years of age, with an equal number of younger (18-34 = 18%) and older (55 or older = 20%) participants. More than 1 in 3 women indicated they worked off-farm. The average number of hours engaged in off-farm work was 30 hours per week. This means that for most of these women (89.4%), off-farm work constituted more than a part-time job. As might be expected in Wisconsin, the majority of women who participated in HOF came from dairy farms (58.7%). The

remaining 40%+ were involved in other enterprises – beef, grain, hogs, other – or a combination of enterprises.

Women are Involved in Major Farm Decisions

As indicated by Chart 1, women are involved in all of the major decisions that are made in their farming operations. The majority of women are responsible for almost all of the decisions related to the household (93%), however, these women are least involved with decisions about crop management. What is most interesting is that these women are most likely to be part of the decision making in areas that relate to long-term planning and farm investments. And to a slightly lesser degree, they influence the decisions that relate to farm labor, and livestock or dairy management. Farm women were also asked how they would describe their involvement in the decisions that were made on the farm. More than one-half (57%) said that they were "very involved." Another one-third (30%) said that they were "involved to somewhat involved". Only 2% said that they were "not involved at all" in farm decision making.



'Women's Work' on the Farm
Similar to their involvement in the farm decision-making, farm women play a crucial role in the farm tasks that they perform. The contribution that women make to their farming operation is often overlooked. 'Women's work' includes farm work, household tasks, and for some, off-farm work as well. When asked how they would describe their involvement in the day-to-day farm tasks, almost two-thirds of the respondents said that they were "very involved" (61%) and another 22% said they were "involved." Less than 5% said that they were "not involved at all."

'Women's work' on the farm is divided into three main categories – bookkeeping/marketing, manual labor, and machinery/field work. While farm women are involved in a variety of tasks they are most likely to be involved in bookkeeping /marketing and work that requires manual labor and less likely to be involved with machinery/field work. The majority of women (85%) "regularly" and "sometimes" do the farm bookkeeping and bill paying. Because of their close connection to and understanding of the farm business finances, women's involvement in the decision-making for their farm operation is critical.

On farms, women do a variety of manual labor tasks that range from running errands to rock picking. Much of the work revolves around feeding and taking care of the livestock. The most common tasks that women regularly or sometimes perform are: (1) running errands; (2) caring for young stock; (3) milking cows / cleaning after milking; (4) feeding livestock; and (5) picking rock.

Women are the least involved in work related to machinery /field work. Many share the responsibility for haying (70%) and harvesting crops (59%).

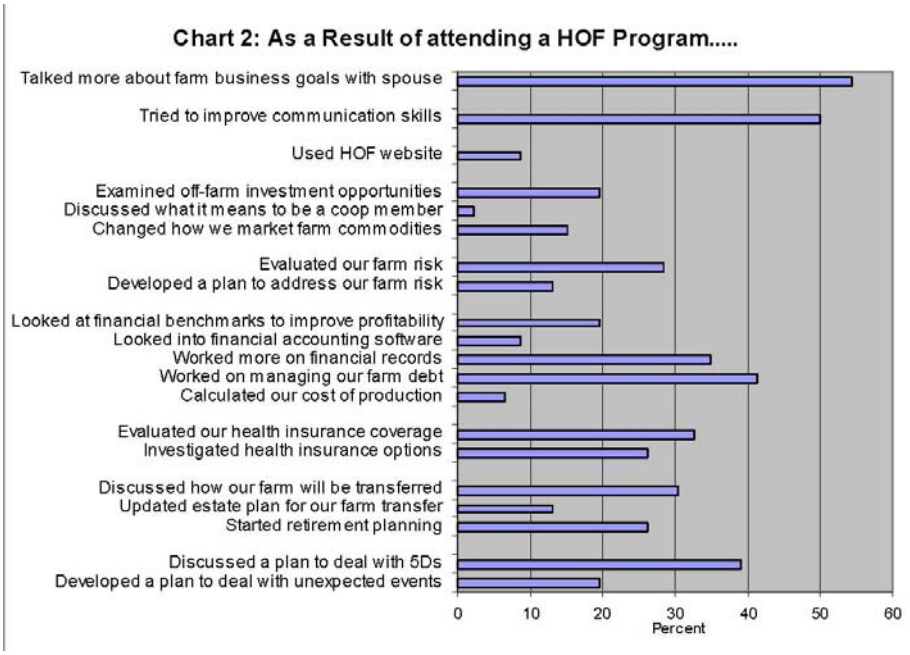
Women's Changing Roles in the Farm Operation
Regardless of the long hours and multiple tasks that women do in their farming operations, the majority (82%) indicated that they are satisfied with their responsibilities. However, 3 out of 5 (60%) said that they see their responsibilities changing. For some, those changes are related to physical changes or health reasons that affect their ability to perform the farm work. For others, it is related to off-farm employment that takes away time that would be available for on-farm work.

For most, however, the changes were related to major transitions in the farm operation. These transitions covered a wide range — "working a son into the business," transferring the farm from one generation to the next, retirement, and expansion of milking herd or other livestock.

Regardless of how their farming operation was changing, women see financial information as a key component in making that transition. Financial information needs include record keeping, taxes, marketing, retirement planning, and farm transfer.

Heart of the Farm Motivates Changes in Managing Farm Risk
As shown in Chart 2, farm women indicated that they used what they had learned at a HOF program to address many of the risks that they face in their farming operation. Not only did the program participants gather information, but in many cases, they applied this new knowledge to manage a risk in their farming operation. For example:

1. Participants not only "*Discussed* a plan to deal with 5Ds" they also "*Developed* a plan to deal with unexpected events" or,
2. They "Discussed how our farm will be transferred," "*Updated* estate plan for our farm transfer," and then *"Started* retirement planning."



But farm women want more…
Input from farm women is essential in guiding the selection of program topics. Through focus groups, program surveys, and follow-up evaluations, farm women have indicated the topics that would be useful in managing risks on their farm. They include: production issues, government and law, financial management, health issues, marketing, long-range planning…to name a few. Women are integral to each of their farm operations. Providing farm women with the tools and skills to perform their tasks will benefit all of agriculture.

UW-Extension responds to farm women's requests
The one-day *Heart of the Farm* workshops continue to expand into other regional locations throughout Wisconsin. Six workshops were offered in 2004 and four were conducted in 2005. Four are planned for the 2005-06 winter programming season. In addition to continuing the one-day *Heart of the Farm* workshops, UW-Extension provided focused educational sessions on the topics for which the women requested more information. Three sessions that focused entirely on health care issues were offered in locations near the workshop sites. These health care sessions gave the women more in-depth information and more time to network and discuss their own struggles and issues.

As noted earlier, many farm women take on the responsibility of recordkeeping for the farm business and because of this role, the women requested more workshops on record keeping software. In response, the UW-Center for Dairy Profitability provided three hands-on workshops in computer labs introducing farm women to two financial recordkeeping programs, QuickBooks™ and AAIMS®.

In 2004, UW-Extension introduced a new educational program called *Annie's Project* to WI farm women. *Annie's Project* is a farm women's risk management program developed by University of Illinois

Extension Educator, Ruth Hambleton. *Annie's Project* allows women to learn about risk management through a small group setting in five sessions (over a six week period). Not only does this allow for extended contact with educators, but it provides the opportunity for networking among the women. One *Annie's Project* participant noted, "Farmers don't play cards on Saturday nights anymore. We need this program to network with our neighbors." As families change the way they spend their free time, many times focusing on entertainment within their own homes or sporting events involving their children, the connection with their neighbors diminish. Providing farm women the opportunity to participate in programs that are pertinent to their farm business *and* network with their peers and neighbors may alleviate some of the isolation that many farm families and especially farm women face.

For more information about *Heart of the Farm*, visit: www.uwex.edu/ces/heartofthefarm

[1] Vogt, Jennifer; and Douglas Jackson-Smith, Marcia Ostrom and Sharon Lezberg. November, 2001. "The Roles of Women on Wisconsin Dairy Farms at the Turn of the 21st Century," PATS Research Report No. 10. Madison, Wisconsin: UW-Madison.

[2]A Women's Challenge Grant from the North Central Region's Risk Management Education Center (NCR RMEC) as well as funding from the Cooperative Foundation and CHS Cooperative Foundation supported the two pilot programs.

Crop Insurance Overview

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By definition insurance is the means of protecting against unexpected loss. Everyone has insurance; either you buy insurance from an insurance company, or you insure yourself. When you self-insure there are no premiums to pay, but in the event of a loss you pay the full amount. In other words, when self-insured you have a free policy with a 100 percent deductible.

There is a multitude of crop insurance products on the market and obtaining crop insurance is relatively easy. It involves determining the amount of protection desired and selecting the product and coverage level that will best provide that protection. Qualified and informed agents are available to answer questions and provide help and assistance in completing an application and explaining program requirements.

Determining Insurance Protection

True risk protection must be based on a farm's own production potential. Proving historical yield records is the most realistic method of estimating how much protection is needed, especially if a grower's yield is above average. The insurance yield for much of Federal crop insurance coverage is based on a producer's Actual Production History (APH). APH's are based on the average yield from the insured unit for four to ten consecutive years. For farmers who have less than four years of production records, variable transitional yields (T-Yields) are used to complete the minimum four-year database.

To determine the amount of insurance protection, farmers must select a coverage level and a price election. Producers can insure a percentage of a yield (coverage level) and, for most products, can choose from 50-75% (85% for some crops) in 5% increments, of their APH yield. The price election is the price per unit of measure as issued by the US Department of Agriculture Risk Management Agency (USDA/RMA) prior to each crop year.

This price election is used to establish the insurance guarantee, premium, and to compensate the insured in the event a production loss occurs. Producers have a choice of various percentage level price elections established for each crop year (55% to 100% of USDA/RMA established or projected market price). There are several options on how to divide land to determine APH yields and premiums under crop insurance. Each parcel of land for which claims are calculated is called an "insurance unit." A unit is defined as that acreage of the insured crop in the county which is taken into consideration when determining the guarantee, premium, and the amount of any indemnity (loss payment) for that acreage. Unit structure is a very important aspect of maximizing the risk management protection offered by various insurance policies. Check with an insurance agent to find out how many and what types of insurance units your crops qualify for, and how this will affect your premiums. There are four types of unit structure: basic, optional, enterprise, and whole-farm units.

Insurance Products

Multiple Peril Crop Insurance (MPCI)
MOCI is a broad-based crop insurance program administered by RMA and subsidized by the Federal Crop Insurance Corporation (FCIC). As the name implies, MPCI provides protection against an unavoidable loss in yield due to nearly all natural disasters. For most crops, that includes drought, excess moisture, cold and frost, wind, flood and damage from

insects and diseases. MPCI does not cover losses resulting from not following good farming practices, low commodity prices, theft, and specified perils that are excluded in some policies. There are specific restrictions on some crops based on acceptable farming practices. Most MPCI programs guarantee a yield based on an individual producer's APH. If the production to count is less than the yield guarantee, the insured will be paid a loss. Catastrophic (CAT) CAT insurance is the minimum level of multi-peril crop insurance coverage at 50% of a producer's yield and 55% of the price, and meets requirements for a person to qualify for certain other USDA program benefits. The premium is 100% subsidized, but the farmer pays a $100 per crop per county administrative fee. Farmers with limited resources may be eligible for a waiver of the fee for CAT coverage. Any crop insurance agent can assist producers in determining if they are eligible for a fee waiver.

Crop Revenue Coverage (CRC)
The most widely available revenue protection policy is CRC. This policy guarantees an amount of revenue (based on the individual producer's actual production history (APH) x commodity price) called the final guarantee. The coverage and exclusions of CRC are similar to those for the standard MPCI policy. This final guarantee is based on the greater of the springtime generated price (base price) or the harvest-time generated price (harvest price). While the guarantee may increase, the premium will not. Premium will be calculated using the base price. Since the protection of producer revenue is the primary objective of CRC, it contains provisions addressing both yield and price risks. CRC covers revenue losses due to a low price, low yield, or any combination of the two. A loss is due when the calculated revenue (production to count x harvest price) is less than the final guarantee for the crop acreage.

Income Protection (IP)
IP is a revenue product that, based on the individual producer's APH, protects against a loss of income when prices and/or yields fall. While IP looks a lot like CRC, it does not have the increasing price function of CRC. The guarantee and the premium will be calculated using the spring-time generated price (projected price). An indemnity is due when the revenue to count (production to count x harvest price) is less than the amount of protection.

Revenue Assurance (RA)
The coverage and exclusions of RA are similar to those for the standard MPCI policy. However, MPCI provides coverage for loss of production, whereas RA provides coverage to protect against loss of revenue caused by low prices or low yields or a combination of both. RA has the Fall Harvest Price Option (FHPO) available. This Option uses the greater of the fall harvest price (harvest-time generated price) or the projected harvest price (spring-time generated price) to determine the per-acre revenue guarantee. So, with the Option, RA works like CRC, without the Option, it works like IP. RA protects a producer's crop revenue when the crop revenue falls below the guaranteed revenue.

Group Risk Income Protection (GRIP)
GRIP is based on the experience of the county rather than individual farms, so APH is not required for this program. A GRIP policy includes coverage against potential loss of revenue resulting from a significant reduction in the county yield or commodity price of a specific crop. When the county yield estimates are released, the county revenues (or payment revenues) will be calculated prior to April 16 of the following crop year. GRIP will pay a loss when the county revenue is less than the trigger revenue. Since this plan is based on county revenue and not individual revenue, the insured may have a loss in revenue on their farm and not receive payment under GRIP. Beginning with the 2004 crop year, the GRIP Harvest Revenue Option (HRO) Endorsement is available. This optional endorsement offers "upside" price protection by valuing lost bushels at the harvest price in

addition to the coverage offered under GRIP.

Group Risk Plan (GRP)
Like GRIP, GRP coverage is based on the experience of the county rather than individual farms, so APH is not required for this program. GRP indemnifies the insured in the event the county average per-acre yield or payment yield falls below the insured's trigger yield. RMA will issue the payment yield in the calendar year following the crop year insured. Since this plan is based on county yields and not individual yields, the insured may have a low yield on their farm and not receive payment under GRP.

Adjusted Gross Revenue (AGR)
AGR is a non-traditional, whole farm risk management tool that uses a producer's historic IRS Schedule F tax form or equivalent information as a base to provide a level of guaranteed revenue for the insurance period. It provides the producer with protection against low farm revenue due to natural disaster or market fluctuation. Covered farm revenue is income from agricultural commodities reported on the Schedule F tax form, including incidental amounts of income from animals and animal products (not to exceed 35% of farm revenue) and aquaculture reared in a controlled environment. Incidental livestock income represents the crop production value fed to livestock. AGR-Lite is a streamlined version of AGR available in limited states offering protection to smaller farms.

Private Named Peril (Crop-Hail)
Private stand-alone insurance policies provide protection against specifically named perils and are paid based on a percentage of damage multiplied by the liability or protection purchased less the deductible. Examples of private, non-subsidized crop insurance programs may include crop-hail, wind, or fire insurance, which offer protection for one specific peril (e.g., hail), and various programs which supplement federally subsidized insurance. The part of a crop damaged by a named peril may be less than the deductible on an MPCI policy. In this instance, crop hail insurance can fill the coverage gap. An MPCI policy protects against losses severe enough to significantly drop the whole farm's yield average. Crop-hail insurance, on the other hand, gives supplemental, acre by acre protection that more accurately reflects the actual cash value of damage from hail.

These products are not federal or state government products and the premiums are not subsidized. However, private products are regulated by the insurance departments in each state and companies must comply with all state insurance laws.

Important Deadlines
Sales Closing: To participate, a person must apply for insurance on or before the applicable sales closing date. This is the last date to apply for crop insurance coverage for any FCIC policy, or make changes in coverage from the previous year. Growers need to decide by this date the type of policy and the level of protection they want. Sales closing dates vary by crop and by state. *Final Planting Date:* Last day to plant unless insured for late planting. *Acreage Reporting Date:* After the crop is planted, producers must report (by type and or varietal group, if applicable) the number of acres insurable and uninsurable for which the insured grower has a share. *Premium Billing Date:* Although premiums are payable on the day after the sales closing date, the policy holder will not be billed until the premium billing date. Generally this date falls near harvest. *End of Insurance Period:* Following this date, the farmer no longer has any production or revenue guarantee on the crop. This date is the earliest date the crop is harvested, abandoned, or totally destroyed, the day the final adjustment on losses is made, or a specific calendar date set in each crop policy. *Date to File Notice of Damage:* This is the last date to give notice of probable loss in order to receive an indemnity payment. Notice is required within 72 hours of the discovery of the damage, but not later than 15 days after the end of the insurance period. *Policy Termination*

Date: If premiums or administrative fees are not paid by this date, the insurance coverage for the following year will be terminated. *Cancellation Date:* Last date to give written notice to the insurance company if the grower does not wish to carry crop insurance the next year. Otherwise, in most cases the policy will renew automatically for another year. *Production Reporting Date:* To keep your APH up to date, you must certify each year the acreage planted and the total production from the previous year.

Process of Getting Insurance

Insurance Cycle. Application needs to be made prior to a specified date early enough that neither party to the insurance contract has knowledge of the crop's production prospects for the year. The application for insurance includes the crop for which the insurance is sought, the county in which it is to be grown, the coverage level and price election at which the crop is to be insured. Historical records will be needed to verify production potential and to establish an APH (actual production history). The next step is to plant the crop prior to the final planting date. After the crop is planted, insured producers must file an acreage report with their insurance provider to certify the number of acres planted, the farming practice (for example, irrigated, non-irrigated, etc.) where appropriate, and any other information required to insure that crop in that area. After RMA accepts the acreage reports, it calculates the amount of subsidy and credits the appropriate amounts to insured farmers and their insurance providers. Premiums and any fees that insured farmers are required to pay are generally billed after the acreage report has been filed and processed. The amount of the premium that is owed depends on several factors, including the number of acres planted, APH yield, level of protection selected and the farming practice. It is the insured's responsibility to follow good farming practices and care for the crop through the growing season and harvest. If a loss occurs they are responsible to inform their agent and continue to care for the crop and obtain consent before any insured acreage is destroyed. An adjuster will verify the loss and an indemnity will be calculated and paid according to the terms of the policy. If no loss occurs, the farmer harvests the crop and reports the actual production to the agent for updating and recalculation of the APH. Insurance policies are continuous and if an insured wishes to discontinue insurance for the next year, they must do so by a specified date known as the cancellation date. The cancellation date is usually the same date as the sales closing date, though minor differences occur on some crops.

Finding an Agent Crop insurance is sold only by agents in the private sector. Use the Risk Management Agency's website (www.rma.usda.gov) to locate an agent in your area, or ask other growers or professionals (such as lenders) you do business with for their recommendations. Check with the insurance agency where you purchase other types of insurance. Often you can obtain crop insurance through an agent you already use for your homeowner's, automobile, fire, health, or life insurance needs. Many insurance agencies have agents who specialize in crop insurance.

Track Two

Bridging the Gaps in Programs and Services

Opportunities & Challenges for Refugees & Immigrants

Larry Laverentz
The Office of Refugee Resettlement
Washington, DC

Each year the President signs an Executive Order that permits the U.S. Department of State to bring to this country a certain number of refugees. In recent years, the number of arrivals has ranged from about 27,000 to 29,000 in the post 9/11 years to about 53,000 persons in fiscal year 2005.

"A refugee is someone outside of his or her country of nationality, who is unable or unwilling to return because of persecution or a well founded fear of persecution, on account of race, religion, nationality, membership in a particular social group or political opinion."

A refugee is different from an immigrant in that a refugee is here to escape persecution, cannot return home, brings virtually no personal property and needs government assistance. The contrast with immigrants is clear with the most obvious, immigrants are here by personal plan.

The approach by the Office of Refugee Resettlement (ORR) has been that the first 2 to 5 years in this country is generally a period of adjustment where refugees are expected to begin employment early on in minimum wage jobs with hopefully upward mobility. The ability to speak limited or no English is not considered to be a barrier to employment. After the period of adjustment, refugees are encouraged to engage in self-employment. ORR has supported this through successful programs of Microenterprise and Individual Development Accounts (IDA). The Refugee Rural Initiative promotes this idea of self-employment through agriculture.

From the perspective of the Office of Refugee Resettlement (ORR), the purpose of the Refugee Rural Initiative is: To meet the goal of long term self-sufficiency for refugees through the use of partnerships to access resources that encourage refugee farming and rural entrepreneurship to take advantage of increasing demands for niche, specialty and organic crops caused by changing demographics and attitudes in this country.

One of the keys to the success of the RRI has been the presence of a coordinating agency or entity in each community. Obviously, its purpose is to understand and promote the coordination of various resources that can support refugees in agriculture. Related to this is the function of identifying and working to solve the challenges that cut across organizational lines and technical areas.

The coordinating body is also important because of the uniqueness of each community. Planning and strategies have to be responsive to the local variables that include such things as growing season, access to population centers, marketing options, suitable crops, soil type(s), cultural attitudes on the part of the refugee and indigenous populations, presence and effectiveness of resource agencies, and state and local regulatory and procedural incentives and disincentives.

Early in the last fiscal year, the Secretaries of USDA and the Department of Health and Human Services signed a Memorandum of Understanding which promotes the working together of offices within USDA with ORR and the Office of Community Services (OCS) within DHHS to improve the coordination of programs and services to refugees and other low income individuals engaged in farming and rural entrepreneurship. In follow-up to this a work plan has been developed that

calls for specific areas of coordination and responsibility. In keeping with the spirit of this, several USDA officials recently participated in a national Rural Refugee Initiative Workshop in Columbus, Ohio.

New Entry Sustainable Farming Project

Hugh Joseph
Tufts University
Boston, Massachusetts

Immigrants and refugees who start to farm in the US are not just like any other beginning farmers. They face many challenges adapting to life in the US and this also translates to challenges with building a successful farming life and enterprise. Three important areas are summarized below:

1. Farmers' backgrounds: Many immigrants and refugees who begin farming in the United States usually are not beginning farmers. They have a farming heritage; these days this is usually from a tropical Third World country. Previous farming was often subsistence or small scale enterprise, with limited equipment and infrastructure or access to credit. In a sense, these farmers have to unlearn many of the practices that worked in their homelands as they adapt to and learn about "advanced" market-based agriculture systems functioning within an ever-expanding global context.

Solutions: Provide opportunities for farm training and education and for improved access to farm resources through programs directed towards these producers.

2. Demographics: Many immigrants and refugees are settled in urban communities where there is housing and social services. But that makes access to affordable farmland more difficult. Once in the US, immigrants and refugees often experience language and literacy barriers. Educational limitations and cultural and social differences can also be barriers.

Solutions: Limited employment opportunities due to education or literacy limitations can be easier to manage in agriculture. Farming near urban areas provides easier access to large markets, particularly ethnic ones. Adult education classes should be encouraged.

3. Production: Production challenges for immigrant and refugee farmers include:

- Lack of familiarity with crops that grow well in the regions of the US; similarly, figuring out how to grow crops that they raised in their home countries within the different climates and soil conditions that exist here.
- Pest management: Lack of familiarity with handling pest problems, combined with limited education and literacy and English language can lead to pesticide misuse and subsequent health and safety risks.
- Traditional patterns of family and community labor run up against US labor laws and other regulations.
- Finding safe, legal and reliable seed sources for non-traditional crops can be difficult**.** Some items may be restricted, such as water spinach, and require special permits.
- Being accustomed to using labor-intensive production methods and use of traditional planting systems can slow adaptation to using appropriate farm equipment and to more rapid farm expansion.
- Trends in industrial agriculture - including scale and concentration - make it hard to raise animals and having mixed use farms.

Solutions: Offer farm training opportunities to learn about US agriculture; focus more on mainstream products; farming experience in the US before starting a farm business; e.g., as farm labor, apprentice, or partners; focus on farm enterprise versus farm production approaches; e.g., know your market first.

4. **Marketing:**
   Ethnic crops often have limited markets - often in ethnic areas - that may restrict marketing opportunities.
   Many ethnic crops bring low prices, especially in the ethnic communities where the demand is highest.
   Many immigrants and refugees struggle with the challenges to build marketing relationships.
   Small producers can be unfamiliar with market demands such as post-harvest handling, grading, packaging, presentation, and pricing.
   Ethnic markets often don't place a premium on organic, sustainable or even fresher quality foods - price is the driving force
   Many immigrants and refugee farmers find it hard to market to buyers who are not in their communities; many don't know what markets are available.

Solutions: Assistance with marketing (coops, coordinated deliveries) can be critical; similarly, training in marketing skills and opportunities; focusing on niche or specialty markets where prices are highest; doing value added processing; looking for high end markets as a priority.

Immigrant/Refugee Farming Projects

Chris Morton
Minnesota Food Association
Arden Hills, MN

The USDA's Farm Service Agency's Office of Outreach web site includes a short historical piece that describes the implementation of Section 2501, or the **Outreach and Assistance for Socially Disadvantaged Farmers and Ranchers Program**:

> The Small Farmer Outreach Training and Technical Assistance Program, initiated during Fiscal Year (FY) 1983, was part of the former Farmers Home Administration (FmHA) response to the USDA Task Force on Black Farm Ownership. It was also reflecting a commitment to implement Presidential Executive Order 12320 dated September 15, 1981, (signed by President Ronald Reagan) to support Historically Black Colleges and Universities (HBCU).
>
> The Food Security Act of 1985 directed FmHA to continue funding small farmer training and technical assistance programs. The Agricultural Credit Act of 1987 required FmHA to assist socially disadvantaged farmers by establishing an outreach program to advise these farmers on farm ownership loans and of the availability of FmHA inventory farmland for purchase and also to provide training and technical assistance.
>
> Title XXV, Section 2501 of the Food, Agriculture, Conservation, and Trade Act of 1990 charged the Consolidated Farm Service Agency (CFSA) with the implementation of the Outreach and Assistance Grants for Socially Disadvantaged Farmers and Ranchers Program. Using this authority, CFSA would enter into agreements with 1890 and 1862 Land Grant Institutions, American Indian Community Colleges, Hispanic Serving Institutions and community based organizations to reverse the decline of socially disadvantaged farmers and ranchers across the nation through training and technical assistance.

In the late-1990s, new immigrants were added as a classified group to be included as "socially disadvantaged." Tufts University and Minnesota Food Association were contracted with to establish an outreach and assistance program for new immigrants. Both Tufts University and Minnesota Food Association spread their focus over Southeast Asian/Hmong, Latino, and African immigrants and refugees.

For the last ten years, there has been a large number of colleges and universities, as well as community-based organizations providing outreach, training, and technical assistance to new immigrants wishing to return to their agrarian roots and become farmers. Much of the training and technical assistance, then, has been focused on farm business management in America's capitalistic system, and crop production in a variety of climates and varying soils.

One continuing nagging problem is the question of land access, both on the front end for training opportunities, and on the back end as participants graduate from training programs and want to purchase their own farms:

- Land is expensive, even for training programs;
- New immigrants and refugees often want only to lease land at a very

low cost, but not participate in any type of training program;
New immigrants will often lease three (3) to five (5) acres of land from local farmers as an inexpensive way to have access to land, and keep their prices low;
Land in the urban and suburban circles are often very expensive, particularly in communities where new immigrants/refugees live (e.g., St. Paul/Minneapolis, Milwaukee, San Francisco);
Immigrants and refugees are resistant to moving to rural communities where land is more affordable.

ISED Solutions, Refugee Rural Initiative (RRI)

Ben Turner
Institute for Social & Economic Development
Washington, DC

The Office of Resettlement (ORR) has engaged ISED Solutions to explore how to maximize opportunities for refugees who desire self-sufficiency through starting or expanding an agricultural enterprise.

To assist ORR's efforts, and to better understand how refugee serving agencies can serve refugee agricultural enterprises, ISED Solutions has engaged 11 direct service partners from California to Massachusetts among the network of non-profit community based and faith based organizations serving refugee communities. RRI partners bring experience providing asset development programming such as micro-enterprise development, community development, or individual development account programs, or have working relationships with organizations that provide such services.

Important goals of the RRI are:

- to facilitate collaborations and partnerships between the local refugee service providers and USDA agencies;
- to help agencies retool or redesign their micro-enterprise programs for a better fit with the needs of food sector entrepreneurs;
- to compile as much information as possible within the limits of this project, about the involvement of refugees in the agricultural sector.

In addition to the issue of access to land and training opportunities, many refugee farm operations are chronically undercapitalized, which in part impedes an operator's ability to finance land purchases, cold storage facilities, farm equipment or under take other market driven strategies to increase income.

Many refugee operators find that securing farm financing can be challenging due to:

- A reluctance of many farmers to file taxes
- Lack of proper, consistent record keeping
- Absence of credit histories
- Non-engagement of market driven strategies such as crop diversification, transitioning to pesticide free organic farming and lack of willingness to relocate to areas outside of second and third tier suburban areas where farm land is cheaper.

Solutions: Some strategies to increase access to finance for refugee operators are for government agencies like Farm Service Agencies, Extension Agents, and the USDA in general, to design and deliver products and services that promote and assist limited or non-English speaking farmers. Employees of these agencies must begin to learn to recognize the important contribution that refugees and immigrants can make to American Agriculture and begin to tailor their efforts for the needs of small and very small farming operations. They could, for example, provide special incentives for sellers and buyers of smaller (5 to 40 acres) acreage.

Organizations such as Mutual Assistance Associations and Voluntary Agencies, those entities responsible for helping refugees resettle, must continue to work towards redesigning and retooling their economic development programs to become more competent at the delivery of technical assistance to clients who work in the farming and agri-business sector. This entails creating more farm specific cash flow loan solutions, providing relevant loan capital for asset purchases and most importantly work with operators on

market driven strategies to enhance operations.

Additionally service providers need to establish working relationships with traditional providers of agricultural services and finance, and they need to understand the inter-relatedness of farm sector systems of distribution and develop effective strategies to help refugees' access and secure profitable markets.

Native Women in Agriculture

Vicki LeBeaux
Intertribal Agriculture Council
Billings, Montana
Polly Hayes
Seminole Tribe of Florida
Florida
Jeannie Benally
Navajo Nation
Shiprock, New Mexico
Janie Hipp Rogers
University of Arkansas
Fayetteville, Arkansas

Vicki LeBreaux

Intertribal Agriculture Council Chartered in 1987 - Promoting the Indian Use of Indian Resources

- Programs to meet member needs

  American Indian Foods

  Trademark

  Farmer To Farmer Program

  Outreach Program

  Policy

American Indian Foods – "Taste the tradition"

Initiated in 1998 - tradeshows and export seminars

Europe and Asia -proven countries, established markets

Currently working with the following products: salmon and seafood, blueberries, cranberries, buffalo, beef, olive oil, citrus (all variations). apples, asparagus, seasonings, teas, rice, alfalfa pellets, melons

native chef conducting "Native Tastes Seminars" = Canadian Food and Beverage Show; London Fine and Fancy Food Show, Native Tastes Seminars in London, Asia and Canada

Reverse trade missions, shows, seminars

Trademark program

Domestically Established - Criteria must be met

Made by American Indians Trademark - United States Department of Commerce reports that non-Indians using "Indian" labeling accounts for at least 20% of $1 billion industry - Solution?

"Made by American Indians" Trademark

"Produced by American Indians" Trademark

Since its first use in 1993, the trademark has grown to include over 500 users with domestic & international exposure

Must be a member of a federally recognized tribe, application with IAC, IAC approves, license term applies, incorporation of trademark into label of the product

Allows Product Differentiation - Commodity vs. Specialty Product; "Niche Market"; Value-Added; Original Stewards of the Land; Naturally Raised; Improves Native American Economies

Farmer to Farmer Program with Winrock International

Native people volunteer time & ag-related expertise

All expenses paid, Length of trips: 10-14 days, End of trip report, Follow up

Register in IAC Database, Review Scopes of Work with IAC

Outreach Program

Four IAC staff located in each of the four regions in the Indian Country

Assist in Agency/program understanding, provide education & training, serve as an information resource; Farm Bill - Testify to Congress on current legislation; represent a concerted voice for Indian Country on Ag Issues

Polly Hayes

Discussion of one tribe's experiences with 4-H programming

Try to fuse program with our strong traditions - have been raising cattle for over 200 years and we have the 10-12th largest U.S. herd and 4-5th in Florida. - One of the first nationally to be involved with Animal ID program and our children are very much involved with the entire process.

We touch about 80% of tribal youth with our programs, around 40% in registered projects and another 40% in school enrichment programs; every year we try to get stronger.

The Seminole Tribe has had a 50+ year involvement with our 4-H partners - traditonal clothing, baskets, dolls - keeping it alive our kids are showing interest in video and technology transfer

Over 90% of Tribal members are active participants in the programs administered by the Seminole Tribe's Education Department; over 450 Tribal member students have graduated from high school since 1945; approximately 570 Tribal members currently attend Florida public schools schools; more than 70 Seminole students are known to be enrolled in 59 different colleges or universities.

Jeannie Benally

Farm Safety

Chemicals & Their Uses

Canal Ditch Safety

Cattle Handling Safety

4-H Youth Leadership Activities

Public Speaking

Livestock Projects

Demonstrations

Workshops

Ag Education

- Livestock Seminars
- Agricultural Days
- Small Farms Workshop
- Master Growers Program
- Demonstration Plots

Annual Livestock Auction & Dine Agriculture, Inc.

Building Alliance with Navajo Communities for Health and Wellness

Janie Hipp Rogers

Our Mission: To provide a network and forum for Native Women in Agriculture.

Our Vision: As Native Women of the Earth, who are educators, nurturers and conductors of cultural unity for future generations; we will address agricultural issues relating to education, food systems, viability, preservation of cultural identification and understanding.

- Where are we? - Throughout North America and beyond
- What have we contributed? Historically, culturally, traditionally, we are agriculture in our communities
- Federally Recognized Tribes in the U.S. - 564+ federally recognized tribes and 264 federally recognized Alaskan villages; "federally

recognized" = tribes and groups that have a special, legal relationship with the U.S. government; Government to government relationship; Usually treaty related

Our Land

- 275 land areas are administered as reservations (reservations, pueblos, rancherias, communities, villages, etc.) - Largest = Navajo Reservation = 16 million acres of land in Four Corners area; total of 56.2 million acres of land held in trust by the U.S. for various Tribes and individuals; of that 47 million acres of land is used in agriculture
- Land fractionation is a large issue - Secretary of Interior serves as trustee for such lands – Bureau of Indian Affairs (BIA has delegated responsibilities - Ongoing litigation with Department of the Interior and BIA ---re: management of accounts - High percentages of land on reservations is owned, occupied or leased by non-Indians

What/Who is our agriculture?

- 1992 Census of Agriculture - 8,346 farms operated by American Indian - Under-reporting is a serious problem
- ERS comprehensive report of limited resource and socially disadvantaged farmers (1990s)
- 80 % of all farms operated by Women, African Americans and Native Americans sold less than $25k in agricultural products in 1992
- One-half of the farms operated by Native Americans were in the Southern Plains region – 2/3 of all American Indian farms located in the OKC, Billings and Sacramento regional offices of RMA
- Almost all land farmed by Native Americans is on reservations, but this didn't take into consideration the numbers of Tribal Nations that are non-reservation Tribes found in the Southern/Southeastern region of the country - Most farms harvest outside a contractual relationship and most receive no government payments (WRP, CRP, EQIP, etc.)
- Keepseagle litigation still pending --re: access to governmental program
- Most incorporate some form of livestock, plus hay, corn, wheat, soybeans, fruits, nuts and berries; Rapidly growing niche products sector

Intertribal Agriculture Council report in conjunction with the Federation of Southern Cooperatives (1995)

- 9% of respondents had college degrees, most had high school + some college; 78% were primary wage earner; 46% were receiving at least $10k in on-farm income; 70% received at least $10k off-farm income; Only 14% received FSA loan; 1/3 reported having crop insurance between 1990-1995
- Most recent Census Report (2002) - American Indians operated 56.8 million farmland acres or 6 percent of the 938 million U.S. farmland acres; Sold $1.64 billion of agricultural products including $781 million of crops and $857 million of livestock; make significant contributions to U.S. agriculture; number of American Indian farm operators identified totaled 42,304; these numbers still do not reflect full impact of Native American agriculture; Still underreporting
- Extension Indian Reservation Program - Authorized by the 1990 Farm Bill (P.L. 101-624); 8 programs in 15 states; AK, AZ, FL, ID, MS, MT, NC, NV, NM, ND, OK, OR, SD, WA, WY; 86 agents in 19 states; $1.9 M (early 2000s) – originally authorized for $8.0 M; Agents are employees of Cooperative Extension Service of the state where the reservation is located; Office and work on Reservations; Conduct Extension work on behalf of Native Americans residing on reservations

American Indian women – America's First Farmers

- Our primary responsibility is to gather plant foods – brought about the revolutionary transformation to "agriculture" - Made first agricultural discoveries and began centuries' long process of domesticating crops - allowed villages to flourish and political systems to develop
- Although farming takes place throughout what is now the Eastern U.S., European colonists described the land as vast, empty tracts
- Reinforced claims to ownership through eminent domain (English common law) - If unoccupied or unused, the land belonged to "the Crown" - In order for colonization, must portray land as untilled
- Actually intensive cultivation underway along with seasonal storage of surplus - Early reports indicate planting of 2 crops (double cropping) and field rotations underway
- Other techniques shared with settlers – techniques in place when colonists came
    - Which seeds to plant and where - Fertilizers & Natural insect repellents
    - Intercropping & Double cropping - Raised bed farming & terraces
    - Plows - Irrigation systems and aqueducts - Aquaculture
    - Food coloring and food preservation & Food storage
- Women's rights
    - Iroquois League of Five Nations – existed prior to colonization
    - Women had full political participation – men made decisions but women had power to veto them - Women had power to appoint men to positions of authority - Matrilineal societies – lineage traced through women - Property and clan affiliation owned and passed on through women
    - Iriquois Constitution – "women shall own the land and the soil. Men and women shall follow the status of the mother."
- Women as head of households traditionally and is still very common among tribes today

Challenges as we move forward…Native Women in Agriculture

Re-engaging Native Youth - Return to organic and traditional foods

Creating network/support for Native Women to impact Native Agriculture in positive ways

Local food systems & export of food products

Ensuring land base, health of land base, health of peoples; Funding

Outreaching to Socially Disadvantaged Farmer & Ranchers along the Texas Mexico Border

Omar Garza
The Texas Mexico Border Coalition Community Based Organization
Rio Grande City, Texas

This community-based organnization (CBO) was formed when a Local Soil and Water Conservation District realized that there was a gap that needed to be filled. Technical assistance, as we knew it, was becoming harder to access, especially in the border region of Texas. In 1998 the organization was incorporated in Texas and the process started to become a non-profit 501c3 organization. This was a costly process, especially for an organization with no funds. It took some commitments from the Soil and Water Conservation District and a few individuals to come up with the needed cash.

In 1999 membership was opened, and several membership meetings were held within the region. The initial members were all committed producers who also shared the dream of an organization that would help with technical assistance and other educational activities. The initial organizers now decided that it was time for them to step back and allow the organization to move forward. Members elected membership from the CBO area and activities started. Membership reflects the makeup of the area and represents the different farming, ranching, and related activities from the area. Membership now stands at approximately 150. Once a member signs up, that person is a member for as long as that person wants to remain one. Membership dues are paid only once. A member may request to be removed from the mailing list at any time.

As a 501c3 organization we can access grant money from the different governmental agencies. In the past we have worked with RMA, NRCS, FSA, FSIS, and others. We have also worked with SARE on one project a few years back. Our partners include Colleges and Universities, other Non Profits, other agencies, and many local and county groups. Currently we are working on the following: 1. Risk Management Agency Outreach Grant through the F.A.R.M. project. 2. Natural Resources Conservation Service on a TSP grant. 3. CSREES on a 2501 eFARM Project. We are also involved in several other smaller grants from different agencies to provide some other specific service. All grants are related to providing educational and technical assistance to the communities in the area that we serve. Meetings are provided thru partnerships with the local agencies and, in many cases, local landowners to develop agendas beneficial to the area's needs.

Meetings are set up in conjunction with tours and etc. at the different locations. Arrangements are made, working with local organizations, such as Cooperative Extension Service, Rural Development, Texas Department of Agriculture, and others to assist with logistics. We depend on producer input to provide topics relevant to their needs. For example: in the Winter Garden area of Texas, through communication with small producers at a local farmers market it was learned that many of the 5-10acre vegetable farmers were selling their produce for cash and not even reporting it on a Schedule F Form 1040. Some have never filed a schedule F, therefore, they had no information for FSA in applying for a farm loan. This became a topic at a meeting where Schedule F was explained. There are many other examples but this gives you an idea. All of our meetings are producer

driven: they are the ones who tell us what information they need.

Finances are an important part of any program because money is needed to provide what is needed. Good financial records are important because those show the stability of the organization. A good working relationship with a solid financial institution is essential. Re-imbursements take time to go through the process. You have to be able to function as you wait for those. This problem grows as the organization grows

Our work plans are in line and are consistent with the organizational principles. It is important to keep in touch with clients. Some of our clients are followed from the start to the finish of an activity. Our best resources come from the producers whom we provide information to. If after a producer has been rejected by banks and FSA, we at times take the necessary steps and take them to the AC Bank and at times they will be successful in obtaining credit. If not we continue to work with them and provide financial information so they can become credit literate.

Some of our partners are:

1. Risk Management Agency: Thousands of producers have been informed about becoming better at managing risk in their enterprise. Numerous meetings have been held over the last 4 years with documented results.
2. Natural Resources Conservation Service: Many producers have been assisted with their conservation program planning through their EQIP, CRP, WIP, and several other programs.
3. Farm Service Agency: Multiple programs have been presented to thousands of producers with information on commodity programs, loan programs, NAP, eGOV, and other programs. In collaboration with FSA, an eHELPDESK has been set up to answer producers' questions about computer internet usage. It is staffed 8 hours per day 5 days per week. NRCS in Texas is also a collaborative partner in this endeavor.
4. Cooperative State Research, Education, and Extension Service: Through a 2501 project the CBO has undertaken the task of training producers in using the internet to conduct eGOV business through our eFARM project. There are thousands of people trained in this endeavor. This has been a collaborative project with Rural Conservation and Development Districts, NRCS. After the training, they are given the number for the helpdesk in case problems arise
5. University of Texas San Antonio and Texas A&M University: Assisted both Universities with their HLRPN program from the creation of that program. They develop leaders in their Masters and PhD programs specifically for leadership positions in agriculture. We are a source of local information and contact with the real world. Leadership from our organization have served on their selection committee.
6. University of Texas Pan American: Through the University's External Affairs Division, we collaborate with many of their rural programs; from the Rural Development Center to their Farm Service Agency Hifarm Project

Bridging Communication Gaps in Programs and Service

Jorge O. Comas
USDA-FSA
Washington, DC

The objective of this presentation is to discuss the communication gaps that sometimes exist in the delivery of programs and services and to present some of the tools that Farm Service Agency (FSA) has developed to bridge those communication gaps. These tools are being utilized to provide customers with the ability to obtain information and conduct transactions and to increase the participation of small and limited resource farmers and ranchers in FSA programs.

Have You Ever…

- Have you ever had trouble articulating a complex concept?
- Have you ever doubted that someone truly understood you-or that you completely received someone's message?

Effective Communications

The success of agricultural programs and other programs depends on multiple factors but:

- Effective communications is a MUST...

Communications Gaps Form When:

The message is not received, or

Differs from the message received

Concepts in Communications

Understanding and applying the concepts in communication gaps will help us determine:

- How the gap happened?
- What we can do about the gap?
- How we might prevent the gap in the future?

Effective Communication

Technical professionals including agricultural practitioners have to communicate effectively in order to;

- Understand customers' requirements and needs
- Build successful working relationships
- Meet customers and market demands, and
- Survive and successfully manage time pressures

Miscommunication

- So often, communication breaks down, and nothing gets done or at least done well.
- If you have ever experienced miscommunication, then you know that words mean different things to different people.
- Every day differences in communications cost your business, organization or association a lot of time, energy and money.

Bridging Communication Differences

Utilize effective communications including the use of other languages to communicate with your customers.

Words are your ambassadors

They open or shut the door

They program you for either success or failure, and

They tell people what to believe about you and your business.

What are some of the things that FSA is doing to bridge communications gaps in programs and services?

FSA is translating vital public documents and information into non-English languages to improve the delivery of its programs and services.

FSA is developing a foreign language website to accommodate the language needs of LEP customers.

FSA currently provides LEP customers assistance including TTY services for the deaf and hearing impaired via two bi-lingual English/Spanish contractors. They operate Monday to Friday, 8 to 5 p.m. Eastern Standard Time.

Phone: 1-866-538-2610 (toll free)

FAX: 1-866-302-1760 (toll free)

TTY: 1-866-480-2824 (toll free)

These services are being enhanced through a broad initiative to provide LEP customers with the ability to obtain information and conduct transactions using advanced Knowledge Base and Voice Self-Service (VSS) technologies.

FSA has successfully piloted an integrated based content resources management solution (AskFSA) that provides online self-service, e-mail response management, an intelligent knowledge base, and incident queuing and routing capabilities.

FSA developed a Field Translations Review Team (FTRT) to review documents and information including public forms translated by contractors for compliance.

FSA utilizes cooperative agreements with community based organizations, educational institutions and farm groups to broaden the Agency's outreach activities for small farmers and ranchers.

A network of State Outreach Coordinators help county offices and service centers coordinate outreach efforts at the grass root levels.

FSA provides support for small farm conferences and activities like the one that we are here today.

What is Farm Service Agency?

Farm Service Agency (FSA) is the USDA's principal agency charged with promoting a stable and abundant American food supply. This objective is best met by supporting America's production agriculture community and helping protect the Nation's food and natural resources.

FSA serves the public by providing ALL farmers and ranchers with access and opportunity to participate in farm commodity, credit, conservation, environmental, and emergency assistance programs. Through these activities, FSA supports the USDA mission and help ensure a healthful, stable, accessible, and affordable food supply. Through these programs, FSA also fosters good land stewardship, which will help preserve our agricultural prosperity for generations to come.

FSA Program Information

<u>FSA programs are legislated by:</u>

Farm bill

Annual Appropriations

Disaster and Emergency Acts

<u>FSA personnel may also be contacted at:</u>

Farm and Equipment Shows

Town Hall Meetings

County Fairs

County Offices/USDA Service Centers

<u>Producers may also obtain information through:</u>

Local USDA Service Centers

Newsletters

National FSA Website -

www.fsa.usda.gov

State FSA Websites - www.fsa.usda.gov/ST

Program Benefit Delivery

Producers (including small, limited resource and beginning farmers and ranchers) apply for benefits and are serviced by their local service center.

County Office elected committees, comprised of farmers in the county office area, are responsible for overseeing FSA services delivered and outreach to the farming community.

For the 2005 County Committee (COC) elections, the Secretary's office determined to target a total of 440 counties for special efforts to encourage participation and to attempt to increase SDA representation on the COC. The counties were identified using Census of Agriculture data.

An Innovative Approach to Meeting the Needs of Underserved Populations

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Introduction

Reaching underserved farming populations can be challenging. Underserved farmers do not always have access to resources offered by both state and federal agencies. Assessing the needs of these farmers and responding to their needs in a timely manner is critical to farmers' success. Such clientele must be cautiously assisted using creative and innovative methods. This paper aims at (1) introducing the new audience not vested in traditional Cooperative Extension and USDA services; (2) discussing ways used to effectively reach this new audience, and (3) discussing collaborative efforts through mutual programming, resources sharing, and commitment across agencies.

Underserved Farming Populations in Maryland

Maryland Target and Fringe Areas

Maryland Socially disadvantaged farmers and ranchers are referred to as limited-resource farmers, which include women, minority (i.e., African Americans, Hispanics, and Asians), and new immigrant farmers.

Maryland Outreach and Assistance for Socially Disadvantaged Farmers and Ranchers (OASDFR) targets 12 counties (i.e., 5 in Maryland's Eastern Shore, 5 in Southern Maryland, and 2 in Virginia's Eastern Shore) comprising a total of 235 farmers. In addition, the Outreach project works closely with other underserved audiences (26 farmers) located in fringe areas (Howard, Montgomery, Talbot, Queen Anne's, and Kent counties).

Target region comprises:

1. Maryland's Eastern Shore: Caroline, Dorchester, Somerset, Wicomico, and Worcester counties;
2. Southern Maryland: Anne Arundel, Calvert, Charles, Prince George's, and St. Mary's counties; and
3. Virginia's Eastern Shore: Accomak and Northampton counties.

The targeted area has a significant number of underserved farming audiences. In general, limited-resource and minority farmers and ranchers do not usually attend traditional Extension meetings and workshops due to many reasons including time differential, communication breakdown, and previous experiences with government programs. However, small farmers participating in the Maryland OASDFR program have gained significant hands-on experience in various aspects of farming including production, marketing, finance, record keeping and farm management; acquired, owned, operated, and maintained farms; increased their participation in various USDA programs; and improved the profitability of their farms.

New Immigrant Farmers

Beside U.S. limited-resource and minority farmers, there is a growing influx of newcomers into the agricultural business commonly known as new immigrant farmers. According to the National Immigrant Farming Initiative (2004), immigrant farmers are immigrants and refugees, including farm workers, who aspire to have a farm business or are currently farming for the social and economic benefit of their family and community.

Immigrant farmers as well as beginning farmers, not properly framed in the Economic Research Service's farm typology (Hoppe, and MacDonald, 2001) have special needs that must be addressed by institutions interested in

their survival and success (Tubene, 2002).

This new category of farmers is a new rising star, which deserves much attention from policy makers and agricultural service providers. In fact, new immigrant farmers have little or no knowledge of the U.S. agriculture and U.S. farming requirements even though most of them were farmers in their homeland. Their needs must be identified within this new frame in order to better know them and serve them effectively.

Changes that have affected Maryland agriculture, namely the housing development pressure on farmland, and the downfall of the tobacco industry, have also brought new opportunities to small-scale farmers, particularly, new immigrant and beginning farmers, in terms of diversified agriculture and alternative market opportunities.

Reaching New Audience

Land-grant universities have an international reputation of taking the university to the people. Created by the Morrill Land-Grant College Act signed by President Abraham Lincoln on July 2, 1862; 1862 colleges became the first institutions in the nation to teach "branches of learning related to agriculture and the mechanic arts" without excluding other scientific and classical studies (Rasmussen, 1989).

The land-grant university system was thereafter strengthened by subsequent legislations, namely the Hatch Experiment Station Act of 1887, the Second Morrill Land-Grant College Act of 1890; the Smith-Lever Act of 1914, which established the system of cooperative extension services; and the Tribal Colleges Land-Grant Status of 1994 known as a provision of the Elementary and Secondary Education Reauthorization Act (NASULGC, 2005). While 1862 land-grant universities are recognized to serve predominantly Caucasian populations, 1890 and 1994 institutions serve predominantly African Americans and Native Americans respectively.

Building relationships and trust is crucial to meeting the needs of underserved audiences. However, over the years some minority farmers have lost such trust and faith in the U.S. government agencies due to discriminatory practices (Tubene, 1999; and USDA, 1999). This made it difficult for government agricultural service providers to effectively do their job of providing technical services to minority farmers.

As for any agricultural service providers, meeting the needs of underserved audiences requires careful identification and understanding of their needs. This includes understanding their daily struggles and designing programs around these specific needs. In the last five years, the Small Farm Institute, the Maryland OASDFR program, and Maryland NRCS have utilized and promoted strategies that encourage and assist underserved farming population to acquire, own, operate, and maintain farms. These innovative and non-traditional methods used to reach farmers are farm visits, one-on-one technical assistance, farmer focus groups, hands-on workshops and seminars, networking events, trials and demonstrations, on-farm research projects, and targeted scheduling strategy.

Leveraging Resources across Agencies

Partnerships and cooperation among agencies and organizations are key components to identifying small farmers and their needs and increase the capacity of these agencies and organizations to provide technical and/or financial assistance to small farm clientele. Limited-resource and minority farmers are underserved because of lack of interest from both farmers and government agencies. On one hand, government agencies design "one size fits all" programs; and on the other hand, limited-resource and minority farmers do not trust government programs due to past experiences. Hence, advocating for this segment of the forgotten audience is crucial to their survival. Very often, it requires lobbying government agencies

and/or raising additional funds to maintain programs. It is the duty of the Small Farm Institute and the Maryland OASDFR project to leverage resources across agencies in order to meet programs' goals.

Since 2000, three institutions joined effort to pursue common projects. In 2000, the Small Farm Institute sought collaboration from the Southern Maryland Resource Conservation and Development (RC&D) Council to identify technical and financial opportunities for small farmers in Maryland. Two years later, as the Maryland OASDFR was being established at UMES as an independent program (after separating from Delaware State University), RC&D became one of its Advisory Board members. Since then, RC&D was able to coordinate a link with the USDA-NRCS Maryland State Office. This link has provided technical and financial assistance to assisting the UMES program to further identify USDA farm program opportunities, alternative and agri-tourism opportunities, as well as share information concerning farm resources.

With assistance provided by the NRCS and RC&D Coordinator, many new partnerships were created and enhanced not only within USDA but also between government and private small farm interests.

Concluding Remarks

Underserved populations encounter many obstacles in their daily life. In Maryland underserved farming audiences are minority limited-resource farmers, new immigrant farmers and beginning farmers. Very often, they do not have resources to navigate the system to get where they are to be. Meeting their needs requires a holistic approach.

Leveraging both internal and external resources can be crucial to the survival of not only the very institutions serving underserved populations but also the underserved audiences themselves. Innovative and creative strategies used to reach underserved populations include farm visits, one-on-one technical assistance, farmer focus groups, hands-on workshops and seminars, networking events, trials and demonstrations, on-farm research projects, and targeted scheduling strategy. Better collaborative and coordinated initiatives among institutions are to be encouraged for better outcomes.

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Growing Wisconsin Farmers

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Grow Wisconsin Farmers (GWF) is a coalition of organizations, agencies and agri-businesses that is committed to sustaining and improving the Wisconsin agriculture industry by focusing on beginning farmer issues. *Grow Wisconsin Farmer's* vision is a coordinator network of resources to be available to assist beginning farmers. Its mission is to develop and sustain a coordinated network of resources and policies to assist farm entry and transfer.

Grow Wisconsin Farmers strives to achieve this mission through regular work group meetings to coordinate educational, promotional and policy efforts; annual state wide conferences to reach beginning farmers and agri-business professionals; Dairy Career and Business Development website; and projects. Recent projects include: developing regional networks and support systems for beginning farmers; establishing managed grazing dairy incubator farms; training beginning dairy farmers, mentors and advisors through internships and other opportunities; analyzing potential farm sites for beginning farmers; encouraging earlier farm succession planning.

Grow Wisconsin Farmers values:

1. Economically sound and environmentally viable farms.
2. Diverse opportunities for beginning farmers to establish successful businesses.
3. Low cost and/or retrofitted facilities as opportunities for beginning farmers.
4. Experienced farmers who assist beginning dairy farmers.
5. Public and private organizations that assist in farm transitions.

This effort began in 2002 when an Ad Hoc committee focused on beginning dairy farmer issues met and organized a working group. This initial meeting included representatives from Wisconsin Department of Agriculture, Trade & Consumer Protection, University of Wisconsin, Wisconsin Technical Colleges system, Farm Credit Services, Wisconsin Milk Marketing Board, Wisconsin Farm Services Agency (FSA), and various farm organizations. The GWF effort was assisted by the Wisconsin Dairy Industry Revitalization program, USDA funding secured by Senator Herb Kohl.

The Ad Hoc committee focused on the barriers beginning dairy farmers face. The committee relied on research from UW-Madison Center for Integrated Agricultural Systems and the Program on Agricultural Technology Studies, ***Nurturing the Next Generation of Wisconsin's Dairy Farmers*** [1], which notes, *"A strong dairy economy has both economic and social benefits for Wisconsin….support for beginning dairy farmers….is an important strategy that can renew the dairy industry and new farmers."*

"Dairy farmers can successfully start at different ages and stages in their careers. They employ a range of production strategies at different scales. Some take over the family farm, while others start out on their own farms."

"….the most important characteristic of the successful beginners….was the ability to negotiate a good fit between their

resources, skills and farm and family goals. Public and private sector agencies and businesses can help beginning farmers develop 'smart' entry strategies."

The first state-wide effort was a conference held in 2003 in Madison, WI which focused on identifying gaps and barriers that beginning farmers encounter. Conference organizers invited beginning farmers to tell their stories and be honest about the struggles they faced. The afternoon consisted of facilitated roundtable discussions. Each roundtable was given a topic and asked to expand on the gaps/barriers. Discussion topics were: financial, business, education, production, and support.

The 2004 state-wide conference focused on addressing the gaps. The discussion topics for this second conference included: getting in, staying in, community support, decision-making for beginning farmers, mentoring opportunities, ag lending resources, improving profitability, neighbor/community relations, older generation issues, younger generation issues, and farm organizations' assistance for beginning farmers. The facilitated roundtable discussions were designed to allow interaction among all the participants, and were specifically designed to discourage lecture presentations by the facilitators. The roundtable discussions were the most popular activity and highly reviewed in the evaluations. Although the state-wide workshops were well attended and well evaluated, the ad hoc committee realized that there were more beginning and aspiring farmers in the rural locations of Wisconsin who were not being reached.

This concern led to the 2004-05 Grow Wisconsin Farmers regional workshops. The target audience for these workshops were beginning and aspiring farmers and those who support them. The purpose of these regional workshops was:

- To establish regional networks of stakeholder organizations that will have a central focus on beginning farmers.
- To conduct regional workshops that attract
  - Beginning farmers
  - Young people considering farming careers, and
  - Farm owners seeking/considering life and business transitions
- To encourage personal interest, career entry and general support for the future health of production agriculture

State and regional partners expanded to include those on the ad hoc committee and regional economic development organizations, county agriculture promotion organizations, grazing networks, Wisconsin Housing & Economic Development Authority, Service Corp of Retired Executives (SCORE) and local farm organizations.

Three regional workshops were conducted. Cleveland, Thorp and Rice Lake, WI were the sites, with 72, 93 and 98 participants, respectively. Approximately 40% of the participants identified themselves as beginning farmers. Each of the workshops was conducted on a Saturday during the winter Extension programming season. Workshop success was based on obtaining the commitment of key people who have a local stake in the future of farming who agreed to take an active and responsible role in the planning of the workshop.

The workshop structure was similar to the state-wide conferences with a keynote speaker, focused beginning farmer panels, and repeated facilitated roundtable discussions. Educational organizations and government agencies were invited to provide displays for the workshops at the locations where space allowed. Cost of participation was kept at a minimum ($10 per person), by use of grant funding for materials and speaker costs and business support for the meals and breaks.

Developing and sustaining a beginning farmer workshop series requires vision,

planning, follow-up, local network development, encouraging and supportive facilitation, new ideas, continuity and state wide planning assistance.

Reflections and Planning

The popularity of these workshops indicates there are people who want to farm. There is community and experienced farmer support out there, it is just a matter of learning how to find and harness it. The combination of regional workshops and state wide conferences provide networking opportunities to address this very specific topic of beginning farmer issues. The format of the workshops and conference is very important. We feel that we have found a format that works in providing real farmers' stories and the opportunity to network and learn from neighbors. A coalition is the key to both the workshops and conference success.

Planning for the 2005-06 regional workshops and the 2006 state-wide conference has already begun. The state wide conference will focus on reaching agri-business professionals who work with farmers. Five regional workshops are planned, using the same basic agenda format, but with flexibility to allow for regional focus on types of enterprises and/or production systems.

[1] Barham, Brad, UW-Madison Program on Agricultural Technology Studies (PATS); Jackson-Smith, Douglas, UW-Madison PATS; Stevenson, Steve, UW-Madison Center for Integrated Agricultural Systems (CIAS); Taylor, Jennifer, UW-Madison CIAS and PATS, October, 2001. "Nurturing the Next Generation of Wisconsin's Dairy Farmers," Special collaborative report between the Center for Integrated Agricultural Systems and Program on Agricultural Technology Studies, UW-Madison.

Recordkeeping and Financial Management for Small and Limited Resource Farmers in Alabama

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Recordkeeping and business management decision making continue to be a challenge for small and limited resource farmers in Alabama. The Alabama Center for Small Farms and Rural Development at Tuskegee University has used various approaches in meeting the needs in these areas. The National Small Farm Conference presentation reviews the different instruments used through the years, including FSA Farm and Home Plan, Quicken, FINPack, and back to the simple journal entry approach. The goal has been to identify what method works best for each individual and to reinforce these behaviors.

The lessons learned from working with producers on FSA Farm and Home Plan and FINPack indicated that there remains a need for a systematic way to track revenues and expenses throughout the year. The ability to forecast, the long-term planning for which FmHA/FSA Farm and Home Plan and FINPack are designed, is contingent on the quality and consistency of data collected over time. To address this challenge, producers and agriculture professionals working with Tuskegee University have been exposed to Quicken and the use of Microsoft Excel for entering daily transactions in journal form.

The workshop began by asking the participants to consider their own personal recordkeeping system and to determine for themselves what works and what needs more attention. Audience participants provided feedback about ways they store and retrieve information. Some examples included centralizing telephone numbers into one phone book, keeping only one calendar, and using a credit card for business transactions to track expenses. The goal of the exercise was to highlight that recordkeeping is something that we all do as professionals and in our personal lives and that our efficiency and stress level can be affected by our level of organization.

Next, workshop participants were provided the type of information shared with target clients as they were guided through the process of developing a farm or ranch business plan. The PowerPoint presentation followed closely the Texas A&M University publication by Pena, Klinefelter, and Warmann called "Financial Management: The Key to Farm-Firm Business Management." Reference was also made to the IRS website for farmers/ranchers, IRS Agriculture/Farmers Information Section http://www.irs.gov/businesses/small/farmers/index.html. The lecture portion addressed the following topics: benefits of recordkeeping, developing financial management skills, the planning process, financial statements and ratios, what records to keep and the importance of maintaining a journal.

Last, the risk management tools developed through the partnership of a local business, Alcena Management Information Systems, Inc., and Tuskegee University with the USDA Risk Management Agency were distributed and explained. The journals have continually been revised when provided as the handout to demonstrate an easy-to-use manual bookkeeping system that coincides with six Microsoft Excel spreadsheets.

The recordkeeping system documents the basic financial information needed to examine revenues and expenses. The following journals contain the basic financial and management data for small

farm business success:

> Cash Receipt Journal is a record of all cash (income) received. Examples: sales, loans, agricultural program payments, and crop insurance and disaster payments, etc.
>
> Cash Payment Journal allows the farmer to keep records of all cash (expenses) that has been paid out over a period of time.
>
> Check Register is a record of all payments made via checking account.
>
> Mileage Log is a record of the miles traveled during the course of a business year. The mileage log allows the farmer to take advantage of the tax deduction for car and truck expense.
>
> Asset Inventory Log is a record of all assets owned by the farm. By maintaining the asset inventory log the farmer can keep a record for depreciation expense deductions.
>
> Mailing List is a record for the farmer to track all the important people that contribute to his/her business operation.

The key concept of the first three items listed is that they include a column for entering a number that coincides with the expense or revenue in the IRS Schedule F tax form. For example, *the Cash Receipt Journal* has a column for representing if the money received is from the sale of livestock bought, or the sale of livestock/produce raised, e.g. the first two categories within the income section of the tax return. Then, at the end of the tax year or whenever the manager wants to see where he/she stands financially, the data can be sorted and summed simply.

The *Cash Payment Journal* and *Check Register* follow closely the expense categories and provide a way to code as a part of daily activity. An intergenerational approach is encouraged such that farmers/ranchers maintain the manual logs and children learning mathematics and computer databases maintain the electronic logs.

The *Mileage Log, Asset Inventory Log*, and *Mailing List* are also key items for tracking to ensure travel related expenses and depreciation are accounted, while the mailing list contains all contacts for supplies, for customers, and for others where communication is key. See the appendix for examples of column headings and utilize the concept with your clients and/or on your farm using the spreadsheet software program available to you.

In conclusion, participant discussion occurred. There was a recommendation of Quicken software for generating Profit & Loss Statements, and other financial statements; along with questions and statements regarding the level of adoption of electronic financial tools by clients. Follow-up has occurred with individuals who requested the *Managing Cash Flows Workbook* data file or more copies of the manual journals.

Appendix: Column headings for journals, logs, and the list in *the Managing Cash Flows Workbook*

CASH RECEIPT JOURNAL

FARM INCOME CATEGORIES:
1-SALES LIVESTOCK BOUGHT; 2-SALES LIVESTOCK, PRODUCE RAISED; 5A COOP DISTRIBUTIONS; 6A-AG PROGRAM PAYMENTS; 7-COMMODITY CREDIT CORP LOANS; 8-CROP INSURANCE & DISASTER PAYMENTS; 9-CUSTOMER HIRE (MACHINE WORK) INCOME 10-OTHER INCOME

DATE	FROM	FOR	INCOME CATEGORY	INVOICE/OTHER #	AMOUNT RECEIVED

CASH PAYMENT JOURNAL

FARM EXPENSES CATEGORIES:
12-CAR EXPENSES; 13-CHEMICALS; 14-CONSERVATION EXPENSES; 15-CUSTOM HIRE (MACHINE WORK); 16-DEPRECIATION & EXPENSES NOT DEDUCTED ELSEWHERE; 17-EMPLOYEE BENEFIT OTHER THAN 25; 18-FEED PURCHASED; 19-FERTILIZERS & LIME; 20-FREIGHT & TRUCKING; 21-GASOLINE, FUEL, OIL; 22-BUSINESS INSURANCE; 23A-INTEREST MORTGAGE; 23B-INTEREST OTHER; 24-LABOR HIRED (LESS EMPLOYMENT CREDITS); 25-PENSION/PROFITSHARING; 26A-RENT OR LEASE VEHICLES OR EQUIPMENT; 26B-RENT OR LEASE OTHER (LAND, ETC.); 27-REPAIRS AND MAINTAINCE; 28-SEEDS & PLANTS; 29-STORAGE; 30-SUPPLIES; 31-TAXES; 32-UTILITIES; 33-VET SERVICES; 34A-OFFICE; 34B-OTHER EXPENSES

DATE	TO	FOR	EXPENSE CATEGORY	INVOICE/OTHER #

CHECK REGISTER

FARM EXPENSES CATEGORIES:
12-CAR EXPENSES; 13-CHEMICALS; 14-CONSERVATION EXPENSES; 15-CUSTOM HIRE (MACHINE WORK); 16-DEPRECIATION & EXPENSES NOT DEDUCTED ELSEWHERE; 17-EMPLOYEE BENEFIT OTHER THAN 25; 18-FEED PURCHASED; 19-FERTILIZERS & LIME; 20-FREIGHT & TRUCKING; 21-GASOLINE, FUEL, OIL; 22-BUSINESS INSURANCE; 23A-INTEREST MORTGAGE; 23B-INTEREST OTHER; 24-LABOR HIRED (LESS EMPLOYMENT CREDITS); 25-PENSION/PROFIT SHARING; 26A-RENT OR LEASE VEHICLES OR EQUIPMENT; 26B-RENT OR LEASE OTHER (LAND, ETC.); 27-REPAIRS AND MAINTAINCE; 28-SEEDS & PLANTS; 29-STORAGE; 30-SUPPLIES; 31-TAXES; 32-UTILITIES; 33-VET SERVICES; 34A-OFFICE; 34B-OTHER EXPENSES

DATE	**TO**	**CHECK #**	**FOR**	**EXPENSE CATEGORY**	**INVOICE/OTHER #**

ASSET INVENTORY LOG

ITEM DESCRIPTION	DATE PURCHASED	PURCHASE PRICE	NUMBER OF ITEMS	BRAND MAKE/MODEL

MILEAGE LOG

DATE	STARTING MILEAGE	ENDING MILEAGE	MILES TRAVELED	PURPOSE OF TRIP

CONTACTS/MAILING LIST

NAME	ADDRESS	CITY	STATE	ZIP	TELEPHONE NUMBER	E-MAIL ADDRESS

Track Three

Marketing

How to Start a Cooperative

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Guidelines

- Training or Orientation Tool
- Development DOES NOT Occur as a Linear Process
- Clusters Should be Completed Before Moving Forward
- Conscious Decisions Should Be Made to Proceed or Stop

Cluster 1: Needs Assessment

1. Identify Economic Need
2. Clarify, Review & Evaluate Proposed Business Activity
3. Evaluate / Identify Appropriate Organizational Structure
4. Define Proposed Activity in Mission Statement

Decision Point

- If need is identified, the proposal realistic, and a co-op is possible solution, proceed to Activity Cluster #2.
- If not, review activity or **STOP**
- Decision is made by vote of the group and by Cooperative Development Specialist

Cluster 2: Leadership and Work plan

5. Establish Steering Committee
6. Establish Advisory Team
7. Educate Comm. & Team on Co-ops & Dev. Process
8. Develop Plan of Work & Time Line
9. Assign Tasks & Target Dates

Decision Point

- If group takes responsibility for action, proceed to Activity Cluster #3.
- If not, STOP
- Decision is made by vote of the group, advisors, and / or by Cooperative Development Specialist

Cluster 3: Market and Member Analysis

10. Evaluate Market for Proposed Product/Service
11. Quantify & Characterize Potential Market
12. Evaluate Interest of Potential Members
13. Quantify Potential Level of Participation & Commitment

Decision Point

- If market potential and member participation are sufficient, proceed to Activity Cluster #4.
- If not, reconsider Activity Clusters # 2 & 3, or STOP
- Decision is made by vote of the group, advisors, and / or by Cooperative Development Specialist

Cluster 4: Feasibility Analysis

14. Conduct Feasibility Analysis
15. Identify Factors Necessary for Success of Cooperative
16. Define Risks and Benefits to Potential Members

Decision Point

- If feasibility analysis is affirmative and potential members recognize benefit, proceed to Activity Cluster #5.
- If not, reconsider Activity Clusters # 3 & 4, or STOP
- Decision is made by vote of the group.

Cluster 5: Business and Organization Plan

17. Develop Business Plan
18. Obtain Legal and Accounting Counsel
19. Finalize Capitalization Plan & Draft Legal Docs

20. Establish Banking Relationship
21. Conduct Member Equity Drive

Decision Point

- If equity drive successful, proceed to Activity Cluster #6.
- If not, reconsider Activity Clusters # 4 & 5, or STOP
- Decision is made by vote of the group.

Cluster 6: Incorporation and Start-Up

22. Incorporate / Elect Board
23. Establish Accounting & Control Functions
24. Id. Mgt. KSA's, Conduct Search, Hire Manager
25. Complete Capitalization
26. Land, Bldgs. & Equip.
27. Develop Opr. Policies
28. Begin Operations

How to Start a Farmers Market

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A farmers market can be defined as a common facility or area where several farmers/growers gather on a regular, recurring basis to sell a variety of fresh fruits and vegetables and other locally-grown/raised farm products directly to consumers. Farmers markets give consumers direct access to fresh fruits and vegetables and other farm products, as well as provide small-sized farmers with an alternative sales outlet for their production.

Who Benefits From Farmers Markets?
Small/medium-sized farm operators Direct access to consumers at farmers markets provides an important supplemental source of farm income for many growers. According to USDA's National Farmers Market Survey in 2000, 19,000 farmers reported using farmers markets as the sole outlet for their commercial fruit and vegetable production.

Consumers Farmers markets allow consumers to have access to locally grown, farm-fresh produce and the opportunity to personally interact with the farmer who grows the produce.

The community Many urban communities where fresh, nutritious foods are scarce gain easier access to food through farmers market operations. Survey data from 2000 indicate that 58 percent of markets participate in WIC coupon redemption, food stamp redemption, and/or other State and local nutrition programs, while 25 percent of markets participate in gleaning programs aiding food recovery organizations in the distribution of food and food products to needy families.

The keys to establishing a successful farmers market involve setting and achieving a clear set of goals. When starting a market, the following goals should be the main areas of focus:

Creating a Sponsoring Organization
The beginning stages of setting up a farmers market typically involve assembling a group of dedicated stakeholders to form a sponsoring organization, who meet to discuss the objectives and goals of the planned farmers market facility, establish a governing body, such as a board of directors, and develop by-laws and operating rules and regulations for the planned market. Preliminary feasibility studies are often undertaken by these organizations to evaluate local market conditions, and established operating rules and fee structures that are suitable for a specific market location.

Farmers markets can be initiated by a wide variety of groups or individuals. In some cases, individual citizens take the initiative to form committees of local volunteers, such as "Friends of the Farmer Market" organizations, which assume a leadership role in planning a farmers market facility. Other farmers markets are developed with the assistance of non-profit foundations with interests in sustainable agriculture, municipal, local and State governments, and producer associations.

Once these farmers markets are developed, it is very important to put together a mission statement and set goals that will serve as the benchmark for the market as well as communicate to potentially participating growers and consumers.

Mission Statement. The idea is for the mission statement to be short, but provides an impression of the direction in which the market is

headed. With the mission statement in place, the first major step is now to focus on goal setting. This process is utterly important because they not only serve as motivation and inspiration, but they also help in the formation of prioritizing them as well.

- Example: Dane County, Farmers Market in Madison, WI

Goal Setting. Goals describe what is expected to be achieved at the market, what is to be marketed, who will be involved in the market operations, and what is expected to be earned down the road. Unfortunately, goals do not describe how one plans to market and price products, staff the market, and provide market equipment. To further spell out particular goals, be sure to write out goals, identify common and realistic goals, and prioritize goals. When setting and prioritizing your goals, it is wise to define a timeframe for each goal. Timeframes for goals can be set up to include:

- Short-term – one to five years (Example: finding 5 local farmers to serve as vendors)
- Intermediate – five to ten years (Example: being a fully funded market on its own that offers other attractions to the market)
- Long-term – ten or more years (Example: remaining fully funded with no assistance and offering value-added opportunities)

The task of prioritizing goals will never be an easy one, since most goals overlap each other. However, the idea is to recognize which goals are most important to the market, and determine which ones are worth pursuing, even if it prevents from other goals being reached.

Identifying and recruiting farmers
When attempting to establish a farmers market, it is important to identify the local growers in the area, and figure out which growers might be interested in participating in direct farm sales on the market, which commodities are available locally, and what the seasonal availability of product is likely to be. County extension agents, Cooperative Extension departments at local land-grant universities, and agricultural trade associations can be useful sources in finding farmers who may be willing to participate in the market. In order to convince local growers to support the concept of the farmers market, it may be important to demonstrate the level of consumers' interest in obtaining high-quality fresh produce and other farm products from local growers, set fees at a level that local growers find acceptable, and, in some cases, provide assurances to growers that 1) the farmers market will be a producer-only market and 2) there will be limitations on the number of vendors who are allowed to sell the same commodity. It is important to remember that there is "no hard and fast rule" about which item to consider first when starting a farmers market, but often identifying farmers is harder than finding a location.

By-laws
The by-laws are established formal rules that govern the internal affairs of the market. They normally describe and define the role and responsibilities of the directors and officers, the purpose of the market, where it is located, the hours of operation, membership, dues, fees, election procedures, and the amendment process.

Rules and Regulations
To ensure an efficient and orderly market, it is important to adopt and enforce concise rules and regulations. However, please make sure to contact the state farmers market representative to find out about each State's specific guidelines for starting a farmers market at http://www.ams.usda.gov/farmersmarkets/.
Examples of certain questions/concerns that can arise include:

- Should sales at the market be limited to fresh fruits and vegetables or should

processed and dried goods, or farm related crafts, be allowed?
- How many participants can the market accommodate or is there ample space for all of those that desire to participate?
- Are licenses and permits required to sell certain commodities at the market, such as nursery licenses for all potted plants and cut flowers, or processed foods certifications for any value-added vegetable or fruit items?
- Will the geographic region that the market draws on for suppliers be restricted in any way (e.g., by number of participating counties)?
- If a market is located on city property, will the city allow hot food items or "closed alcoholic containers" to be sold on the market?

Budget

The board of directors or similar governing body for the farmers market typically oversees the financial status of the organization by creating a budget and plan for the annual operation of business. Expenses from this include insurance, permits, and outside assistance and financing for the organization.

Insurance – All organizations should be covered by some type of liability insurance. Insurance companies view outdoor activities as a major risk, therefore, it has become quite difficult to obtain coverage. Researching the matter and finding out who offers coverage and what type of coverage offered is essential. Some companies require organizations to be incorporated, either as a non-profit organization or a non-profit organization with 501(c) 3 status, to qualify for such coverage. Local governments, that sponsor farmers markets, can sometimes add them to their existing policy. The North American Farmers Direct Marketing Association (NAFDMA) offers an insurance company referral list to their membership. To view that list, log on to their website at www.nafdma.com.

Permits – The need for permits will vary for each location. To find out what permits are actually needed, one should contact the local Chamber of Commerce or local community planning/economic development office for assistance.

Outside Assistance & Financing – Farmers markets can look for outside sources of financing and technical assistance through local and State government, foundations and other private organizations. The Northwest/Midwest Institute maintains a list of such resources at http://www.nemw.org/farmersmarkets/

Fee Structure - Fees collected from participating vendors are typically a primary source of income for farmers markets. Fees determine whether the market can afford to pay the manager a salary, how much advertising the market can afford, and what type of maintenance/improvements can be made on the market site. Fees should be based on profitability and reflect the true costs of operating the farmers market. They also should be structured to fit the needs of the organization. Fees may be based on a percentage of the farmers' gross sales for each market day, or a seasonal/annual basis.

Identifying a location

Location is a critical factor in developing a successful farmers market. Ideally, farmers markets should be centrally located in a downtown district, a well-populated residential area, or a well-trafficked commercial area. Wherever possible, market sites should provide easy access to car traffic, offer attractive surroundings, be visible from the road, and be located in an area with controlled traffic patterns. The most desirable locations are those that are easily accessed by both the public and participating farmers. Ample parking for customers and farm vendors, along with and ample room for vendors to set up their stalls are important assets.

Examples of good locations include:

- Shopping centers and malls
- Outdoor spaces/parking lots affiliated with religious institutions
- State and Federal building parking lots (for weekend markets)
- Downtown "plaza" areas
- Public parks
- Public square
- Blocked off street connected to local businesses

To be most successful, farmers market locations should offer access to public restrooms, public telephones, and a customer service booth.

Identifying a Market Manager

What most successful farmers markets have in common is a positive, dynamic manager, who serves as the main point of contact for the market. The market manager's main duty is overseeing the day-to-day operations of the market. He or she is responsible for collecting user fees, obtaining the proper permits and insurance for the market, enforcing the market's rules and regulations, recruiting vendors, controlling the vendor and product mix, handling any complaints or disputes that may arise among participating vendors, and working closely with the market's board of directors or other governing body. To be successful, it is critical that the manager is able to work well with and communicate information clearly to a variety of market stakeholders.

Beyond overseeing operational issues, a major component of the market manager's role is establishing strong contacts with the community, especially with members of the local media. The market manager typically represents the "public face" of the farmers market to the local community, and plays an important role in influencing the publicity that the market receives.

Farmers markets are a viable, direct marketing activity that provide ample variety, fresh quality, and reasonably priced farm-raised commodities to consumers of various ethnic and economic backgrounds. Shopping at a farmers market is a real delight for the senses, the assortment of smells, tastes, textures and color schemes create a rewarding experience that consumers would get excited in their respective return. It is simply a place of solace to some and a reunion to others.

When looking to develop a successful farmers market in your community, one must remember that it takes time, a great deal of patience, and persistent effort. Nevertheless, the chances of establishing a successful farmers market increase to the extent that stakeholders:

- "Do their homework" and thoroughly evaluate local market conditions
- Leverage available resources in the community
- Hire strong, capable management
- Set appropriate market standards
- Develop a realistic budget and fee structure
- Arrange for a reliable and steady supply of quality farm product, and
- Pay sufficient attention to market publicity and community relations
- Tap into city/county resources that deal with local health coding, local ordinances and laws, permits, etc., solid waste disposal, and connection to utilities
- Finding inexpensive public space
- Work together with other parties (community leaders, policy-makers, consumers, potential vendors) in order that the market is used profitably and efficiently to better suit the community

Marketing Natural Meats: Targeting Consumer Segments in your Marketing Plan

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Retail sales of organic meats and poultry are the fastest growing segment of the $23 billion organic food industry, with a growth rate of 77.8% between 2002 and 2003 (Organic Trade Association). Sales through general supermarkets (rather than specialty health and natural markets) accounted for 45% of natural/organic food sales in 2001, up from 31% in 1998, but direct sales by producers also appear to be growing in many regions. These trends signal the growing mainstream appeal of natural foods and motivate the need for analysis of the nature and variety of characteristics and primary motivators of those consumer profiles who have interest in natural/organic meats.

The increasing complexity of consumer food purchasing trends is an important factor guiding all agribusiness-marketing efforts. Profiling and targeting consumers by marketing channel (natural and organic food stores) may have once been effective, but it appears that natural meat consumers may be increasingly diverse. This is an issue of interest and importance to those producers who seek to use smaller niche markets as a means to innovate value-added meat products since they are often too small to get access to retail natural stores. One area of increasing differentiation relates to the location and types of production methods used to raise the animals. Throughout the United States and Colorado, numerous new business ventures have been initiated to garner either a price premium or more loyal customer base through the marketing of unique production systems to consumer segments. The market research conducted on behalf of Colorado Homestead Ranches is presented here in the context of its potential use for business planning among other US natural meat producers and alliances.

The objective of this presentation is to share research on consumer segments for natural, local meat products. Using a 2004 national survey, consumers were grouped based on their interest and willingness to pay for various natural beef products (varied by production claims), use of different marketing channels (health/natural food stores, farmers markets, meat shops, direct from producer, Internet), the importance they placed on different production practices (antibiotics, hormones, BSE-tested, wildlife-friendly grazing, grassfed) and reasons that motivate them to purchase natural meats. Such analysis should facilitate producers' ability to effectively develop product concepts, labeling and promotional strategies targeted as receptive consumers. In addition to presenting the research findings, the presentation will focus on how producers could use such findings to develop more effective marketing plans and activities.

The importance of various beef characteristics to consumers can be analyzed in two different ways: factor analysis, which measures the primary differences in responses across the entire sample to determine important factors for differentiation; and, cluster analysis, which groups consumers by their similar responses, suggesting groups of consumers who may appreciate and respond to various product concepts and marketing messages. The most important factor explaining almost two-thirds of the differences among Colorado consumer responses (and 60% in the national sample) relates to production practices (use of antibiotics, hormones,

environmentally friendly grazing). This signals the potential strength of production methods (and marketing of such quality differences) as product differentiation criteria.

Findings from the cluster analysis indicate that there are multiple segments of consumers who are likely to purchase natural beef, and that different segments are motivated by different factors. We found the five clusters vary significantly in means across a wide set of variables, including demographics, and used these differences to name each cluster. As a means to target consumer segments, we can focus on willingness to pay and note there is a stark difference in the level of premium that consumer segments are willing to pay (Fig. 1). Two target segments, quality seekers and health and natural consumers, were targeted because of their willingness to pay the prices that Colorado Homestead Ranches needs to charge to meet their goals for returns to meat.

Quality seekers (17% and 19% of Colorado and national samples, respectively) and health and natural consumers (22% and 13% of CO and United States, respectively) both indicate a willingness to pay a premium for natural, local beef, but are motivated by different aspects of the meat and its intrinsic production attributes. Quality seekers differ in not only their higher willingness to pay, but also in the fact they are more likely to be male and they put little importance on production practices, even though they still expect freshness and premium brands (attributes that may directly affect their eating experience. The health and natural consumers are also willing to pay more, but differ in their higher use of health and natural food stores, are even more likely to be female than the entire sample (82% vs. 72%), are very concerned about societal health benefits relative to their personal benefits (a civic-minded reason they purchase natural), and rank the importance of every environmentally- and animal-friendly production practice high.

As a contrast, empathetic value seekers (15% and 27% of the Colorado and national samples, respectively) are not willing to pay a premium price, but could be future consumers if their incomes rise, natural prices decline, or if producers decide to price discriminate and target affordable meat cuts (roasts, ground beef) at price sensitive consumers. They are also females, in more rural areas and rate the importance of most production practices high, even though they currently seem unwilling to pay more for natural meat products.

This presentation on potential Colorado and national natural meat consumers focuses on how sustainable practices may be effectively used as a product differentiation strategy. The most interesting finding is that there is more than one "type of consumer" interested in niche beef products, and that the product development and marketing strategies needed to attract these different segments may differ significantly.

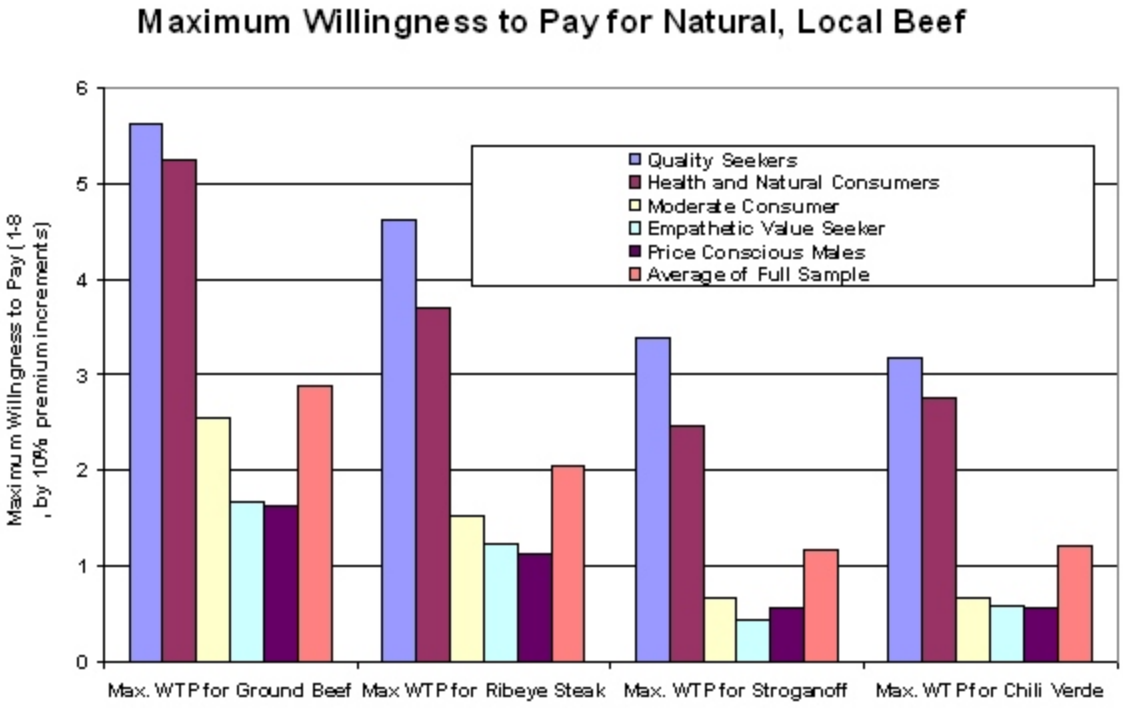

Figure 1-Consumer Willingness to Pay by Consumer Profile

Using the Web to Connect Buyers and Sellers of Small Ruminants

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SheepGoatMarketing.info
A national resource for sheep and goat marketing...

Introduction
The per capita consumption of lamb and mutton is estimated to be only 1.1 pounds (in 2002) as compared to 4.5 pounds in the late 1960's. Most Americans do not eat lamb, while some consume much more than one pound. Lamb and mutton imports currently account for more than one-third of U.S. consumption. Separate statistics are unavailable for the consumption of goat meat.

The typical lamb consumer is an older, relatively well-established ethnic individual who lives in a metropolitan area like New York, Boston, or Philadelphia in the Northeast or San Francisco or Los Angeles on the West Coast. Lamb consumption has remained constant among Middle Eastern, African, Latin American, and Caribbean consumers. Contrary to the overall declining trend in United States' lamb and mutton consumption, there is a growing, high-value market to be found among the American Muslim population. Population demographics favor an increase in lamb and goat meat consumption.

History of the Web Site
In 2001, the American Sheep Industry Association filed a section 201 trade grievance against imports of New Zealand and Australian lamb. While the case was eventually overturned, the sheep industry received a $100 million assistance package from the U.S. government. The purpose of the assistance package was to restore the competitiveness of American lamb. Some of the assistance package was used for competitive grant funding. Cornell University received a USDA marketing grant and developed the Northeast Sheep & Goat Marketing Program (NESGMP). One of the accomplishments of the NESGMP was the creation of a web site (www.sheepgoatmarketing.info). The grant ended in 2003.

In 2001, Maryland Cooperative Extension developed an online directory of sheep and goat producers. The purpose of the directory was to help producers sell their market animals, breeding stock, and other products and to help buyers locate the same. In 2004, Maryland Cooperative Extension received a Northeast SARE grant and developed the Mid-Atlantic Sheep & Goat Marketing Project (MASGMP). The purpose of the MASGMP was to build upon the accomplishments of the NESGMP and extend its efforts further south into the Mid-Atlantic States.

The SARE grant provides funding for a part-time web master (10 hours per week for 2 years). As part of the grant project, the Northeast Sheep & Goat Marketing Program web site is being expanded into a national resource on sheep and goat marketing with a focus on the ethnic/religious markets for lamb and goat. The Maryland producer directory is being combined with the NESGMP directory into a national database of sheep

and goat producers. The entire web site is being converted to a database to allow more automation and interactivity. The web site – www.sheepgoatmarketing.info – is a joint project between University of Maryland Cooperative Extension and Cornell University.

The Web Site

While there is a strong demand for lamb and goat meat from ethnic customers, the marketing infrastructure is generally lacking, and buyers and sellers often have difficulty making connections. As a result, the primary objective of the web site is to connect buyers and sellers. The web site contains the following sections:

1. About
2. Education
3. News
4. Marketing Directory
5. Producer Directory
6. Calendar
7. Links
8. Market Inquiries

The education section includes an ethnic calendar and on-farm slaughter poster, as well as various articles pertaining to the ethnic/religious markets for lamb and goat. The interactive portions of the web site include the producer directory, marketing directory, calendar of events, and market inquiries.

The producer directory contains listing of sheep and goat producers with breeding stock, market animals, and other products to sell. Producers may enter their own data. Currently, there are over 500 entries. The Marketing Directory contains listings of live animal markets, livestock auctions, livestock dealers, livestock haulers, livestock processors, marketing cooperatives, meat wholesalers, meat retailers, and feeders. These entries are made and updated by one of the web site administrators. The Calendar of Events lists events pertaining to sheep and goats. Users may enter their own information to the database. Market Inquiries list sheep and goats for sale and wanted (to buy). Buyers and sellers enter their own information into the database. During the holiday seasons, there are special listings of lambs and kids. These lists are compiled by one of the web site administrators.

Future Plans for Web Site

In recent months, the web site has experience difficulties with the server at the University of Maryland. This has limited progress. In the future, the web site will be expanded to include more listings from more states. More sections of the web site will be automated with database programming, improving the web site's interactivity. Eventually, users will be able to edit their own listings. Currently, changes to entries have to be made by one of the web site administrators. The web site will be made more visually appealing.

Web Site Impacts

A goat producer attributed 15 sales to his listing in the directory

A sheep/goat producer sold animals within a week after listing his farm in the directory.

A goat producer made his first on-farm sales to the ethnic market after listing his farm on the web site.

A producer said, "Thanks to your web site, I have every goat born next spring sold, as well as orders for various products."

A Virginia sheep producer with 700 ewes made a connection with an ethnic lamb processor in Connecticut. Thanks to the web site, he has all his wether lambs pre-sold for a premium price.

Accessing New Markets: Challenges for Small Farmers

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This presentation is based on 25 years of experience working as an extension educator working with small farmers. The information being presented is not based on research results; rather it is my observation and assessment of the challenges that small farmers face in marketing their products. It is important to clarify that the small farmers I have worked with include primarily beginning farmers who started out direct marketing their products to consumers and then expanded into direct to retail and wholesale marketing activities. (Most achieve sales between $40,000 to $120,000.)

The challenges small farmers face are both internal to the farm operation as well as external from the marketplace. Size does matter and for a small farmer to succeed, it is important to grow for the market. As educators, our role in helping small farmers grow is to understand the marketplace so that we can help match the producer's capabilities with the market's expectations. I call this "Right Sizing" – linking producers of a particular size with markets of a size that they can serve successfully.

Small farmers often struggle to expand the scale of their operation, as it is not incremental. A beginning farmer who is successful at farmers' markets may need to expand production three or four fold to become established in new market venues such as sales to restaurants, retailers of wholesalers. Expansion from a small fairly self-sufficient farm into a larger enterprise requires more inputs (labor and equipment) to generate the additional output. To justify the added cost, the output has to be significantly increased. Many small farms may not have the internal capacity to expand into new markets. Financing an expansion or management skills pose limitations for some. Labor is another limitation. Finding markets that allow incremental expansion of a small farm enterprise is ideal though not available in every locale.

Marketing challenges also vary significantly by type of product. Dairy, livestock and poultry products are subject to more market regulation than fruits and vegetables. Thus producers of meat-based products have additional regulatory costs associated with selling their products. Regulations can limit participation in certain market channels. As food safety and security regulations become more stringent, it will become ever more challenging for small livestock producers to meet regulatory requirements.

Industry consolidation has played a played a significant role in reducing marketing options for small livestock farmers. During the past 50 years, the markets for dairy, livestock and poultry have become ever more concentrated hence small livestock farmers are impacted both by low prices and limited markets. Local and regional marketing of fruits and vegetables has not been impacted to the same extent in part because these have been consistently available at local outlets such as farm stands.

Consumer preference for fresh local produce has played a significant role in revitalization of direct marketing which was faltering until the 1970's when farmers' markets started making a comeback. Over the past 35 years, there has been a significant expansion of direct marketing. While fruit and vegetable producers have been more engaged in direct marketing from the outset, now all

types of producers of livestock products and added value agricultural products are found in direct consumer or retail venues.

Consumer interest in fresh foods produced closer to home with fewer chemical inputs is a driving force behind the expansion of direct marketing. This has enabled more small farmers to connect to the marketplace in new ways. However, there are challenges. One is that of unrealistic expectations about the demand for locally produced products. Small farmers often fail to critically assess the demand for their products in the marketplace. Furthermore, since many buyers lack experience dealing with local suppliers, farmers must be prepared to "push" their products with potential buyers. This activity of marketing is highly time intensive and often conflicts with time-spent farming.

While direct marketing has provided opportunities for small farmers, a real challenge is imminent. For the first time in decades, consumers are facing a significant increase in energy costs that will impact spending in other areas. The commitment to purchasing foods from local farmers may be overshadowed by their need to economize. This can impact farmers in two ways: consumers may choose to buy more foods from conventional grocery and big box retailers because of cost and convenience—lower prices, one stop shopping, less gas. This will require small farmers to develop new strategies to attract and retain customers.

Rising energy costs are also impacting retail and wholesale buyers. Shipping costs have increased sharply due to rising gasoline prices. Placing further downward price pressure on distant suppliers may not be an option; hence, food costs will rise at the consumer level. Whether the increased cost of shipping products from distant sources makes local supplies more attractive remains to be revealed. If farmers work collectively to offer a price advantage, the opportunities for local producers could expand. A regional food economy could reemerge with the additional benefit of increasing food safety and security.

What is clear regardless of the market channel being utilized by small or large farmers, margins are narrow and the marketplace is constantly changing. Farmers must remain alert and flexible. Challenges that arise are not without opportunities. Further discussion of the challenges and opportunities associated with major market channels follows.

Direct Marketing Challenges and Opportunities

Over the past 35 years, direct marketing has expanded to include many new models. Farmers' markets, sales at the farm, roadside stands, farm stores, community supported agriculture, pick-your-own and agritourism are some of the location-based activities that small farmers participate in. The Internet and mail order are additional tools by which small farmers access consumers directly for sales.

The key challenge for direct marketers is attracting customers and building a loyal clientele that enables the farm to survive. Indeed many farmers who have either started out or shifted into direct marketing are realizing a high degree of success. Sales at thriving farmers' markets can be as high as $100,000 per season per farm and successful PYO/Agritourism ventures may be operating multi-million dollar enterprises.

The success of direct marketing is attracting more individuals to farming, some see it as a retirement activity and others are seeking a business opportunity. Both types seem to have romantic notions about the opportunities and what is involved. Some quickly find that sales via farm stands or farmers' markets are small, especially as they seek to establish themselves among the competition. At the Ithaca Farmers' Market, which is a very successful market, it is my observation that a small farmer has to be present for 3 years before sales begin to cover costs. The same can be said of

roadside stands—it takes time to build clientele. This needs to be factored into the start-up phase of a business. Very few new farmers develop sales projections to help them accommodate 3-5 years of start-up.

Another challenge for small farmers is that many communities may not have the population and demographics to support successful direct marketing. This requires a variety of strategies to develop a customer base. Many small farmers use multiple direct market channels to increase customer numbers and sales. In Ithaca, none of our small farmers participate in only one direct marketing strategy. For example, they may sell at the farmers' market, operate a CSA, or sell to restaurants or specialty food stores in order to generate sales that approach a full-time income, and many rely on part-time off-farm work for benefits and living expenses. One strategy to overcome the population problem is to take product to urban markets, examples of this include farmers that drive several hours to NYC Greenmarkets or who offer CSA shares to urban consumers or that collaborate on delivery to urban markets.

Additional innovative direct marketing strategies are emerging to get local product into the stomachs of local consumers; these include home delivery and cooperative farm stores offering a wide variety of local products. Undoubtedly more initiatives will emerge out of necessity.

Retail Marketing Challenges and Opportunities

Retail marketing, as I define it, includes sales from the farm to restaurants, specialty food stores, and grocery chains…where the farmer is once removed from the end consumer. The retailer in these situations is motivated to feature local farm products. The benefit of selling retail is that farmers can access more consumers and prices, while lower than direct sales, are a bit better than conventional wholesale. Each of these channels has its challenges. High-end restaurants interested in local farm products are not big volume users, demand the highest quality, and some have the reputation of being slow to pay. Specialty food stores and grocery chains may purchase more but also expect standard packs, grade and quality. It is the more experienced farmer that can meet these demands. They can also be tougher on prices and generally pay on a monthly schedule.

Institutional Sales Challenges and Opportunities

The growing farm to school movement is creating new marketing opportunities and challenges for small farmers. The first reality is that school food service directors are required to keep costs per student down through use of government commodities and by serving foods that require little additional prep time thus saving on labor. Thus there are very few fresh, whole food items being utilized in the school kitchen. Some local products that have potential include apples and other fresh fruits, potatoes, onions, lettuce, and perhaps hamburger. This will change as concern over the diets of children is shaping policies that make it more feasible for small farmers to supply a school district. Costs are still of concern to school districts, therefore, low prices make the school food service market less attractive to farmers unless they find a way to specialize in this niche.

In investigating opportunities for institutional food service sales, a myriad of additional barriers to doing business arise for small farmers. These may include the following: requirement to carry a high level of liability insurance, paperwork to become an approved vendor, refrigerated trucks, traceability, HACCP regulations, etc. In addition, these venues, just like schools, operate a tight ship, with targets established for what they can pay per meal, and they limit the amount of cooking required to save on labor costs. Thus products they demand in fresh form are few. Just as with schools, an individual farmer would need to become specialized in serving this market.

Another strategy would be for groups of small farmers to work with a distributor who can assume the business functions and overhead associated with sales and delivery requirements.

Wholesale Marketing Challenges and Opportunities

Small farmers involved in traditional wholesale markets tend to be those who are on the "larger" side of small (by USDA definition). Wholesale markets for the purpose of this paper are twice removed from the consumer. In other words, the broker/distributor takes possession of the product and resells to restaurants, food stores or institutions that in turn sell to end consumers. Opportunities for local sales to brokers/distributors are increasing as the demand for local products is being pushed backwards up the marketing chain. The wholesale buyer, in order to retain contracts, may be being forced to seek out local sources. As an example, Cornell University has changed its contract to require their produce distributor to supply 25 % from NY farms. Another local produce distributor is being asked by his restaurant customers to supply local products. Additionally, a major NYC distributor is actively seeking supplies of specialty products from small farms. This shift in the marketplace, driven by consumers, is huge and offers increasing opportunities for smaller farmers to specialize in meeting volume demanded by larger consumer markets.

Ultimately, for growers to succeed in any of these marketing arenas, they will need to become more intentional in their marketing efforts. More time must be spent on meeting the demands of consumers. However, when products can be supplied at a quality, price and location that is optimal, fair and convenient, opportunities will increase and small farmers will once again become significant local and regional players in the food supply system.

Evaluation of Three Small Farm Feeding Regimens for Beef and Small Ruminant Relative to Market Value

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The role of extension personnel is to provide realistic and practical information to community based clientele in order to accomplish cost effective outcomes and impacts. Cattle production is no exception. Extension personnel are in a crucial position to provide practical information to producers based on applied science and research. Limited resource producers especially rely on extension personnel to assist in developing programs that can be consistently managed and sustained.

The diversity of programs and methods of raising cattle and small ruminants make this area one that requires sound science and sustainable models. A study was conducted to gather data for use in limited resource beef cattle programs in fifteen counties in northern Florida. Information derived from the study could be used by extension personnel to assist limited resource farmers in these counties to make decisions according to Best Management Practices to achieve target weight gains in typical cattle operations. As a result of the knowledge gained, extension personnel will be able to provide science-based information to small and limited resource farmers that could enhance on farm cattle production.

Cattle production is a major industry that includes both large and limited resource producers. Comerfort, et al (2001) reported that the United States is the leading beef producer in the world. Almost 26.9 billion pounds of beef were produced in the United States in 2000 and per capita consumption totaled 78 pounds. USDA reported 62 pounds per capita consumption in 2001 (USDA.GOV).

A major concern of all cattle operations, is maintaining an effective feeding program. Since feed account for over 50% of the cost of production, both limited resource and large cattle producers are challenged with utilizing cost efficient feeding programs to raise cattle to target weights. Traditional small producers will raise cattle relying on pasture in a cow-calf or stocker herd. An established practice of supplementing cattle feed with sub-therapeutic levels of antibiotics and antihelminths have long been practiced as an aid in weight gain. However, there is empirical evidence that the strategy of feeding medicated feed may be contraindicated. The use of these substances could possible have an impact that could lead to antibiotic and/or parasite resistance

Materials and Methods

The experiment was conducted under limited resource farms conditions in north Florida. The objective was to determine whether or not a specific feeding management system, significantly affected the target weight (market weight) of cattle raised under limited resource conditions. Three groups of weaned crossbred Brangus cattle (10 per group) were used in this experiment. The animals were weighed on a monthly basis. The initial weights were taken in June 2002 and the final weight was recorded in December 2002.

Table 1 Compositional Profile for feeding rations
Profile of Grass using kahdahl method

Protein%	11
Fat %	3
Fiber %	74

[a]AOAC (1995) methods were used to determine compositional values.

Table 2 Composition of Medicated and Non medicated supplements

Composition	Medicated	Non Medicated	
Protein %	12	12	
Fat %	1	3	
Fiber %	8	15	

Compositional values were supplied by the feed manufacturer

Results:
Our study concluded that animals fed on non-medicated (Super 12) rations gained significantly more weight when compared to the other groups. Inconsistent with our expectations, the medicated group did not gain significantly more weight than the graze only group. The results of this study suggest that feeding cattle on supplements including medicated and high protein feeds do not significantly improve weight gain in a cow calf operation. In consideration of cost of feed, it would appear that limited income and small producers can feed their herds to market weights on farm conditions by providing high quality pasture with a good rotational grazing strategy. This data can be used by extension to educate and train the small beef cattle producers regarding sustainable and affordable feeding programs. It can be used to teach limited resource farmers how to realize a profit margin from cattle operations, especially as it relates to high quality pasture grazing as compared to supplemental feeding.

The implications and significance of this information:
Extension programs can be further developed to train small and limited cattle producers to:

- Apply a pasture-based feeding program to grow in production based operations.
- Incorporate feeding programs with herd health management programs in order to maximize weight gain and decreased loss.
- Develop effective and prudent parasite control in concert with enhanced pasture rotation, new animal control, and strategic deworming programs.
- Recognize advantages of feeding a combination of high quality grass and high quality supplement for cost effective feeding of cattle.
- Practice the prudent use of medicated feed that is environmental friendly and limits food safety risks.
- Develop and maintain effective record keeping systems on weight gain and cost of feed as a valuable tool in management decisions.

Although this was a limited study, extension personnel can use the data to more effectively advise small and limited personnel in sustainable production based cattle operations. Additional studies should be conducted to examine the duration and cost of feeding medicated feed. The use of antibiotics and parasiticides in animal feed should be further investigated.

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Making Educational Sense of Market Planning for Small Farmers with "P", "C" and "Z"!

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Introduction
Marketing is seen as one of the great challenges facing small farmers. Small farmers frequently express their willingness to handle production but then hope to leave marketing to someone else. Or, they just throw up their hands and end up at the mercy of the market receiving whatever price is offered. Research has shown, however, that successful small farms do not abandon the market to someone else. They are actively involved in their own marketing (Johnson & Perry, 1999).

Extension and other support services tend to do not much better in terms of actually assisting small farmers to market their products. Campus-based faculty members sometimes give the impression that market research is a very complex and convoluted science. This too can be a significant disservice to Extension and to their clientele. Market research conducted by large corporations and taught as the models and case studies in schools of business can be very complex and be off-putting for Extension outreach use. In addition, economics is often seen as the reserve of campus "experts" or gurus, whereas Adam Smith (1776) has much to offer people trying to understand how markets function.

Small farmers have very real educational needs in terms of marketing. They, especially as direct marketers, need to understand what their customers want, when they want it, where they want it, what they will pay for it, and how to communicate with the customers. Small farmers need help to develop these skills. Extension can offer educational programs to help farmers understand these topics. However, they too need guidance and support, to become successful educators in marketing skills. Then, they could see significant impacts as their small farm market audiences become educated to be able to find appropriate marketing answers for themselves.

Presentation
This presentation offers approaches for outreach educators to use so as to explain marketing basics to farmers and marketers. It sees a model in the train-the-trainer model of ordinary Extension In-Service training or of the Sustainable Agriculture Research and Education Professional Development Program. It explains these basics in simple terms and it offers ways to operationalize the ideas of basic marketing by small farmers and marketers.

The present program also offers some simple steps of market research by small farmers that do not have to be an overwhelming challenge. It offers simple steps that can be followed by small farmers, their extension partners, and others, interested in helping direct marketers understand their customers. It offers suggestions for tools, as used to assist small farmers in North Carolina, as well as simple market observation techniques to assist producers to develop their own marketing skills. These steps provide the starting point for market planning, allocation of market resources, and ways of using information for production and marketing decisions. They also can then be built into evaluation feedback loops for program evaluation as part of the implementation of an evaluation plan.

What is marketing?
Marketing text books usually define marketing as the total process engaged in order to achieve customer satisfaction. See, for example, the presentation offered in Kotler and Armstrong (1987), preface and chapter 1. In another textbook, it is argued that that goal of achieving customer satisfaction is met by a series of management decisions made by sellers, based on their knowledge of customer wants and needs, competition and other market environmental factors. For example, Aaker, Kumer and Day (1998) layout the broad parameters of market research as being the way-by-which informed decisions can be made by marketers. Successful marketing- achieving customer satisfaction- is successful because of insight into the consumer and the marketing context. According to Hiebling and Cooper (1996) marketing is the "insight developed through a deep understanding of the target market, the business environment and the competition". These texts, used in business courses emphasize the complexity of the task. But they should be studied and used to provide us with the goal for our educational programs for small scale farm marketers.

Market Research-steps to understanding the customer
It is obvious that the very important first step of the process must be to understand the customer. Jay Conrad Levinson (1998) describes key ways that small business people can conduct essential business steps on a "shoestring" budget in his acclaimed *Guerrilla Marketing*. Basic to market research is "ask the customer". It can be done by anyone and is essential for business success. Direct Marketing offers perfect opportunities for doing just that on a regular basis- face-to-face.

In addition there are several other possibilities for direct marketers to glean information from customers. For example, there is the "Dot Self Survey" method of market research. We have used it at Farmers Markets but it could be used in roadside stand situations and other venues. This method also allows for customer suggestions and comments.

Traffic flow patterns can be important too. For this, we use the "Customer Flow Counts" with hand count machines. Using this method, better display and merchandising steps can be taken so that they are appropriate to traffic flows.

Finally there is electronic mail messaging to maintain dialogue and to keep customers in the loop. Community Supported Agriculture can use this method as well as regular feedback forms in the give and take of the supply boxes.

No comments on market research would be complete without reference to the wonders of "Google". Web explorations of local demographics can show the trend of customer patterns for the present and the foreseeable future. Detailed projections of business and economic development plans might provide suggestions as to how customers can be met on their own turf.

Responses to Customer Wants, The 4 "P's"/ "C's" and "Z's"
Once people involved in direct sales of farm products obtain information about their customers and their wants, then they can plan how to respond. Small farm direct marketers are business people just like everyone else. Their point of sales may only be a three foot by six foot table at a Farmers Market, but they face the same challenges of achieving customer satisfaction as any business person, large or small. Indeed, vendors at Farmers Markets must recognize that American customers expect their shopping experiences to conform to certain set standards and to ignore these is a way of courting disaster (Underhill, 1996).

Extension can help marketers to respond with a useful explanation of the 4 P's of marketing. Study of options in the 4 "P's" is built on a rotation of the perspective so that the 4 P's become the 4 C's of customer satisfaction. A useful Extension program can then bring these perspectives into the direct market context by looking

at the 5 shopping Zones described by Paco Underhill. Underhill's research shows that there are five "zones" in the American shopping experience. These are; the Landing Zone, the Transition Zone, the Destination Zone, the Transaction Zone and the Exit Zone. These are relevant from the biggest to the smallest retailer. Awareness of customer expectations allows small marketers to provide positive shopping experiences and hence increase sales. These issues are addressed in the presentation in the area referred to as the "Z's".

The program is presented with power point slides. It is available for anyone interested in having a copy of it for in-service training with Extension or other adult educators. There are also a short video and handouts used as take-home check sheets for direct marketers. These are available to be shared with program participants. The references cited below offer a base from which to build a sound practical, useful Extension educational program. Small farm direct marketers need us to offer this educational support.

Some Useful References

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Jackson, C. See the website for the Appalachian Sustainable Agriculture Program. http://www.asapconnections.org/index.html.

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Levinson, J.C. (1998). *Guerrilla Marketing; Secrets for Making Big Profits from your Small Business* (3rd Edition). Boston, MA Houghton Mifflin.

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Underhill, P. (1996). *Why WeBuy: The Science of Shopping*. Baltimore MD: Penguin Books.

Examples of Extension Materials from my own NCA&TSU Cooperative Extension Educational Program. I will be happy to discuss and share these and other materials.

O'Sullivan, J. M.

"Know your market first. Video (13 min).

"Winning Shoppers for your market". Video (13 min).

Building a Bridge to Your Customers, a marketing handbook

Direct Marketing- A hands-on display (with T. Nartea).

Using GIS Tools to Improve Agricultural Marketing and Local Food System Mapping

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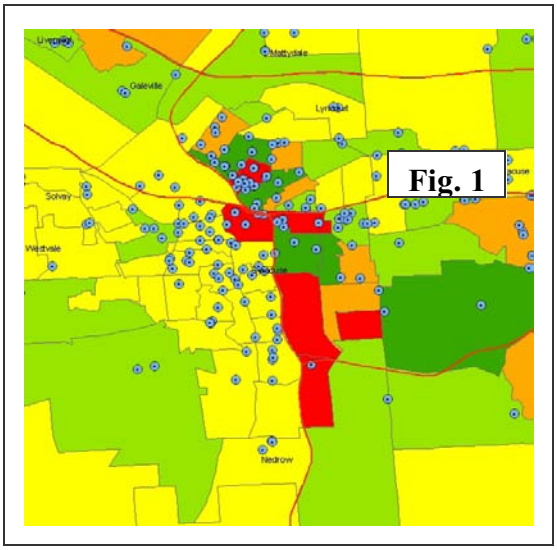
Farmers Are Looking for More Sophisticated Marketing Tools

Recent research conducted by the Community, Food, and Agriculture Program (CFAP) identifying farmers' needs confirms the work of others (e.g., Bills, et al., 2000) indicating that *New York farmers want more marketing information and tools to take advantage of the immense scale and diversity of the state's consumer base*. Focus groups of three samples of NY State Farmers' Direct Marketing Association (NYSFDMA) members showed that farmers want: (a) more information on what motivates customers to buy; (b) techniques to understand who their customers are; and (c) information Cornell can develop to educate consumers about local products (e.g., the health benefits of particular foods).

CFAP is exploring methods of providing low-cost information and tools not previously available to the average farmer nor to many segments of the agribusiness community. With these tools, farmers will be able to generate maps at the census-tract (neighborhood) level showing the location of concentrations of potential specialty-dairy-product consumers, gourmet consumers, organic consumers, kosher, and other ethnic consumers and the like. Producers, Extension agents and commodity organizations will be able to identify and map restaurants and grocery stores, as well as local public schools, hospitals, jails and other public institutions that might buy New York agricultural products.

Examples of the Application of GIS Technology to Market Analysis

Perhaps the most simple use of geographic information systems in market analysis is to create color maps depicting demographic data superimposed with symbols marking the location of potential buyers. Figure 1 is a map with a base layer at the census-tract level in the Syracuse, NY, metropolitan area showing the concentration of Asian residents (the darker the color, the higher the percentage of Asians).

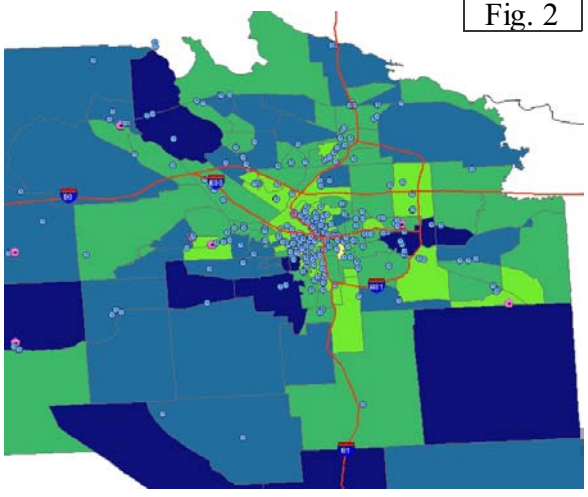


The location of retail food businesses are superimposed (purple dots). Imagine how useful this information would be if you were a vegetable grower interested in targeting Asian consumers. This map provides you with a simple understanding of the relationship between your target consumers and retailers in their neighborhoods. A bok choi grower or kim chi processor now knows which food retailers to contact. Furthermore, an "identify" feature allows the user to simply click on the retail store symbol and a window will pop up providing the contact info for that particular store. CFAP is

preparing to develop an on-line version of this technology similar to what is already available to Illinois farmers, called MarketMakerTM. It consists of a general GIS-based demographic information mapping tool, and geocoded business listings. Farmers, cooperatives, distributors and other agribusinesses are already able to visit MarketMaker and conduct basic demographic and business information queries.

At CFAP we will develop a second and more advanced set of marketing tools to permit a look not only at demographic factors but also attitudinal and behavioral information about food preferences, purchases, etc. MarketScapeTM will be designed for producers, farm organizations, Extension field staff, and ag. development professionals who want to conduct more thorough market analysis. In **Figure 2**, for example, data from a survey of New York State consumers (Empire State Poll, n= 1,000) was used to construct this map depicting consumer "propensity to buy local" in the Syracuse, NY, metropolitan area. The darker the color of the census tract, the more consumers in that tract matched the demographics characteristics of consumers in the Empire State Poll who said they would go out of their way to buy locally produced food.

Fig. 2



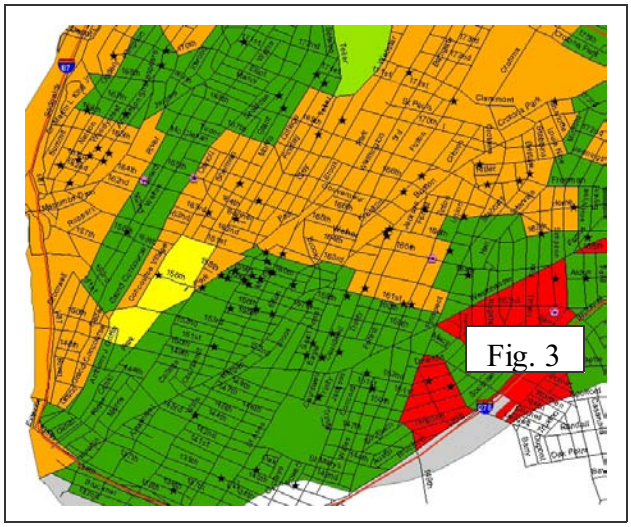
Collecting and geocoding survey data like this is a laborious and expensive process. The data available to be mapped in MarketScape include several dozen databases of additional marketing clusters, such as databases of potential institutional markets like hospitals, nursing homes, public schools and universities. MarketScape subscribers will also have the capability to identify concentrations of niche markets, such as consumers of organic, gourmet and ethnic specialties, as well as target concentrations of consumers of specialty products — from artisanal cheeses and value-added fruit conserves, to maple-sugar specialties and herbed sauerkraut. Covering training and technical assistance will likely require charging a nominal annual fee (e.g., $500) once the proposed project has reached term.

Implications of GIS Technology in Food System Planning

Finally, there is longstanding interest among food security organizations, urban planners, and others in New York and elsewhere for new neighborhood and regional food-system analysis tools. Using the latest technology in mapping, planners and practitioners in the food security community can generate maps indicating demographic and socioeconomic status (SES), food insecurity levels, and food consumption patterns at the neighborhood level. Overlaying this colorized information with symbols marking the location of critical food-system infrastructure, such as farmers' markets, CSA distribution sites, community gardens, food stores which accept food stamps, congregate meals sites, food pantries, food banks, and the like, can reveal new insights into the relationships between the needs of the hungry and the food-security resources of service providers.

For example, in the map of lower Bronx (New York City) in **Figure 3**, we can see concentrations of Hispanics (the darker the color, the higher the percentage of Hispanics) overlaid by the locations of Community Supported Agriculture (CSA) distribution sites (purple with dot). Such a map might trigger the question "why don't we have more community gardens in our most densely populated Hispanic

neighborhoods (near Interstate 278 in the lower right quadrant of the map)?"



The above map was generated using ARC MapTM and required census-tract boundary and street-location data, US Census of Population data, and the accurate addresses of community gardens and CSAs. Using the latest GIS technology there is virtually no practical limit to the kinds of SES and point (address) data that can be mapped. (See below for list of proposed data which may be able to be mapped.) However, it should be noted that while this tool is powerful, it is only as useful as the data are accurate. Census and SES data can age quickly, and the locations of local CFS infrastructure can change. Therefore, the data must be continually refreshed, preferably with continued participatory inputs from local frontline service workers. This tool should be used to supplement and/or corroborate, not replace, the local knowledge of such workers.

MarketScape Features

Capable of mapping primary (survey) as well as secondary data;
Zoom feature, streets and highways, labels;
Exhaustive list of demographic and SES variables and CFS infrastructure point data;
"Clickable" symbols with pop-up windows that provide contact info and other data;
On-line for easy access;
Annual data refreshment;
Web site linked to the USDA, the Community Food Security Coalition, and the Community, Food, and Agriculture Program at Cornell; and
Tutorial and case examples of how to use the technology.

Data Modules

Below is a list of the data modules (with indicators) that will be explored. The data is only useful if it is systematically collected, is updated on a scheduled basis, and is relevant to a further understanding the scope and status of the regional food system.

Basic Demographic Data Module
Transportation Systems Module
Socioeconomic Data Module
Food Security Infrastructure Module
Farm Data Module
Value-Adding Infrastructure Module
Marketing Services/Infrastructure Module
Institutional Markets Module
Agency/NGO Module
Agriculture Development Tools Module
Agricultural Services Module
Food Consumption Patterns Module
Market Niches Module

Assessing Direct Marketing Options for Small Farms in the Pacific Northwest

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Washington State University
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Garry Stephenson
Oregon State University
Corvallis, Oregon
Cinda Williams
University of Idaho
Moscow, Idaho

This session presents the combined results of a four-year, USDA-IFAFS study that was initiated in 2001 as a collaborative effort of Oregon State University, Washington State University, the University of Idaho, the Washington State Department of Agriculture, and Rural Roots. The project was designed to document the current status and future potential of locally-based food production and consumption systems in Pacific Northwest at the state and county level. Project components included assessing the feasibility of different direct marketing strategies; evaluating and fostering the development of farmers' markets; and identifying market barriers in federal, state and local regulations and processing infrastructure.

One Market at a Time: What We Have Learned About Improving Farmers' Markets

The economic viability of many Pacific Northwest small farms and the region's potential for establishing and maintaining local food systems is linked to the vitality of numerous independently operated and sometimes isolated farmers' markets. As grassroots non-profit organizations thin on resources, farmers' markets are challenged by widely varying agricultural conditions, population densities and socioeconomic circumstances. How markets address these issues is a major factor in their success or failure. This paper reports on research exploring the traits shared by successful farmers' markets with implications for strategic planning and increased management capacity.

Growth in farmers' markets has been achieved not by the replication of a single successful model but rather by markets following diverse paths that reflect the diverse communities that they serve. Despite this growth, many individual markets remain "works in progress" characterized by both limited financial resources and high levels of manager turnover, changes in location, and modifications in market rules. Over the last five years we have developed and refined research and extension approaches that focus on addressing these constraints without reducing the individuality of markets. This "one market at a time approach" depends on a limited set of easy-to-adopt research methods and an action research approach that improves manager skills and strengthens manager networks.

Assessing Direct Marketing Strategies

Across the Northwest, farmers are employing innovative strategies to develop local markets for their products. Through interviews and in-depth whole farm case studies, the performance of farmers' markets, on-farm sales, CSA, and direct-to-retail was evaluated from the farmer perspective. Analysis of farm management records on case study farms

suggests that direct market farms retain a higher share of gross sales than their conventional counterparts. In one urban county, direct sales of products such as broccoli, lettuce, and apples were resulting in prices two to four times higher than wholesale rates. At least a fifth of the farms in Washington were direct marketing some of their products.

Market research indicates tremendous consumer demand for locally-raised meat products; however, most producers have been unable to access these markets. Project sponsored listening sessions brought together producers and county, state, and federal-level government regulators to discuss the changes needed in county health codes to allow meat sales at farmers' markets and on farms, the changes needed in state regulations to facilitate on-farm poultry processing, and the changes needed in federal regulations to allow co-packing by state certified poultry processors. The ensuing dialogue has resulted in changes to county health codes to permit meat sales at the major urban markets in Washington and new state legislation facilitating on-farm poultry processing on farms with 1,000 birds or less. Recommendations for addressing the additional barriers identified in the listening sessions have been formulated.

The Economic Impacts of Local and Direct Marketing

Using an input/output modeling system based on IMPLAN data, we investigated the contribution of the local food supply to total food consumption in three Northwest states and in three county case studies. The model tested possible scenarios for job and income generation through enhanced local marketing networks. In addition, surveys, interviews, and agricultural census data were used to examine the potential social, environmental, and economic benefits of community based efforts to source more food locally. In one urban county, only two percent of current crop production was marketed directly to consumers. Estimates based on IMPLAN modeling showed that if farmers here sold as much as ten percent of their crops directly to the public, it could mean an additional $6 million annually for the county's farms.

Additional information, reports, and research findings from this project can be obtained from the project website at: www.nwdirect.wsu.edu

What Does it Take to be Successful at Marketing?

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How do producers go about finding markets for their products? This age old question often defines the difference between producers that are successful and those who fail.

To be successful in marketing and business there are a few tenets that producers should consider:

- Do you have a unique selling proposition? Is this market underserved? Do you have a competitive or comparative advantage? Which of these things can your product be: Better than; Cheaper than; or Different than?

- Know the territory is a standard adage in marketing. Many farmers make the assumption "the market is there—and I have the best product and everyone will want to buy my product." You owe it to yourself and many times to your banker to prove that statement. The trap in that statement is the assumption that marketing is all about the product. Everyone should recognize that many of the most successful marketing businesses succeed with inferior product. How? The possibilities for being better include: competitive positioning, packaging, pricing, delivery, margins, service, labeling, customer relations, organization/management, ease of transaction, brand, market share, availability. These are just a few of the other marketing aspects you "win with." Product is only a small portion of the value proposition in a competitive marketplace.

- Some times we hear producers make the assumption that the food industry is an $800 billion dollar business, and it certainly is possible that their product is so wonderful that it can capture a small percentage of that market. We have heard producers make the assumption that they can earn 1/1000 percent of the food market, so therefore they can easily be an $8 million dollar company. While the arithmetic is sound, it is intellectually offensive. You will likely have to elbow someone out of that 1/1000 percent. You've got to earn whatever share you will get, so don't assume it is there just for the taking.

- Isolate your specific opportunity and anchor your claims with solid, third party observations. Letter of interest from customers can be validation. Successful test marketing is always good. Actual transactions trump surveys every time in validating your idea. Go sell something and see how that works.

- Can you make a business case for your product or idea? Ask yourself if this is a: Fad market? Growth market? Is there extraordinary competition? Will you have any revenue diversity? Can you execute a good business model? Will your actual business structure make sense? Test this out on people as if you were asking them to invest in you and your idea. Learn from this so that your explanation of the business case makes sense, not only to you, but to anyone.

- Good marketers have a sound knowledge of their competition.

Producers who say "I have no competition," are a disaster waiting to happen. Most customer needs are already being met by someone and some product. Therefore, your product must replace the other firm's product. What are you going to replace in the marketplace? In his Website, Paul Lopez says "We insist that the business plans we seriously review feature a competitive matrix, i.e., a comparison by relevant features of their product vs. all other logical purchase alternatives. If it isn't as clear as a bell that any fully informed prospective purchaser would be crazy not to seriously consider purchasing the product in question, one knows, at least, that he is looking at a me-too offering with all of the risks that that entails." http://www.nationalconsortium.org/story5.html

- One trap is assuming you have a comparative advantage and no one knows you are there. The marketplace is more transparent than ever before in terms of costs, pricing and even production methods. Competitors know more about the margins in other segments, the price they pay for their inputs and the prices they receive for their product than ever before. The real problem is that most people do not know enough about the value of the product they are producing to know whether their product is under priced or over priced relative to others. Producers have to be learning more and more about the comparative advantage of their products all the time.

- Just don't let the ego get in the way. Let the market tell you what it wants to do. Listen carefully to the market signals. Great marketers are great listeners…to their customers and to the market in general. If you become arrogant and believe you know more than the market itself, you will get your head handed to you. Never become convinced that you know it all or even enough. Maintain a healthy paranoia because it is extremely likely that you should be afraid of the competition, even when you aren't.

- Successful marketers are tenacious. "One of our favorite motivational speakers says that "It's a dog-eat-dog world out there...for forty hours a week. But when you get out to fifty, there aren't as many dogs. And when you get out to sixty or more, it's downright lonely!" There is no attack more likely to succeed than one executed when the enemy is asleep, or having his second drink. Almost everything is stacked against entrepreneurs. They even the odds with, among other things, sustained, superior effort. http://www.nationalconsortium.org/story5.htmlhttp

- What is your business model? How will you actually make money in this business? You have to explain this carefully to yourself, your banker and your accountant. This will define the measures you manage to. Small businesses can differentiate themselves at the business model level. Do you make money on buying inputs very cheap? Do you make money by being the most efficient producer? Do you make money by being able to deliver cheaper than the competition? How do you make money compared to the competition? Remember that perception is reality, and value is created in distribution and via marketing, not in production.

- Have a sound knowledge of the financial dynamics of your business. Farmers don't need an accounting degree, but they need to focus on key results areas, such as: gross margins, return on investment, monthly fixed costs, sales/employee. Get help in setting up your cost accounting. You have to plan which

business measures you will be managing. Without these measures, you cannot know if you are succeeding. Cash flow and new customers are not sufficient measures of short or long term success.

- Have a true understanding of your cash flow. Ask any gathering of entrepreneurs whether they understand that cash is life and there will be nods all around. Then ask them whether they also understand that lack of cash is DEATH and the blood drains out of their faces. The best entrepreneurs equate cash with blood, and part with it only when it stands to directly further their objectives. http://www.nationalconsortium.org/story5.html

- Emphasize working capital. Put together enough working capital to sustain this business through the thin, early days and beyond. Put the business on an accrual accounting basis so you are constantly measuring your financial ratios. These are the true measures of growth in a business. Don't do this for the bank or for the IRS…do it for yourself.

- Your business is a reflection of you. True entrepreneurs take things personally. When they succeed, they know that they deserved to. When they fail, they know that it was their fault. They don't make excuses for past shortcomings. They describe them as lessons learned. They don't look for places to pin blame. When they first smell failure, they fight like alley cats to turn things around, because they see their performance, however good or bad, as a reflection of themselves.

- Execute. It has been said that if you don't know where you're going, any road will get you there. Entrepreneurs don't love planning. Nobody loves planning! Planning is a powerful tool, however, and the best entrepreneurs reduce their pursuit of their strategic objectives down to action plans with detailed budgets, people responsibilities and deadlines, and they monitor the assault on a real-time basis. http://www.nationalconsortium.org/story5.html

- Anticipate what will happen. It will. Although you can't see the future and anticipate everything that will happen, you need to have a fallback plan. By far, the majority of small business startups fail and do so in the first three years. This cold fact could be a good reminder on your office wall right next to the frame with your first dollar earned.

- Get your mental focus right. Peter Drucker is the dean of all business guru's and his suggestion is to replace the word achievement with the word contribution. His reasoning is simply by focusing on contribution rather than achievement you keep your focus on where it should be…your customers, family, employees, shareholders and industry.

- Passion. If you don't have fire in your belly—you will not be successful in your company. If passion is not there, it is not possible for firms to survive the hard times that will happen.

Producers needing advice on successful marketing do have resources to turn to. The Agricultural Marketing Resource Center (AgMRC) is a national virtual resource center for value-added agricultural groups, located at **www.AgMRC.org**. The purpose and mission of the AgMRC is to provide independent producers and processors with critical information to build successful value-added agricultural enterprises.

The Center combines expertise at Iowa State University, Kansas State University and the University of California to assist clients locate the resources helpful to them as they proceed with a value-added agricultural business. The center works with other leading land grant universities on value-added projects. Partial support is derived from the USDA Rural Business-Cooperative Service.

Content

The content portion of the AgMRC Web site is divided into four main sections:

1) Commodities and Products
2) Markets and Industries
3) Business Development
4) Directories and State Resources

The **Commodities and Products** section provides information from the perspective of adding value to the commodities and products traditionally produced on the farm. Examples are corn, beef, fruits, etc. Information is provided along the supply chain from production, processing and marketing for each commodity/product, focusing on marketing. More than 175 commodities are profiled.

The **Markets and Industries** section provides information on the major markets and industries (food, energy, etc.) that producers may enter during the process of adding value to their commodities.

The **Business Development** section focuses on information needed to create and operate a viable value-added business. The information is provided sequentially for use during the business analysis, creation, development and operation process.

The final main area of content is the **Directories & State Resources** section. Several directories were created for the Web site by AgMRC staff, including consultants and service providers, value-added agricultural businesses and specific contacts in each state.

Contact Us

Producers, extension personnel and rural development specialists contact the resource center either via toll free phone at 866-277-5567, e-mail at agmrc@iastate.edu or the Web site, www.agmrc.org.

Profit-Directed Marketing Strategies for Small Farmers through Group Action

Magid A. Dagher, Dovi Alipoe and **Wes Miller**
Alcorn State University
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Introduction

Profit-directed marketing is the organizing and implementing of marketing activities efficiently in order to minimize associated costs, obtain the optimal price for the commodity or service, and maximize returns from marketing. Marketing of agricultural products is essential for small farm viability since it is the revenue generating apparatus or life-line for an enterprise. It has been a challenging activity for most producers who tend to invest more time and effort on actual physical production. As a result, their agricultural enterprises often do not perform well.

Marketing involves several physical and coordinating functions: assembly; sorting, grading, and packing; transportation; storage; processing; wholesaling; retailing; and negotiating terms of trade -- i.e., price, quality, quantity, time and place of delivery, and assumption of marketing risks. Before a producer plants crops or invests in a livestock operation, he should ascertain the strength of demand for his product. Strong demand usually translates into higher prices, farm incomes and profits.

The Agricultural Environment

Small farmers and their business organizations have faced many challenges over the last several decades. Several *major trends* have posed problems for small farmers: substitution of capital for labor, economies of scale in production and marketing, fewer but larger farms, cost-price squeeze, prevalence of pure competition in production agriculture, greater competition from foreign producers, and shrinking share of the marketing bill. These trends have contributed greatly to the decline in the number of farms in the U.S. over most of the last half of the twentieth century. In 1973, there were 2.8 million farms; but today, there are only 2.1 million farms. Less than one percent of the population works full time to grow crops, livestock and fiber. The real prices they get for their products are about the same as those their fathers received forty years ago. This has resulted in small family farms exiting agriculture at an unusually high rate over time.

More recent major trends involve biotechnology and genetically modified crops, food security, food safety and information technology explosion. Additional trends that pose challenges and provide opportunities include growing consumer desire for organically produced foods, exotic crops, functional foods, wholesome foods, higher quality products, niche markets and more.

Small-scale producers have found it increasingly difficult to farm fulltime and generate farm income high enough to a decent standard of living. If the imputed cost of the owner-manager were to be applied against farm revenue received, most producers would realize negative profits or losses. A key reason for this situation is the suboptimal performance in marketing their products. Most do not develop marketing plans in advance. As a result, when they harvest their crops and sell, their take from the market seldom

covers the true cost of production and marketing combined. Most subsidize the operation with their time and effort without explicit awareness that they are doing so.

The farmer, cooperative or other type of business organization is a part of a food system with major sub-systems that involve a great deal of coordination in order to function efficiently and successfully. **Figure 1** depicts a common construct of this system and its key components. It begins with identifying *demand* for a product that one decides to produce. Then, the farmer *procures* the relevant resources required to produce the product. Next, he combines the resources by applying processes that have yielded consistently good results over time in the *production* of the crop. When the crop is ripe or ready, *harvesting* occurs, employing proper harvesting methods. *Post-harvest handling* then follows and typically involves gathering, transporting, storing, washing, sorting, grading, packing and shipping. The primary product enters either the *wholesale* or *retail market*. Of course, final sale occurs at the retail level where consumers purchase the product for *consumption*. If the primary product was *value-enhanced* through processing, then the processed products would flow to the consumer through the wholesale and retail levels. How well does the producer perform in this system?

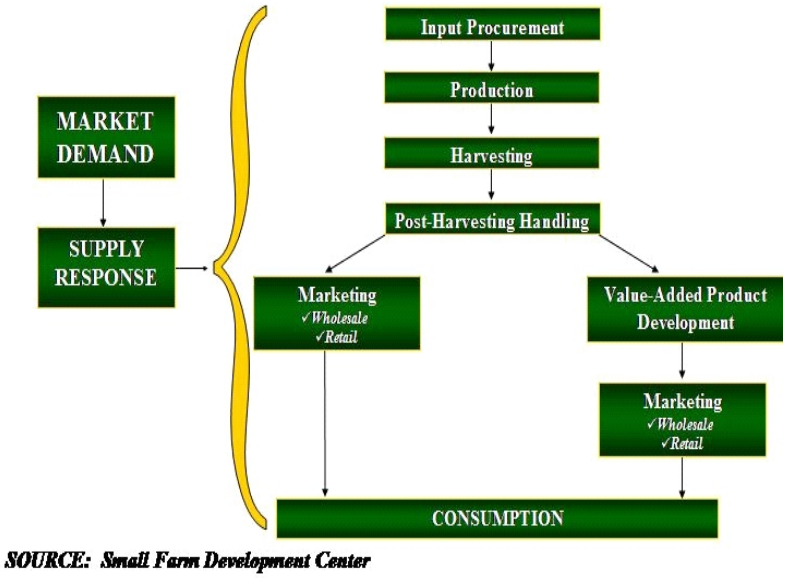

Figure1.Food Delivery System. ***Source: Mississippi Small Farm Development Center, Alcorn State University***

Understanding Markets and Marketing

A **market** is a place or environment in which producers and consumers meet or interact to negotiate the terms of trade, followed by the transfer of ownership of the product to the consumer and cash to the producer. In a nutshell, both the producer and the consumer influence the level of prices. They do so in a free market where the forces of demand and supply work to determine prices that will entice the producer to sell and the consumer to buy.

It is important for the producer to understand the ***fundamentals*** of how markets work. This knowledge positions the producer advantageously to exploit the opportunities available to him. The fundamentals are embedded in the *laws of demand and supply*. Understanding the key factors that influence demand and supply enhances the producer's knowledge so that he designs the strategy that will yield the best return.

Marketing activities are many, can be complex and require resources, both physical and human, which are costly and, therefore, should be planned and implemented efficiently. The more efficient the marketing operation, the more competitive is the marketer or supplier. ***Marketing efficiency*** is achieved by cutting cost per unit of product to its lowest level. In fact, if all costs of production and marketing can be kept at their lowest levels, then the producer stands an excellent chance of achieving the highest profit level possible. Alternatively, if his operation is not profitable, then he minimizes his loss.

Most primary agricultural products are sold in a market environment characterized by *pure competition*. In this type of environment, there are many producers supplying the same product and there are also many consumers buying the same product. Prices, then, tend to be close to the true cost of production and marketing activities. Profit margins tend to be low. Of course, covering all costs is also desirable, even if the net income or profit is zero.

Marketing in its simplest form is about relationships. Most people prefer to do business with people they know.

Profit-Directed Marketing Strategies

Profit-oriented marketing through group action enhances small farmers' capacity to compete for a greater share of the food marketing bill. Figure 2 illustrates the marketing bill which consists of activities beyond the farm gate. These activities account for approximately 80 percent of each dollar spent on food by consumers. In order for farmers to obtain a greater share of consumers' expenditure on food, it is recommended that they actively participate in business forms other than sole proprietorships. These non-individual types of business include partnerships, cooperatives, marketing associations and corporations. They should explore options such as s-corporations and limited liability cooperatives.

Cooperatives play a major role in assisting small farmers with group-oriented involvement. Successful cooperatives do not rest on their laurels. They consistently market on a national and international level to find niches for their products and to establish and nurture relationships that will allow the organization to grow as the produce company, restaurant, hotel, or other client expands. Successful cooperatives consistently solicit new customers while maintaining relationships with existing clients. In the southern region, the level of farmer cooperative activity is high. Each state has several local cooperatives along with some state association of cooperatives. For example, Mississippi has the Mississippi Association of Cooperatives (MAC) and the relatively new Mississippi Center for Cooperative

Development (MCCD). Of course, most of us know of the Federation of Southern Cooperatives which has state associations as its members.

Today, there are many examples of farmer business organizations, mainly cooperatives, that have employed a vertically integrated or horizontally integrated model. They have structured their organizations in this manner in order to better generate product volume, control it, maintain quality and manage product flow from the farm to the consumer. Well integrated operations are able to access markets that the individual cannot.

Agricultural cooperatives become more profitable as they diversify to quickly respond to the demands a changing free market and become part of vertically integrated business plans. Vertical integration reduces risk associated with fluctuations in the free market, providing opportunities for forward contracting, hedging or spreading crop sales. Profit-centered marketing operates from plans which remove the questions: Will it sell? In what quantity? To which buyer? Because of well established and maintained relationships, no farmer or cooperative resources are wasted. Nothing is planted until it is already sold or its market is firmly identified.

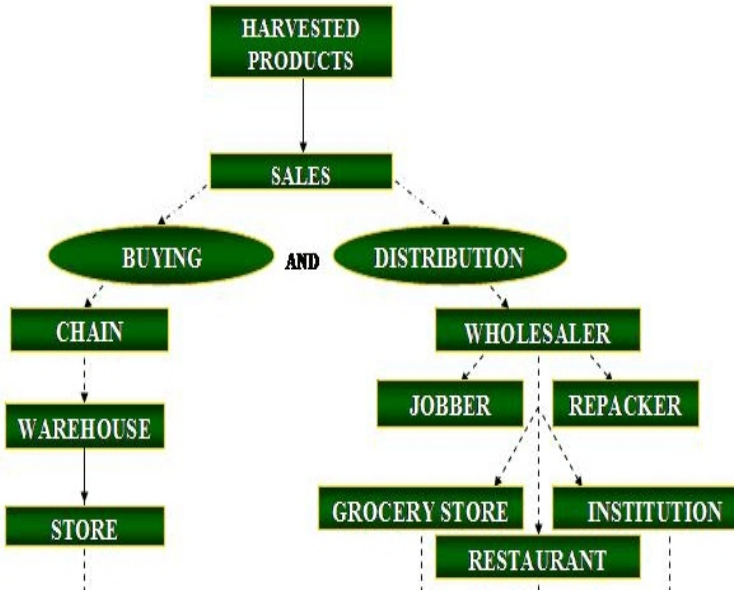

Figure 2. The Marketing System for Alternative Crops. SOURCE: Marketing Alternatives for Small Farmers: Fruits and Vegetables. National Fertilizer Development Center, Tennessee Valley Authority, Muscle Shoals, Alabama

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Maine Highlands Farmers Joining Together To Enhance Marketing Efforts

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Getting Started
Although there are some farm stands, in the fall of 2001 there were no established Farmers Markets or Cooperative Agriculture Markets in Piscataquis County. Farmers are unsure if there is an adequate population base to support these types of direct marketing venues in the area. Some farmers also want to explore value added product manufacturing.

Grants were written to help determine if it is feasible to establish a marketing organization in Piscataquis County for farmers from Piscataquis, Penobscot and Somerset Counties (Maine Highlands Region). Also, these grants will determine the best organizational system and type of marketing method(s), such as farmers markets, selling to institutions (schools, hospitals, etc), suited to the mix of participating farmers. They want to enhance and expand the current marketing methods of farmers in the region without impinging on their current markets. Farmer surveys, consumer surveys and localized map of farms selling agriculture products will be developed.

Fruit, vegetable and livestock farmers from Piscataquis, Penobscot and Somerset Counties (Maine Highlands Region) Piscataquis County Economic Development Council, and University of Maine Cooperative Extension worked collaboratively to develop a new Local Agriculture Marketing group.

The group was successful in developing and getting funding for a $7740 grant from the Sustainable Agriculture Research and Education (SARE) Farmer/Grower Grant program. They also developed Agriculture Development Grants that were submitted to the Maine Department of Agriculture for a total request of $8,500 to assist with joint marketing issues but this grant was not funded.

As a result of the initial meetings to write the grants, one farmer opened up their farm stand and invited other farmers to set up farm stands with their own products in a pilot farmers market venture. While this did not work it resulted in a number of farmers taking farm products from farmers without a farm stand. This increased the type and variety of agriculture products that customers have available to them as well as allow new farmers the opportunity to tap into an established farm stand clientele.

Another farmer is initiating the development of a cooperative agriculture market where farmers can bring their products to one location and have one person sell all the products to customers. This will relieve the farmers of staffing a farm stand during the busy part of summer. This project is still in development.

The group of fruit, vegetable and livestock farmers have formally organized into a local agriculture marketing named the Maine Highlands Farmers to implement the SARE grant and enhance their marketing efforts.

The Maine Highlands Farmers
Since becoming established as the Maine Highlands Farmers, the Piscataquis and Penobscot County farmers with the assistance of Extension Educator Donna Coffin Lamb have been able to enhance their farm marketing capacity, through a

variety of educational programs and projects in collaboration with other member farmers.

In the past two years, this 40-member organization met monthly to work on issues including direct and value-added marketing, signage, insurance, taxation, food stamps, and farmer participation in the Senior Farm Share, Food Stamp and WIC programs. During the summer months they meet at a member's farm and tour the farm to learn from each other.

Thanks to the Sustainable Agriculture Research Education (SARE) grant, a regional survey determined consumer preferences for local agricultural products and uncovered marketing opportunities for area farmers. There are now twenty-six paid members of the Maine Highlands Farm Products Promotion Group with a full slate of officers and board of directors.

Projects

1. Farm Map for Consumers

The initial farm map had 2,000 full color copies printed. Distribution was through the Chambers of Commerce, local businesses, town libraries and the farms themselves. The map was so well received that the group sought additional funding to print a larger map with more farms. A subsequent grant funded the printing of over 20,000 copies of this farm map in 2004.

2. Food Cupboard Grants

This farmers group also received two other grants from local foundations to purchase fresh vegetables, fresh fruits and local meats from member farmers for the local food cupboards (total $8,000) It the Piscataquis Public Health Council a Healthy Maine Partnership Grant and the Maine Community Foundation Grant that funded this effort. Along with the food, clients received Extension publications on the care and use of the various food products that they received during the summer. The farmer group proved that they were able to jointly provide in-season products to a number of sites in the two county area. They submitted a grant in 2005 for their food cupboard project to cover both Piscataquis and Penobscot Counties but this was not funded.

3. Consumer Survey

The consumer survey was mailed to 2,000 rural homes and 2,000 urban homes to help farmers learn how to better serve these populations.

- Preliminary results of the rural residents have found that 72% of consumers purchase apples from direct farm markets and 67.5% purchase sweet corn from these markets.
- Also 56% of rural residents report that they process food products in bulk for the winter including 42.5% process berries, 36.5% process tomatoes and 21% process squash.
- On the average consumers travel 11.7 miles to direct farm markets, while some will travel up to 50 miles to go to a farmers market.
- About 10% of the consumers noticed either poor flavor in their vegetables, bruised fruit or tough vegetables from direct farm markets. Limited hours of farmers markets disappointed consumers. But the number one disappointment with farm stands was high prices.
- Almost half of consumers spend less than $10 at each farm stand visit. These consumers reported that they purchase vegetables 80% of the time and fruits 65% of the time. A quarter of consumers spend between $10 and $20 at a pick your own farm and almost half the time they are purchasing fruits.

This survey has resulted in an Extension publication ***Why Consumers Buy---and Don't Buy---Your Farm Direct Products*" Item #1160,** by Donna Coffin Lamb, Hsiang-Tai Cheng, and Lili Dang. University of Maine researchers surveyed consumers in the Maine Highlands region to assess marketing opportunities and barriers for local farmers. The findings from this watershed survey are presented and analyzed in this 12-page publication. Twenty-two charts provide visual

enhancement of data such as how rural and urban consumers find out about farm direct outlets, how far they are willing to travel, seasonal spending trends, and product preferences. Identifies customer complaints about types of outlets and highlights opportunities for farmers who want to increase their farm direct business.
http://extensionpubs.umext.maine.edu/

4. Other Collaborations
Members of the group coordinated a Maine Highlands Farm Products Booth at the recent Heritage Festival at the local fair grounds. Nine members provided products to decorate and sell at the booth as well as staffing the booth. Products included pumpkins, apples, maple syrup, vegetables, soap, sheep skins, jams, jellies, antlers, and baked goods.

While the weather for the first day was questionable and the crowd was small the second day was canceled due to the downpour of rain. But the members learned that it was possible to join together to offer event participants a cross section of products from local farmers.

5. Regular Meetings
The group continues to meet regularly on the fourth Wednesday of the month. Topics have included:

- Food Stamps and WIC for Farmers
- Farm Marketing Studies
- Consumer Survey Preliminary Results
- Signage for farmers & Farm logo development
- Food safety of value added products
- Workers' compensation
- Types of Insurance
- Farm land taxation
- 2004 summer meetings have included farm visits to see other farms and members operations and focus on their marketing methods.
- Farm Fresh Marketing Opportunity
- Maine Revenue Service Department Division of Property Tax on property tax alternatives for farmers learning about open space, farm use and forest use property tax designations.

Benefits to Members and Community
As a result of participating in monthly meetings and learning about new programs and grant opportunities:

- six farms are now accepting WIC coupons
- six farms have Senior Farm Share contracts (over 250 contracts @ $100 each)
- one farm received a grant to provide nutrition education programs at the farm during the summer of 2003 and 2004.
- five farms with farm stands are carrying products produced by five farmers who do not have a permanent retail stand.
- Ten to twelve farms are provided over $8,000 worth of food to local food cupboards funded by local foundations.
- Three farmers participated in the Phase I of Farms for the Future and two farmers were successful in applying for the Phase II of this program and they each qualified for up to $25,000 grant to help with implementation of their farm plan.
- 2004 farm map was developed and 21,000 copies are being distributed throughout the two county area.

TEACH: Teaching Educators Agriculture and Conservation Holistically

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Learning Objective
TEACH Participants increase their understanding of the opportunities and challenges for natural resource conservation and rural poverty reduction in tropical America

Specific Learning Themes
- What are the implications of a changing macro-environment on rural households and environmental conservation efforts?
- What are the strategies for small rural producers for increasing their competitiveness in increasingly globalized markets?
- What opportunities exist for reconciling the twin goal of environmental conservation and increased income generation?

Aspects to be considered
- Large scale production of tropical fruits for export markets
- Organic production and marketing in local markets
- Development of agro-tourism
- Cooperative business development by (indigenous) women
- Opportunities for adding value to traditional tropical crops (e.g., sugarcane, coffee)
- Rainforest conservation
- Role of NGOs in promoting sustainable rural development

Why Costa Rica
- Uniqueness of Tropical Agriculture
- Safety Issue
- Friendly People
- Large Pool of Small Farmers
- Developed Agro-tourism Industry
- Cost – Benefit Ratio
- Diverse Terrain

Costa Rica – Essential Facts
- Area: 51,100 sq km
- Population: 4.1 million
- People: 96% Spanish descent, 2% African descent, 1% indigenous, 1% Chinese
- Language: Spanish, English
- GDP per capita 2003 US$

02	U.S.	37,800
65	Uruguay	12,600
72	Argentina	11,200
82	Costa Rica	9,000
85	Mexico	9,000
95	Brazil	7,600

(Source: CIA Factbook 2003)

What is Sustainable Development?
"To ensure socially responsible economic development while protecting the resource base and the environment for the benefit of future generations"
(UN Conference on Environment and Development (UNCED))

Development path along which the maximization of human well-being for today's generations does not lead to declines in future well-being." Requires:
1) eliminating negative externalities responsible for natural resource depletion and environmental degradation
2) securing public goods essential for economic development to last, such well-functioning ecosystems, a healthy environment and a cohesive society.
(OECD)

What Local Resources area Needed for Sustainable Development?
- Financial capital: sources of income (on-farm and off-farm, including

remittances), savings, access to loans, credit
- Physical capital: infrastructure (power and communications networks, roads, ports), machinery, tools for production
- Human capital: education, capacities, health, nutrition
- Social capital: integration in community and business organizations, access to services, political and social networks
- Natural capital: access to natural resources (land rights), land, water, genetic material

Challenges for Achieving Sustainable Rural Development – Point of Departure

- Central America: 60% "poor" and 40% "extremely poor" people è GDP per capita of Honduras (US$ 2,600) and Nicaragua (US$ 2,200) among the lowest in the world (157 and 167, respectively)
- Poverty is mainly rural è 52-70% of "extremely poor" in rural areas
- CAFTA: what will happen in Central America?
- High vulnerability to external shocks: Natural: Hurricane Mitch (1998) and droughts (2001) and Economic: "coffee crisis" (2000-2003)

Challenges for Achieving Sustainable Rural Development – the Agricultural Sector

- Traditional production systems that are not competitive in international markets (e.g., beans, rice and potatoes)
- Globalization of local markets è rise of supermarkets
- Watershed management is important concern (degraded hillsides, deforestation) è 150 million invested in projects in Central America
- Dependence on few large export sectors: coffee, banana, pineapple, tourism
- Agricultural sector with little alternatives for marginalized farming households: vicious circle of poverty and environmental degradation
- Soil erosion, loss of soil fertility and biodiversity, overuse of agrochemicals

The Most Important Advantage of AgriTourism

Strengthening the competitiveness of rural small and medium enterprises (SMEs) to increase their economic and social benefits without compromising the natural resource base

Conclusions

Globalizing environment implies opportunities and challenges for the development of rural small producers

- Opportunities for small-scale enterprises in market niches for organic, fair trade, certified wood, and other products with special attributes
- Challenges include:
  - raising competitiveness of rural SMEE through capacity building
  - strengthening BDS providers to deliver effective services
  - adopting market-based approaches for demand-driven BDS
  - developing integrated supply chains through demand orientation, market intelligence systems, business round tables, strategic alliances and networks, marketing campaigns, etc.

Bottom Line

Farmers can make money in agri-tourism with proper planning

Track Four

Organic Agriculture

Biological Control for Insect Management on Small Farms

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Biological control is, generally, using a living organism to control a specific pest. When you choose a predator, parasite, or disease that will attack a harmful insect, you are manipulating nature to achieve a desired effect. A complete biological pest control program may range from choosing the pesticide that is least harmful to beneficial insects to raising and releasing one organism to have it attack another, almost like a "living insecticide."

There are advantages to using biological controls. As part of an overall Integrated Pest Management (IPM) program, biological control methods can reduce the legal, environmental, and health hazards of using chemicals in pest management. In some cases, biological control measures can actually prevent economic damage to the plants. Unlike most insecticides, biological controls are often very specific for a particular pest. People, animals, or helpful insects may be completely unaffected or undisturbed by their use. There is also less danger to the environment and water quality.

However, there are also disadvantages to using biological control. Biological control takes more intensive management and planning. It can take more time, requires more record-keeping, and demands more patience and education or training. To be successful, you need to understand the biology of the pest and its enemies. Many of the predators you will want to use on your farm are very susceptible to pesticides. Using them successfully in an IPM program takes great care. In some cases, biological control is more costly than pesticides. Often, the results of using biological control are not as dramatic or immediate as the results of pesticide use. Most natural enemies attack only specific types of insects, whereas broad-spectrum insecticides may kill a wide range of insects. But this seeming advantage of insecticides can be a disadvantage when it kills beneficial insects.

On your farm, a beneficial insect is any insect that preys upon a harmful insect that damages your crops. Beneficial insects are the "good" insects that destroy insect pests. The beneficial insect might eat the harmful insect immediately, the harmful insect may be paralyzed and eaten later, or the beneficial insect may lay eggs so that its offspring will consume the harmful insect. For example, lacewing larvae eat aphids, paper wasps catch caterpillars and feed them to their young, and tiny parasitic wasps lay eggs into other insects and their offspring eat the insect from within.

There are a variety of ways that beneficial insects can be used for pest management on a small farm. First, a grower can conserve the beneficials already on the farm to take advantage of the natural control of insects that they provide. This conservation approach to biological control can be accomplished by modifying pesticide use practices to favor beneficials. These modifications can include: choosing pesticides that are selectively less harmful to beneficials; spraying only when pest populations reach economic thresholds, and using reduced dosages if appropriate.

In addition to conserving beneficial insects and building habitat for them, there is also

an option to purchase and release beneficials into your crops. These predators and parasites may be purchased from supply houses. However, purchasing beneficials should be done with a "buyer beware" attitude. Because the government doesn't regulate this industry, the quality of material you could receive varies widely among producers and suppliers. To become well informed before choosing a supplier of beneficial insects, you can read the NC State University Extension publications *Purchasing Natural Enemies*, AG-570-1, and *Application of Natural Enemies*, AG-570-2. These articles are also available online on the following web site: http://cipm.ncsu.edu/ent/biocontrol/

Some of the beneficial insects offered for sale may not be suited to our climate, may not be appropriate for release in a crop field, or are very specific regarding which insects they attack. For example, praying mantids are commonly sold as natural insect control. However, mantids tend to be ambush predators, eating anything that passes in front of them that they can subdue. In other words, they do not seek out insects like aphids, caterpillars, and thrips that are typical garden pests. Therefore, these entertaining, watchable insects are essentially useless for pest control. Another example is ladybeetles. A single lady beetle adult or larva can consume many aphids. But when hundreds of them are collected into a container and released, they also tend to fly away and disperse in order to avoid competing with each other for food. Don't forget that there has to be a lot of food to support a lot of insects. So if your crop is not full of harmful insects, it won't support large numbers of beneficial ones. It is best to strive for a balance of low levels of both harmful and good insects.

Data at the Small Farm Conference will be presented to show evaluations of beneficial insect and nematode releases for insect pest management. We also show how releases of some beneficial insects can be improved with a few simple steps.

The use of beneficial insect habitat to improve insect pest management is of interest to a number of small farm growers in the southeastern United States. For example, in 2000, N.G. Creamer (North Carolina State University, Raleigh, N.C.) and T. Kleese (Carolina Farm Stewardship Association, Pittsboro, N.C.) conducted an unpublished survey asking organic growers in North and South Carolina what their top ten research needs were. Survey results indicated the number one response was "insect pests". When growers were asked to prioritize needs for resolving pest problems, beneficial insects and beneficial insect habitat were their first and second choices, respectively. For the last three years we have addressed grower concerns by conducting farm-scale research with commercial beneficial insect habitats. We also examined habitats we developed based on literature, experience, and grower input. Several studies were conducted, and are summarized below.

A laboratory study evaluated the purity, composition and germination of four commercial beneficial insect habitat mixes. These commercial mixes and our own mixes were planted in field plots to determine their suitability to being grown in the southeast, and to assess supplier recommendations for planting. Mixes were planted at different rates, and under different weeding regimes to examine habitat development under weed competition.

A field study recorded the insect communities present in three commonly grown cut flower/ herb plantings (*Zinnia*, *Celosia* and fennel) as well as three commercially available beneficial insect habitat seed mixes. Insect communities were determined in three ways: 1) foliar and floral collections were made using a D-Vac, and insects identified to family and assigned to feeding guilds; 2) pitfall traps were used to collect ground beetle and ground-dwelling spider populations; and 3) evening observations recorded visits by noctuid and hornworm moths to flowers.

A two year field study was conducted to evaluate the effectiveness of a commercially available beneficial insect habitat in decreasing pest caterpillar populations in organically managed tomato plots. Six pairs of tomato plots were established and a commercial beneficial insect mix transplanted around the perimeter of treatment plots, while a brown-top millet border was planted around control plots. Egg parasitism by trichogrammatid wasps and larval parasitism by braconid wasps was monitored throughout the growing season to determine if habitat increased their activity.

Field studies were conducted to evaluate simple habitats planted within fall and spring cabbage crops. Parasitism of caterpillar pests and aphids were assessed, as well as predator numbers. Yield and quality measures were taken at harvest.

Cotton grown conventionally (using Best Management Practices) was compared with organic cotton grown either with or without surrounding beneficial insect habitat. Population dynamics of both pest and predator populations were recorded, using several sampling methods. Parasitism of key pests was also recorded. Plant growth was examined during the growing season, and yield and quality measures were taken at harvest.

Organic Programs at the Center for Environmental Farming Systems

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Introduction

The Center for Environmental Farming Systems (CEFS) is a dynamic 810 ha facility located in Goldsboro, North Carolina (NC) and is dedicated to research, education, and outreach in sustainable agriculture. The Center is a joint program between NC State University, NC A&T State University, NC Department of Agriculture, stakeholder groups and farmers. The Center was initiated in 1994 and focuses several of its programs on organic research, education, and outreach. In 1999, CEFS had 32 certified hectares of organic land, the largest at any University in the United States. The development of CEFS exemplifies partnership, innovation, and interdisciplinary cooperation. CEFS has earned an international reputation as a leader for its:

- 80 hectare (200 acre) long-term interdisciplinary farming systems experiment that allows researchers the capacity to examine the impact of agriculture and natural areas on soil quality, water quality, carbon sequestration, pest dynamics, plant growth, development, and yield, economics, energy and nutrient flows, long-term ecological impacts and shifts, and more.

- Innovative animal production research and demonstration facilities that focus on projects that enhance the efficiency and economic viability of animal production while developing systems that reduce energy use, improve water quality, improve animal health, efficiently utilize animal waste management, and improve quality of life for producers. In addition to the animal production units, integrated animal/crop production studies are included within the 200 acre experiment mentioned above.

- Organic production facility, unique in the United States for its focus on research and education efforts on organic agriculture. An early leader in developing information for organic production systems, this dynamic unit is a focal point for farmer and student education, innovative research, and extension training.

- An eight-week residential summer internship program in sustainable agriculture that draws students from all over the country and world for in-depth study of all aspects of sustainable agriculture. The program includes lectures, field trips, special projects, and hands on experience in production, research, and extension.

- Farmer and extension agent training on pertinent sustainable agriculture topics. These have included (but are not limited to) pasture management, rotational

grazing strategies, organic agriculture (offered to Extension agents as a graduate level course), disease management, organic grain production, composting, etc. CEFS also hosts annual field days and other educational workshops.

Community-based food systems work developing alternative direct marketing strategies to targeted consumer groups that also educate and promote the consumers role in facilitating a more sustainable agriculture.

Research***:*** A range of research projects is being conducted at CEFS on various aspects of organic agriculture, including but are not limited to: determining mechanisms of cover crop weed suppression and management strategies to enhance suppression, evaluation of summer legume and grass cover crops in organic vegetable production systems, compost utilization in vegetable and agronomic crops, impact of summer cover crops on nutrient dynamics and weed control in fall broccoli, evaluation of sorghum sudangrass as a summer cover crop and marketable hay crop for organic no-till production of fall cabbage, production practices for new crops like edamame (edible vegetable soybean), conservation tillage systems in organic sweetpotato production, and breeding a more allelopathic rye cover crop.

In 1998, an 81-hectare long-term, interdisciplinary farming systems experiment was established to allow researchers the capacity to examine the impact of various agriculture systems and natural areas on a range of parameters including soil quality, pest dynamics, plant growth, development, yield, and economics. The systems being studied include a conventional system (sub-plots of till and no-till), an integrated crop animal system with a 15 year rotation, an organic system, a forestry/woodlot system, and a successional ecosystem (Mueller et al, 2002). Nested within this large experiment is a study now in its fifth year that evaluates various transition strategies to organic agriculture.

In the transition from conventional to organic production systems, it has been documented that there is a period of suppressed yields followed by a return to yields similar to conventional production. This "transition effect" has been attributed in part to time required for changes in soil chemical, physical, and biological properties that govern nutrient cycling, plant growth and development, and the biological control properties of the system (Scow et al., 1994; Wander et al., 1994; Reganold et al., 1993).

Five strategies of transition are being evaluated and compared to a conventional control: immediate substitution of all conventional inputs with organic management practices and inputs; substitution of one of the major classes of inputs (fertilizer, herbicide, pesticides (insecticides & fungicides)) in the first two years, followed by a third year where all classes of synthetic inputs have been replaced in an organic system; and gradual withdrawal of all classes of inputs over the three-year period until an organic system is in place by the third year (Table1).

Table 1

Strategy-Treatments	YEAR 1	YEAR 2	YEAR 3
1 - Conventional	(+ F + H +P)	(+ F + H + P)	(+F +H + P)
2 - Organic	(- F - H - P)	(- F - H - P)	(- F - H - P)
3 – Organic Fert	(- F + H + P)	(- F + H + P)	(- F - H - P)
4 – Organic Weed	(+ F - H + P)	(+ F - H + P)	(- F - H - P)
5 – Organic Pest	(+ F +H - P)	(+ F+ H - P)	(- F -H -P)
6 - Gradual Trans	(Grad reduc.)	(Grad reduc.)	(- F - H - P)

[z]Notation used for treatment identification: [synthetic F (fertilizer), H (herbicide), P (pesticides including insecticides and fungicides)]; - (without), + (with). Grad reduc. (gradual reduction of all synthetic inputs, for example, banding vs. broadcasting. In the second year, only rescue chemical treatments will be applied).

The experiment has two 'starts' of the following rotation to insure replication in time: soybean, sweetpotato, wheat/cabbage. Start 1 began in 2000 and Start 2 in 2001. A wide range of parameters is being measured, including: aboveground biomass of cover crop and cash crop, soil quality indices (physical, chemical, biological), plant residue decomposition, soil microbiological properties, insects, weeds, disease, crop yield, and economics. The experiment will conclude after two rotation cycles (6 years) until all treatments are certifiable organic.

Yield data for the first complete rotation cycle is summarized in Table 2. According to North Carolina Department of Agriculture, average soybean yield is 38.1 bushels/acre. In this study, averaged over the two starts, conventional soybean yields were 47.2 bushels/acre and organic yields were 42.4 bushels/acre. Overall treatment effect was not significant in either 2000 or 2001, nor when averaged over starts. Nevertheless, when averaging over starts, and contrasting between those plots where herbicides were used and not, the average yield for those treatments with herbicides (1,3,5,6) were significantly higher than those treatments without herbicides (2,4). Average sweetpotato yields in this experiment were 19,461 kg/ha for the conventional system and 17,458 kg/ha for the organic system (statewide average is 16,300 kg./ha), however, there were no significant treatment or treatment by start interaction effects for marketable sweetpotato yields. Percent damage (ANOVA on arcsine transformed data) revealed a treatment effect and a marginal year by start interaction. Conventionally managed sweetpotatoes had significantly less damage than those managed organically or those gradually transitioned to organic in the first start. No significant differences in damage were present in the 2nd start. In 2002, conventional wheat yields averaged 44.5 bu/ac and organic wheat yields averaged 39.6 bu/ac, but these were not significantly different. The organic transitional treatment with organic pest management but conventional fertilizers yielded higher (46 bu/ac) than the treatment where a gradual reduction of all inputs was employed (35.1 bu/ac). In 2003, the conventional wheat yielded higher (50.7 bu/ac) than the organic wheat (32.7 bu/ac), most like attributable to nitrogen deficiency in the organic plots. Average wheat yield for North Carolina is 41.9 bushels. Cabbage yields in 2003 were very low and not different among treatments due to failure of transplant supplier to produce quality transplants resulting in a significant delay in planting. In 2004, cabbage yields averaged 14,111 kg/ha in the conventional plots and 10,019 kg/ha in the organic plots but this was not a significant difference. A summary of additional data parameters will also be reported

Soybean Yield kg/ha (bu/ac)

Treatment	**Start 1**	**Start 2**
Conventional	3262 (48.4)	3104(46.0)
Organic	2793 (41.4)	2927 (43.4)
Organic Fertilizer	3224 (47.8)	3126 (46.4)
Organic Weed Management	2789 (41.4)	2893 (42.9)
Organic Pest Management	3140 (46.6)	3074 (45.6)
Gradual Transition	3127 (46.4)	2872 (42.6)
	Ns	Ns

Sweetpotato Yield (kg/ha) averaged over both years Start 1 Start 2

Treatment	**Weight ones**	**Marketable**	**% damage**	**% damage**
Conventional	20,914	19,469	6.7 a	6.9
Organic	22,004	17,458	38.3 b	8.9
Organic Fertilizer	22,400	19,122	23.0 ab	8.1
Organic Weed Mngt	22,432	19,727	22.7 ab	6.5
Organic Pest Mngtt	21,600	19,371	19.6 ab	5.1
Gradual Transition	21,834	17,216	40.6 b	8.3
	Ns	Ns	p=0.05	ns

Wheat Yield kg/ha (bu/ac)

Treatment	**Start 1**	**Start 2**
Conventional	3003 (44.5) ab	3418 (50.7) a
Organic	2667 (39.5) bc	2205 (32.7) bc
Organic Fertilizer	2982 (44.2) ab	2881 (42.7) ab
Organic Weed Management	2786 (41.3) abc	2244 (33.3) bc
Organic Pest Management	3101 (46.0) a	1774 (26.3) c
Gradual Transition	2369 (35.1) c	2743 (40.7) abc
	p=.029	p=.058

Marketable Cabbage Yield (kg/ha)

Treatment	**Start 1**	**Start 2**
Conventional	1382	14,111
Organic	4077	10,019
Organic Fertilizer	3248	14,677
Organic Weed Management	2839	11,092
Organic Pest Management	3977	12,261
Gradual Transition	4059	14,130
	Ns	ns

Table2. Yields for the first three rotational crops managed with different transitional strategies.

Educational programs**:** The CEFS undergraduate education programs include an 8 week residential internship program in sustainable agriculture that draws students from all the US and world for in-depth study of all aspects of sustainable agriculture. The program includes lectures, field trips, special

projects, and hands on experience. In addition to organic agriculture, topics include soil quality and management, sustainable animal production systems, integrated crop/animal production, pest ecology, social and economic issues in agriculture. Each intern begins their internship by selecting a personal research or demonstration/extension project located at one of the CEFS units. Interns choosing a research project can participate as a team member in one of the ongoing research activities at CEFS, select an activity from a list provided by faculty, or design a special project specifically for them. Interns participate in fieldwork related to the project, data collection and analysis, collecting background information, and preparation of research reports. Interns also have the opportunity to be involved in the production of organically grown crops on the student farm at the Organic Unit. Educational activities include farm-scale compost production, operation of trickle and overhead irrigation systems, pest monitoring and implementation of pest control measures suitable for organic crop production, cultivation, operation and repair of farm equipment, and production, harvesting, packing, transporting, and marketing of vegetables and fruit. From the kick-off canoe trip down the environmentally sensitive Neuse River that surrounds CEFS, to the final Field Day that highlights their learning over the eight weeks, we believe that immersion in this program will build social capital as these students go on to be teachers, policy makers, lawyers, agricultural scientists, and community leaders. Their goals are admirable and their ideals run deep. Fostering their commitment to agricultural sustainability has been a truly inspirational experience for all involved faculty.

Complementary on-campus educational initiatives that include organic agriculture and utilize the CEFS facility are increasing as well. A new Agroecology minor is being offered through the Crop Science Department at NC State that includes two newly developed courses in agroecology. A PhD minor is Sustainable Agriculture is under development, as is a course in organic agriculture to be offered through the Horticultural Science Department. The new course in Organic Horticulture will outline the principles that form the basis for organic horticultural production systems. Special attention will be given to soil fertility, organic soil amendments, compost and mulches, crop rotation, plant health, management of diseases and pests, companion planting, and produce storage/handling and marketing. Additional topics will include making the transition to organic production, and definition and legislation of organic food within and outside the U.S.

Outreach**:** Farmer and extension agent training on pertinent sustainable agriculture topics have included (but are not limited to) organic agriculture, organic disease management, organic grain production, composting, pasture management, rotational grazing strategies, and others. More than 50 agents participated in a series of workshops that were offered as in-service training and as a graduate level North Carolina State University (NCSU) course worth four credits (Creamer et al, 2000). The Organic Unit at the Center for Environmental Farming Systems (CEFS served as a home base for training activities. These training activities consisted of lectures, hands-on demonstrations, group discussions, field trips, and class exercises. Two unique features of the workshops were the interdisciplinary, team teaching approach and the emphasis on integration of information about interactions among production practices. Interdisciplinary teaching teams allowed for a full, integrated treatment of subject matter and present a "whole systems" perspective to agents.

Community-based food systems work that focuses on developing alternative direct marketing strategies to targeted consumer groups have also been initiated. These programs focus on educating consumers about the importance of their role in facilitating a more sustainable agriculture,

and on providing economically viable options for farmers. Two major projects have been initiated. The first involves direct farm-to-market sales a major industrial park (RTP). With 43,000 employees at RTP, direct connections to farmers supported by these companies will bring significant economic development to rural areas in surrounding counties. The second project provides direct connections between sustainable pork producers and consumers. The NC Choices project, funded by the WK Kellogg project is designed to help alternative pork producers market their products and will pair pork sellers and buyers via the Web. This project is being reported on separately, and the complete description can also be found in these IFOAM proceedings.

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Experiences And Lessons Learned While Providing Outreach To Latino Farmworkers And Farmers On Organic Agriculture And Related Topics

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The National Center for Appropriate Technology (NCAT, www.ncat.org) is a private nonprofit, founded in 1976 with offices in Butte, Montana; Fayetteville, Arkansas; and Davis, California. NCAT manages projects which promote self-reliance (especially for low-income people) through wise use of appropriate and environmentally sound technology. NCAT program areas are sustainable energy, and sustainable agriculture and rural development. NCAT manages the ATTRA project (www.attra.org)–the National Sustainable Agriculture Information Service. ATTRA is funded by a grant from USDA's Rural Business-Cooperative Service. The ATTRA service provides information and other technical assistance to farmers, ranchers, Extension agents, educators, and others involved in sustainable agriculture in the United States. The ATTRA project is staffed by more than 20 NCAT agricultural specialists with diverse backgrounds in livestock, horticulture, soils, organic farming, integrated pest management, and other sustainable agriculture specialties.

In 2002 ATTRA services were expanded to serve the growing Hispanic population involved in agriculture. A toll free bilingual telephone information line was initiated at 800 411-3222. The ATTRA website added a Spanish section with weblinks to various Spanish language sustainable agriculture links from the US, Latin America and Spain. Additionally ATTRA has developed several Spanish publications:

Organic Farm Certification & the National Organic Program
La Certificación para Granjas Orgánicas y el Programa Orgánico Nacional
http://www.attra.org/espanol/pdf/certificacion_organicas.pdf

Strawberries: Organic and IPM Options; *Fresas Organicas Y Opciones Para el Manejo Integrado de Plagas*
http://www.attra.org/attra-pub/PDF/fresas.pdf

Specialty Lettuce and Greens: Organic Production; *Producción Orgánica de Lechugas de Especialidad y Verduras Para Ensalada*
http://www.attra.org/espanol/pdf/Lechugas.pdf

In addition to ATTRA funded work, we have received grants from other organizations to develop materials and workshops for Spanish speaking clients. The following is a summary of completed and ongoing projects.

Risk Management: Non-traditional outreach project
The curriculum and educational materials for this project were developed through the support of USDA's Risk Management Agency Outreach program. The idea was to develop approaches and methods for training farmers in risk management This effort focused first on identifying gaps in risk management skills of the farmers, then developing a curriculum to address the gaps. In our case, we knew the audience in advance, and developed a survey which was designed to outline knowledge gaps. The target audience was a cooperative of Latino organic farmers in Hollister California.

The curriculum is best used as a ***guide*** to provide some ideas about how to approach non-traditional risk management training. Other educational "stand-alone" materials may be useful for short courses on marketing, record-keeping and farm planning. In the past, much risk management has focused on various kinds of crop insurance. However, in order for a farmer to access crop insurance, subsidized loan programs, etc, other skills must first be developed: record keeping, cash flow budgeting, understanding contracts, and planning for one's markets—these are the skills targeted by the materials listed below which can be downloaded on the ATTRA website: http://www.attra.org/risk_management/rmgateway.html or a CD ROM can be ordered at 800 346-9140.

Trainers' Manual: PDF, 610kb. This is a user-friendly curriculum that guides the trainer in six risk management lessons which focus on identifying farm family goals, marketing, managing money (individual cash flow budgeting), planting for multiple markets, and contracts and regulations http://www.attra.org/risk_management/Workbooks/TrainersEng.pdf

Participants Workbook: PDF, 850kb. (Also available in Spanish, Part 1, 4.8 mb, and Part 2, 3.8 mb). This document is used in conjunction with the Trainers Manual as a teaching support. It is divided into 6 lesson sections and contains handouts and worksheets that pertain to each lesson.

Overheads: PDF, 141kb. (Also available in Spanish, 162 kb) These are used in conjunction with the Trainers Manual as a teaching support. Some of these documents are also "stand-alones".

Introduction to Risk Management Survey, Risk Management Survey and the Survey Results are included in both website and CD in both Spanish and English (Survey Results in English only)

The following useful **stand-alone materials** are available, as well. English versions of these documents can be found in the English Participants Workbook on the page numbers in parentheses noted below. Spanish versions are PDF files available for download.

Marketing Channel Tip Sheet: Food Service Jobber (28) / Mayorista de Servicio de Alimentos (8 kb)
Marketing Channel Tip Sheet: Terminal Markets (30) / Terminal de Mercados (8 kb)
Marketing Channel Tip Sheet: Farmers Markets, Roadside Stands, and CSA's (32) / Marketing Channel Tip Sheet: Restaurants (24) / Mercado Directo al Consumidor (9kb)
Marketing Channel Tip Sheet: Independent and Small Grocery Stores (26) / Tiendas de Abarrotes Equines e Independientes (10 kb)
Golden Rules of Marketing (22) / Expanded Golden Rules of Marketing (23) / La- Regla de Oro del Mercadeo (12 kb)
Ten Questions to Ask Before Signing a Contract (61) / Diez preguntas para hacer (y contestar) antes de firmar un contrato (6 kb)
Cashflow Budgeting Spreadsheet (40) / Presupuestos de Entradas / salidas de Fondos (Microsoft Excel, 19 kb)

Lessons learned from this project:

1. It is very important to develop a curriculum that first meets the needs identified by the farmers and balance that with providing training in skills that surveys and observations indicate there are knowledge/skills gaps.
2. Communicate with the folks that will be participating in the training. Listen to their needs with respect to timing, duration, venue, and content.
3. ***Be flexible***. We changed the course content to address topics of priority concern to growers, as well as to accommodate speakers' schedules. We reserved time in the final session to focus on topics of interest and

concern to the growers.

4. Do not assume literacy on the part of participants—reading levels may vary from college level, to primary school, to functionally illiterate. Do not equate literacy with intelligence! Use of detailed forms, etc, must be geared to the literacy level of participants.
5. Farmers are very busy. Every effort should be made to make the training interesting, compelling and fun.
6. If at all possible, try to develop a trusting relationship with one or more of the farmers prior to the actual training. We met with the farmers several times prior to the start of the training, and each time we met, we learned more about their operation and situation. An icebreaker on the front end of the training course, particularly if trainers have not had extended contact with participants, is recommended.

Organic Pest Management: Training and Organic IPM Pictorial Guides in Spanish and English

This project was partially funded through the Organic Farming and Research Foundation. It consisted of developing Spanish language training for farmers on organic/biointensive integrated pest management. Power point slides used in the training were condensed into a graphic heavy, laminated field guide that can be used to identify beneficial insects, insect pests, diseases, weeds and vertebrate pests. Participants are able to follow the presentation with the guides and later use them out in the field. These field guides are available on the ATTRA web page:

Los Insectos Benéficos, Plagas y Hábitat para los Benéficos
http://www.attra.org/espanol/pdf/organic_ipm/insect_mgmt.pdf
Beneficials, Beneficial Habitat and Insect Pests
http://www.attra.org/attra-pub/PDF/IPM/insects.pdf

El Manejo de Enfermedades de Planta
http://www.attra.org/espanol/pdf/organic_ipm/disease_mgmt.pdf
Plant Disease Management
http://www.attra.org/attra-pub/PDF/IPM/disease.pdf

El Manejo de Malezas
http://www.attra.org/espanol/pdf/organic_ipm/weed_mgmt.pdf
Weed Management
http://www.attra.org/attra-pub/PDF/IPM/weed.pdf

El Manejo de Plagas de Vertebrados
http://www.attra.org/espanol/pdf/organic_ipm/vertebrate_mgmt.pdf
Vertebrate Pest Management
http://www.attra.org/attra-pub/PDF/IPM/vertebrate.pdf

A CD ROM with both the English and Spanish versions can also be ordered free of charge at: 800 346-9140.

These materials were received with great enthusiasm by participants of the workshops due to the ease by which they are able to follow the presentation with out having to concentrate on taking notes. Most participants in these workshops are organic farmers in training at the Agricultural Land Based Training Association (ALBA) in Salinas and farmers and Agricultural professionals involved in one day IPM workshops from Central California. The guides have also been used at several workshops funded by CSREES/OASDFR (a 2501 project)

Outreach to minority and disadvantaged farmers
"Record Keeping for Success: Linking Record Keeping, Profits and Personal Goals" is the title of this project, funded by USDA's CSREES/OASDFR program. Materials developed from other project work (funded by RMA and OFRF) as well as ATTRA materials on organic farming and the national organic program are used to train farmworkers and farmers. The training focuses on record keeping,

budgeting, how these practices are important for every day life and for going into business, especially organic farming. This training includes a hands-on budgeting exercise, with participants forming teams to work on a personal budget using pay stubs and receipts provided by NCAT staff. Receipts range from groceries to utility bills. The pay stubs vary so that some budgets come up short. Participants discuss what could be done to stay within the budget and what to do about the shortfall and the surplus. Other training components are organic farming and the importance of record keeping and documentation. Basic coverage of the national organic program, certification procedures as well as environmental and ecological concepts such as food webs and their relationship to sustainable and organic agriculture are introduced. The Organic IPM field guide presentation is used to bring many of the concepts into their situations. California Farmlink, one of the collaborators, introduces Individual Development Accounts (IDAs), in which a third party matches farmer's savings 3:1. This money may be used for purchase of land or farm equipment. Other collaborators on this project include Farmworker Institute for Education and Leadership Development (FIELDS), and California Human Development Corporation (CHDC), both responsible for providing a venue for the workshop as well as for recruiting of participants.

The Economics of Organic and Grazing Dairy Farms

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The following researchers are leading the project in their respective states: Jim Endress (Illinois), Larry Tranel and Robert Tigner (Iowa), Ed Heckman (Indiana), Bill Bivens, Phil Taylor, and Chris Wolf (Michigan), Margot Rudstrom (Minnesota), Tony Rickard (Missouri) Jim Grace (New York), Thomas Noyes and Clif Little (Ohio), Jack Kyle and John Molenhuis (Ontario, Canada), J. Craig Williams (Pennsylvania), and Tom Kriegl and Gary Frank (Wisconsin). Any opinions, findings, conclusions or recommendations expressed in this publication are those of the authors and do not necessarily reflect the view of the U.S. Department of Agriculture.

Overview

The data and conclusions of this paper are derived from USDA Initiative for Future Agricultural and Food Systems (IFAFS) Grant project #00-52101-9708. Some strengths of this work include standardized data handling and analysis procedures, combined actual farm data of ten states and one province to provide financial benchmarks to help farm families and their communities be successful and sustainable. The main report is also based upon work supported by Smith-Lever funds from the Cooperative State Research, Education and Extension Service, U.S. Department of Agriculture. The full report is available at http://cdp.wisc.edu/Great%20Lakes.htm

Participating grazing dairy farms must typically obtain 85% or more of gross income from milk sales, or 90% of gross income from dairy livestock sales plus milk sales, harvest over 30% of grazing season forage by grazing and must provide fresh pasture at least once every three days.

Management Intensive Rotational Grazing (MIRG) has become a more common dairy system in the northern U. S. This analysis of actual farm financial data from 101 graziers in 2004, 102 in 2003, 103 in 2002, 126 in 2001, and 92 in 2000 from the Great Lakes region provides some insight into the economics of grazing as a dairy system in the northern U.S.:

There is a range of profitability amongst graziers. The most profitable half had an advantage of $2.48 in Net Farm Income from Operations per Hundredweight Equivalent (NFIFO/CWT EQ) over the least profitable half in 2004. This result is similar to the four previous years, but the difference between the higher and lower profit herds was greater in the years with lower milk prices.

The average grazing herd with less than 100 cows had a higher NFIFO per cow and per CWT EQ than the average grazing herd with more than 100 cows in 2004. The $1.03 advantage in NFIFO/CWT EQ for the smaller herds was highly dependent on a $0.88 per CWT EQ advantage in the cost of paid labor. This result is similar to the four previous years.

Careful examination of the data suggests that achieving a given level of NFIFO per cow or per CWT EQ is more difficult in a seasonal (stops milking at least one day each calendar year) system. The average seasonal herd had a smaller range of financial performance within a year, but experienced more variability of financial performance from year to year. Seasonal herds had a slight advantage in NFIFO/Cow and per CWT EQ in 2003 and a large advantage in 2001 and 2004.

The non-seasonal herds had nearly a two-to-one advantage in NFIFO/Cow and per CWT EQ in 2000 and 2002.

The graziers in the study were economically competitive with confinement herds in the states that had comparable data from both groups in five consecutive years.

While breed of cattle is a minor factor affecting profitability, the Holstein herds in the data had better financial performance in four years of comparisons.

The study also confirms that accounting methodology and financial standards are important both in the accuracy and in the standardization of comparison values across large geographic areas that involve different combinations of production assets and management skills. In comparing the results of this study with other data, it will help to understand the measures used here but not in all places in the country.

Here are a few key terms used and more fully explained in the full report:

Cost per Hundredweight Equivalent of Milk Sold (CWT EQ) is an indexing procedure which focuses on the primary product that is sold and standardizes farms in terms of milk price and many other variables for analysis purposes. The Cost of Production calculated for any two farms using the CWT EQ method are directly comparable. The Cost of Production calculated for farms using the cost per product unit (hundredweight) sold method are not directly comparable.

A comprehensive evaluation of the cost of production of any business will examine several levels of cost. AgFA© is the name of the web-based, farm financial analysis and summarization computer program used in this study. The AgFA© Cost of Production report calculates basic, non-basic, allocated and total costs.

Total Cost is all cash and non-cash costs including the opportunity cost of unpaid labor, management and capital supplied by the owning family.

Allocated Cost equals total cost minus the opportunity cost of unpaid labor, management and capital supplied by the owning family. Allocated cost also equals total income minus NFIFO.

Basic Costs are all the cash and non-cash costs except the opportunity costs and interest, non-livestock depreciation, labor, and management. Basic cost is a useful measure for comparing one farm to another that differs by: the amount of paid versus unpaid labor; the amount of paid versus unpaid management; the amount of debt; the investment level; and/or the capital consumption claimed (depreciation).

Non-Basic Costs include interest, non-livestock depreciation, labor, and management. Allocated cost minus basic cost equals non-basic cost.

The Average Performance of 101 Grazing Dairy Farms in 2004, 102 in 2003, 103 in 2002, 126 in 2001 and 92 in 2000. The grazing dairy farm families that provided usable data display an average financial performance level that many farm families would be satisfied with. This level of financial performance, along with some other characteristics of grazing systems, suggest that it may be a viable alternative for farm families who want to be financially successful, especially with a dairy farm that relies primarily on family labor.

The measures of profitability calculated in the detailed cost of production and farm earnings reports in the full report are calculated using the historic cost asset valuation method (HC) to provide a better measure of profit levels generated by operating the farm business. Any comparison between the measures in this report and data based on the Current Market Value (CMV) of assets will be misleading.

Production Costs on Selected Multi-State Organic Dairy Farms

Potential organic dairy producers want to know three things about the economic impact of choosing that system:

1. What are the potential rewards once the goal is achieved?
2. How long will it take to attain the goal?
3. What will it cost to attain the goal?

Consequently, analyzing the economic performance of organic farms is fairly complex. It is often said "when switching from conventional to organic, things will get worse before they will get better." To better understand and fairly compare the financial performance of organic farms, the stages of progression of individual organic farms should be recognized.

This project seeks data from farms in each of the following stages or categories of organic production:

A. Pre-organic- The period of operation of a farm before it attempted to become organic. Since anyone not attempting to become organic could be called pre-organic, it may not be as important to gather data from that period as it is to gather data from farms at some other "organic stage."
B. Transitional organic- The period of operation of a farm from the time it began to adopt organic practices until achieving organic certification. This is expected to be the least profitable stage
C. Certified organic- The period of operation of a farm from the time it achieved organic certification until receiving organic milk price premiums.
D. Certified market organic- The period of operation of a farm during which it receives organic milk price premiums.

In reality, few farms will supply financial data from years prior to the point at which they "join the project." At times farms may slip into and out of the above stages or categories, especially between certified organic and certified market organic. Some certified organic producers only obtain organic premiums for part of the year. When that happens, additional judgment will be required to determine the best way to sort the data.

Data from organic dairy herds are scarce.

To date, there are 10 usable observations from **certified market organic** farms in 2001, 11 in 2002, 14 in 2003, and 13 in 2004. Of these organic farms, six practiced management intensive rotational grazing (MIRG) in 2001, seven in 2002, ten in 2003 and nine in 2004. Most of the organic herds are from Wisconsin. More than half of these farms are from Wisconsin. **This small number of summarized organic dairy farms may not be representative** of even the dairy farms receiving organic milk prices the entire year.

This is what we can confidently say about the economics of the summarized organic dairy farms.

1. Clearly a number of individual farms are achieving financial success with an organic system (the total number of organic farms is still a small percent of the total).
2. Organic producers receiving organic prices are more competitive with other dairy systems in years that the national average milk price is low.
3. The three to five year transition from a "conventional" system to organic is often challenging financially and other ways. We have been trying to measure the long-term financial impact of this transition.
4. For those farms (we've encountered a few of these) whose routine practices for the past three or more years just happen to meet organic requirements, about the only downside to becoming certified and obtaining organic prices is the cost of

and record keeping effort to become certified.

5. The jury is still out regarding many other economic questions about organic dairy farming. More data will be collected from the ten states and province. Economic data is being collected from organic dairy farms in Vermont and Maine via a separate USDA grant. There is an opportunity to compare data from both projects for mutual benefit.

Additional observations

The average organic dairy farm that submitted data in 2004, 2003 and 2001 was smaller, sold slightly fewer pounds of milk per cow and per farm than the average grazing herd. The average organic dairy farm that submitted data in 2002 was larger, sold fewer lbs. of milk per cow, but more lbs. of milk per farm than the average grazing herd in 2002. The amount of NFIFO generated each year by the average organic farm was enough to satisfy most farm managers. This is explained in part by higher average price per CWT of milk sold by the organic herds.

Their milk price was $20.79 compared to $15.68 for the average grazier in 2004, $20.42 compared to $15.22 for the average grazier in 2003, $19.57 compared to $13.73 for the average grazier in 2002, and $19.99 compared to $16.31 for the average grazier in 2001.

The multi-state organic dairy farms had a NFIFO/CWT EQ advantage over the confinement farms that were compared with the multi-state grazing herds from 2001 to 2004.

In two of four years, the summarized multi-state organic farms had an advantage in NFIFO/CWT EQ over multi-state grazing farms of $0.68 and $0.27 in 2002 and 2003 respectively. In two of four years, multi-state graziers had an advantage in NFIFO/CWT EQ over multi-state organic farms of $0.40 in 2004 and $0.41 in 2001.

Continuing to compare individual cost categories between organic and grazing herds, organic herds had lower purchased feed costs from 2001 to 2004. Their advantage ranged from $0.43 to $1.26/CWT EQ.

In contrast, organic herds had higher costs all four years in the categories of: repairs, interest, gas, fuel and oil, paid non-dependent labor, non-livestock depreciation. Organic herds had higher costs in three of four years in the categories of: taxes, seeds supplies.

Given the higher market price commanded by organic hay and grain, it might be surprising that organic dairy farms have lower purchased feed costs than many other dairy systems. The higher price of organic hay and grain provides a powerful incentive for organic dairy farmers to raise most of their livestock feed. It does appear that most organic dairy farmers in Wisconsin raise a high proportion of their feed just as most Wisconsin traditional confinement dairy farms do. The only other Wisconsin dairy farm system with a lower cost of purchased feed per CWT EQ from 2001 to 2004 are the confinement herd sizes less than 150 cows. Most of the Wisconsin confinement farms with less than 150 cows could be called traditional confinement farms.

Away from the Corn Belt, it appears like it is more difficult for organic dairy producers to raise most of their own grain. The project data shows that graziers in the eastern states have higher purchased feed costs than graziers in the mid west. The cost of purchasing organic grain also appears to be much higher the farther away one goes from the Corn Belt.

What's Next?

The standardization of data handling and analysis procedures in this project relies heavily on the Farm Financial Standards Guidelines (revised December, 1997). This and AgFA© opens the door to standarized multi-state analysis of other enterprises for which data can be collected. Additional data and enterprises are desired for the project.

Genetic Diversity in Watermelon Possible Future Benefits for Organic and Small Farmers

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Watermelon is a major vegetable crop grown in 44 states in the U.S. Watermelon production has increased from 1.2 M tons in 1980 to 3.9 M tons in 2003 with a $310 million farm value (National Watermelon Promotion Board; www.watermelon.org). In recent years there has been an increased demand for seedless watermelon. As a result, over 60% of watermelons produced in the U.S. during 2004 were seedless types. There is a continuous need to develop new seedless watermelon varieties suitable to consumer demands. Most of the watermelon cultivars developed in the U.S. during the last 200 years have a narrow genetic background. As a result, the watermelon cultivars are susceptible to a large number of diseases and pests. There is a great need to enhance resistance to diseases and pests in watermelon cultivars. Whiteflies, spidermites and nematodes are considered major pests of watermelon. Whiteflies and spidermites can cause sever damages to watermelon in fields by sucking on the plants, and by transmitting harmful viruses into watermelon plants. The root-knot nematodes are microscopic worm-like organisms that often feed on roots of many types of plants, including watermelon. As a result, water and nutrient flow into the plant are reduced; the plants are weakened and become vulnerable to fungal diseases and environmental stress such as heat, water, and nutritional deficiencies. Wild forms of watermelon collected throughout the world contain resistance to various diseases and pests. The wild watermelon collection is stored at the USDA, ARS, Plant Genetic Resources and Conservation Unit in Griffin, Georgia (www.ars-grin.gov). Researchers at the U.S. Vegetable Laboratory in Charleston, SC, evaluated the collection of wild watermelons which is maintained by the USDA, ARS and identified watermelon plants with resistance to nematodes, whiteflies, and spidermites. The researchers are initiating efforts to incorporate pest resistance of the wild watermelons into watermelon cultivars so that small and organic farmers can plant them without using pesticides to control these pests.

Modern agriculture, which focuses on most profitable crops, reduces the diversity of vegetable and fruits throughout the world. USDA, ARS researchers are making great efforts to collect and preserve genetic material (germplasm) of vegetables and fruits from all over the world. However, small farmers also have an important role in collecting and preserving seeds of important vegetables and fruits that can be useful for future generations.

Enhancing Research and Extension to Serve Organic Agriculture: The NEON Experience

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Over the last ten years, we have seen more than a doubling in the amount of land in certified organic production. In 2001, census data indicated that around 1.3 million acres of crop land and 1 million acres of pasture land were certified organic. In 1992, there was about 400,000 acres of certified crop land and 500,000 acres of certified pasture land. This increase in acreage has been spurred by increased organic market share. The U.S. leads the world in organic food sales. In 2000, the value was near $8 billion dollars. It was also the first year that organic sales through commercial mainstream markets exceeded those of health food stores. Only about 3% of the total production was sold directly to consumers. Analysis of farm data in 2002, by the ERS (www.ers.usda.gov/Data/organic/) has shown that in the Northeast, most states have between 240 and 1,020 certified organic farms, and this represents a regional concentration of organic farms compared to much of the rest of the country. Only in the upper Midwest, with Wisconsin, Minnesota and Iowa, is there a similar regional concentration of organic farm numbers. Most of the farms in the Northeast are small acreage vegetable producers selling to local direct markets or via Community Supported Agriculture, capturing some portion of that 3% of the direct retail market.

The growth in organic farming in the Northeast is a direct result of the commitment and innovation of the growers themselves. The growers and their organizations have done most of their own research, development and education to help grow their farms and this sector. The Northeast Organic Farming Association and the Maine Organic Farmers and Gardeners Association have over twenty years of experience supporting organic farmers and consumers in the region, including research, extension, outreach and community building. Historically, little to no support came from land grant universities or other research institutions. The 1997 publication "Searching for the "O-Word": An Analysis of the USDA Current Research Information System (CRIS) for Pertinence to Organic Farming", by Mark Lipson, and the "State of the States: Organic Farming Systems Research at Land Grant Institutions 2001-2003", compiled by Jane Sooby, published by the Organic Farming Research Foundation, did much to draw attention of USDA and Land Grant Universities to this lack of support for organic agriculture.

Despite the general lack of support from regional universities, there has always been a small subset researchers and extension educators committed to growing the Northeast organic agriculture sector. From this commitment grew the Northeast Organic Network (NEON). NEON was funded in 2001, the second year of the USDA Initiative for Future Agriculture and Food Systems Program. The project was funded at $1.2 million, for 3 years. Key team members and their institutions included:

Brian Caldwell and Sarah Johnston, Northeast Organic Farming Association of NY
Karen Anderson, Northeast Organic Farming Association of NJ
Sue Ellen Johnson, New England Small Farm Institute
Marianne Sarrantonio, University of Maine
Kim Stoner, Connecticut Agriculture Experiment Station

Charles Mohler, Tony Shelton, Laurie Drinkwater, Wen Fei Uva, David Conner, Anu Rangarajan, Meg McGrath, Cornell University
Three Regional Coordinators

The project was designed collaboratively and focused on annual organic cropping systems. Details can be found at www.neon.cornell.edu .

The guiding principles for NEON's approach must include a systems approach to learn best strategies to enhance the viability, productivity and environmental stewardship of Northeast organic farms. This is best accomplished using multidisciplinary teams of researchers, organic community leaders and growers. We recognize that much of the knowledge and expertise in organic agriculture lies with the farmers themselves. We hope to complement this knowledge with directed research and education programs that can lead to further improvement in organic farming strategies on established organic farms. We purposefully chose not to work with transitioning farms, since they are the target of other research efforts around the country (Organic Agriculture Consortium, IFAFS funded in 2000). We wanted to leverage the university and industry resources to enhance the functioning of established organic farms. NEON's specific objectives have been to:

- Build and strengthen NE organic networks
- Conduct economic analysis and test enterprise budgets to assess organic farm profitability
- Conduct applied research to address specific 'knowledge gaps' and develop decision support tools from this work
- Highlight biological and financial interactions on 11 successful organic farms in the Northeast

NEON's products include:

- Economic analysis and validated enterprise budgets for the Northeast
- Organic Agriculture Nutrient Management Planner
- Crop Rotation Planning Manual
- Resource Guide for Organic Insect and Disease Management
- Real World Organics: Case Studies of Exemplary Organic Farms of the Northeast
- Organic research and extension priorities for NE (see website)
- 'Who's Who': Agricultural professionals in the Northeast supporting organic production and marketing (see website)

Economic Research Outcomes

The intent of this research was to create initial benchmarks for organic enterprise costs, based upon true production costs of highly experienced, established organic farms. Using the data collected through the case study farms, detailed enterprise budgets were developed for several crops, including: lettuce, beets, garlic, strawberries, tomato, winter squash, bell pepper, kale, onions, green beans, parsnips, corn grain and silage, soy, spelt, wheat (Table 1). This information was used to calculate break-even price points and profit per acre, based upon average prices received by the farmer. This data was integrated with other information from the case farms to create Whole Farm Business Summaries. This information is being published with the case studies.

Revenues for Parsnips and Winter Squash at Kestrel Farm, 2002-2003.

Crop	Year	Amount Sold (lbs. per acre)	Average price per lb.	Revenue	Total Cost of Production per acre	Profit per acre
Parsnip	2002	13,830	$0.85	$11,776	$5,637	$6,139
	2003	6,882	$1.00	$6,882	$3,295	$3,587
Butternut squash	2002	22,400	$0.40	$8,990	$4,391	$4,599
	2003	19,000	$0.33	$6,318	$3,297	$3,021

Table 1. Yield, price, earnings and revenue for parsnips and butternut squash grown on an established organic farm in the Northeast.

Organic Nutrient Management Planning

This research, led by Dr. Laurie Drinkwater, at Cornell, is focused on understanding the cycling of nutrients on organic farms. That includes inputs, cycling within the soil and finally exports or outputs as harvested crops. Understanding the flow of nutrients will improve the efficiency of nutrient inputs as well as reduced risks of non-intended exports- through leaching and run-off. Because soil management on organic farms is based upon organic matter inputs, traditional soil tests to not always accurately predict the amount of available nutrients. This research aims to design other approaches to nutrient management on organic farms. Estimating nutrient additions includes common tests for nutrient content as well as estimates that are grower friendly. As an example, estimating nitrogen contribution from green manures is challenging to growers. Simple measures of height and density are being tested to see if these can be accurately correlated to biomass and nitrogen additions, prior to turning in a green manure. As far as outputs, over 300 analyses of different vegetable crops and cultivars have been conducted to determine at what level generalizations can be made on nutrient content of harvested vegetables. The goal is to be able to estimate the amount of nutrient export if you know your yields. This could then be inputted into a nutrient 'balance sheet' to determine when and where additional fertility may be warranted. It can also be used to estimate how rotations and inputs are contributing to longer term build-up of nutrients in organically managed (or other) fields.

Crop Rotation Planning Manual

Understanding how crop rotations might be improved on organic farms, to improve pest suppression or meet other goals remains an important research need for organic farming system design. The first part of NEON's work related to crop rotation planning focused on understanding how expert organic vegetable farmers design and adjust their rotations to meet their goals, and this was facilitated by Dr. Sue Ellen Johnson of the New England Small Farm Institute. We used a model that was developed by educators called Develop a Curriculum (DACUM). The DACUM philosophy states that expert workers are best able to describe what it takes to be successful at their job, and this success is directly related to the knowledge, skills, tools and

attitudes that workers must possess to perform the tasks correctly. We assembled a panel of 12 expert organic vegetable growers that spent two days brainstorming duties (areas of competence) and tasks (specific to duties) need to successfully plan and execute crop rotations. This is the first time that this type of approach has been used with growers to model management of a biological system. What was very exciting about the process was that not only were these excellent growers able to share their knowledge in a structured way, they too reported deepening their own understanding of the complexity of crop rotation design. The information they generated was summarized into a DACUM chart (see website), and has been incorporated into a more in-depth manual on crop rotation planning, led by Dr. Chuck Mohler at Cornell, that includes background information on crop rotation planning, transition, example rotations and methods to plan and evaluate organic rotations.

Organic Rescue Treatments

Currently, there is very little data available on efficacy of organic pest control materials. A NEON team collated and evaluated what data is available on several materials. That summary is now available, and is titled the "Resource Guide for Organic Insect and Disease Management." Led by Brian Caldwell, this publication summarizes the available efficacy data on 13 organic spray materials and provides pest management approaches for five vegetable families. All the information is now available on line via http://www.nysaes.cornell.edu/pp/resourceguide/ or the NEON website. Hard copies can also be ordered.

Real World Organics: Case Studies of Exemplary Organic Farms of the Northeast

Finally, NEON's largest project is the interdisciplinary study of 11 exemplary organic farms in the Northeast. These farms were nominated by their peers as being successful organic farms. A list of the farms is available at the NEON website. We seek to accurately describe management, biological and economic interactions on these farms for several goals:

- To highlight the diversity of organic agriculture in the Northeast
- To identify new research questions for more disciplinary scientists
- To describe these needs to the public and to policy makers
- To examine one approach to multidisciplinary research

On each farm, we have picked a few focal crops for in-depth study. The questions we seek to answer, for each farm include:

- What are the production strategies & yields of key crops?
- What are the weed problems and how are they managed?
- How do farmers determine crop mix and rotations?
- What are the problem pests for key crops and how are they managed?
- What practices are used on the farm to manage soil health & fertility?
- How do farmers determine the crop mix and evaluate the business profitability?
- What are some financial benchmarks for successful organic farming operations?

Cases are currently being reviewed and will be posted as soon as approved by farmers.

Organic Research and Demonstrations at Kentucky State University

Michael Bomford
Kentucky State University
Frankfort, Kentucky

Only twelve Kentucky farms are certified organic operations, but many more of the state's farmers are interested in organic agriculture. In April, 2005 Kentucky State University (KSU) hosted a full-day workshop on organic agriculture, attended by thirty-three Kentucky farmers. None had certified operations, but thirty-two said they were interested in organic methods, seven claimed that they currently grow organically, and ten said that they plan to certify in the near future. Since then, the author has contributed to three more full-day workshops, and numerous shorter workshops with an organic focus, developing relationships with more than 100 Kentucky growers interested in interest in organic production practices.

The KSU land grant program already strives to serve limited resource farmers. KSU researchers recognize that they can serve organic farmers, too, by developing systems that use local resources and promote resource cycling.

The Kentucky State University research farm has several projects of interest to organic producers:

1. The farm serves as the National Repository for Pawpaw Germplasm, and is the site of considerable research related to this crop, which is native to the area, and well-suited to organic production. Among these studies is a SARE-funded research project examining organic weed management options for pawpaw growers (Contact Dr. Kirk Pomper, 502-597-5942; kpomper@kysu.edu).
2. The farm is the site of a multi-year ecological study comparing organic, conventional, and genetically modified sweet corn production systems (Contact Dr.John Sedlacek, 502-597-6582; jsedlacek@kysu.edu)
3. The farm is home to a mobile poultry processing facility, serving small-scale pastured poultry producers. The facility enables small growers to bring their product to market, promoting the integration of crop and livestock production encouraged by organic production standards. (Contact Steve Skelton, 502-597-7501; sskelton@kysu.edu)
4. The farm is the site of continuing field evaluations of botanical insecticides based on hot pepper and wild tomato extracts, which will be suitable for use on organic farms, if commercialized (Contact Dr. George Antonious, 502-597-6005; gantonious@kysu.edu).
5. The farm houses several aquaculture facilities, reflecting KSU's commitment to aquaculture as its program of distinction. KSU researchers are taking a lead in developing organic aquaculture production methods, in anticipation of revisions to national organic standards that will allow labeling of organically-produced aquatic animals (Dr. Bob Durborow, 502-597-6581; bdurborow@kysu.edu)
6. A portion of the farms was certified organic in 1997, and continues to be managed according to organic standards. This land will be re-certified once the Kentucky Department of Agriculture regains its certifier status. It is the site of a 5-year study comparing organic weed management tactics in terms of yield, weed pressure, and soil quality. A wide

range of organic demonstration plots have been established in this area, including a high diversity vegetable garden, winter and summer soil-building cover crops, and a low-input high tunnel for winter vegetable production (Contact Dr. Michael Bomford, 502-597-5752; mbomford@kysu.edu).

Research and demonstration projects at the KSU farm are developed in collaboration with local growers, integrating extension and outreach components. We try to build on the success of local, innovative, successful producers. For example, our high tunnel demonstration builds on a decade of successful winter vegetable production by Paul and Alison Wiediger, near Bowling Green, KY. Our organic sweet sorghum demonstration project was developed in cooperation with Lawrence and Judie Jenkins, who operate an African-American "living history" farm near Danville, KY, selling syrup made from sweet sorghum juice extracted with a horse-drawn machine.

Growers and extension agents visit the KSU research farm regularly. Full-day workshops with a sustainable agriculture focus are held on the third Thursday of every month. These usually incorporate hands-on demonstrations, allowing growers to try their hand at the techniques they learn. Recent examples include workshops in which growers helped erect an organic high tunnel, or learned to graft pawpaw scions onto rootstocks.

Studies conducted on the 'organic' section of the farm are designed to determine best management practices for organic growers, not compare organic to conventional systems. For example, our current weed management study compares six different weed management tactics that could be used within organic crop production systems: hand weeding, shallow cultivation with a rolling cultivator or spring-tine weeder, flame weeding between rows, whole bed flaming before crop emergence, and incorporation of corn gluten meal after crop emergence. In both sweet corn and vegetable soybeans the rolling cultivator has given weed control and yields equivalent to those obtained with hand weeding, and superior to the other weed management tactics tested.

KSU's organic agriculture focus positions this 1890 land grant university to serve a rapidly expanding grower base and cater to demand for locally-developed solutions to challenges faced by the organic producers in the commonwealth.

Organic Seed Production

Emily Skelton and **Emily Gatch**
Seeds of Change Research Farm
San Juan Pueblo, New Mexico
Adam Smith
Organic Ridge Farm
Brookville, Kentucky

High quality seed serves as the foundation of any productive agricultural system. Seed quality is defined by three factors: genetic purity, the trueness to type of a given variety; physical purity, the extent to which a given seed lot is free of weed seed, other crop seed, and foreign matter and seed health, which is measured by viability of the seed (germination percent), vigor (germination rate and normal seedling development) and the presence of seed-borne diseases. The production of high quality organic seed that has been selected for superior performance in organic systems and regional climates is a current challenge in the seed industry. Small farmers should be encouraged to participate in this process by saving seed both for personal on-farm use and for organic seed companies, which create niche markets for seed producers. Seed production is a complicated and delicate process, one that requires years of experience to master. This paper outlines some of the factors and techniques critical to the production of quality organic seed and provides a case study of a model organic seed producer.

The Story of a Seed

The final quality of a seed is affected by various factors at every stage in the cycle from seed to seed. Field production methods, including observing proper isolation distances to maintain varietal purity, enhancing soil fertility to promote vigorous growth and fruit production, using drip irrigation to reduce foliar disease, and following recommended organic pest and disease management practices are key players in the early chapters of seed production. Climatic and environmental factors are often critical to the health of seed. During a particularly rainy autumn, excess moisture on the seed heads of a mature seed head can enhance growth of fungal diseases. Harvest timing and handling greatly influence seed quality; a seed crop harvested too early can have an abundance of immature seed that fails to germinate, whereas a crop harvested too late may suffer seed loss from shattering seed heads. Drying seed properly to recommended seed moisture levels affects both immediate seed quality and the potential for long-term storage. Proper storage conditions, particularly low relative humidity and low temperatures, are essential if seed is to maintain vigor beyond the current season.

Post-Harvest Seed Cleaning and Scalping

Threshing, scalping and fine cleaning the seed affects germination and purity of a seed lot. However, over-handling or rough handling in the harvest or threshing stage can harm the fragile seed coats of crops such as soybeans. Seed lots can have much improved germination if light, immature, or dead seed is removed. If a seed lot is contaminated with seed of other species, quality can be improved if these weeds or other seed are removed.

Harvesting can be identified as dry (okra, brassicas, corn, beans and lettuce) or wet (melons, tomatoes, cucumbers and squash). After dry harvested seeds are brought in from the field and before further removal of plant parts and or weed

seed from the lot, the seed must be dried. The best place for this is on a large screened table, off the ground and with fans nearby for increased airflow. After sufficient drying, the leaves, sticks and other plant parts present in the seed lot will be brittle and easily fall apart when crushed. If plant parts or small twigs still bend when handled, separation from the seed will be more difficult. For small scale production, rubbing the seed and chaff through a stiff screen made from simple hardware cloth mounted on a wooden frame and suspended over a tarp is the best method. There are various hole sizes available for the hardware cloth screen. This will remove all the large material from the seed. The hole size should allow all of the good seed to fall through.

Once separation is complete, a 20 inch, three speed box fan blows away light chaff from the seed. Place two rectangular bins on the ground on a tarp outside with the box fan on top of a stool higher than the bins. Drop the seed from a pan held over the bins in front of the fan. The idea is to catch the viable, healthy seed in the first bin and allow the light, immature, or dead seed and chaff to blow away. It may be necessary to adjust the speed of the fan's airflow and the placement of the bins.

For wet seeds such as melons, squash and cucumbers, a period of fermentation is important to break down the gel coating surrounding the seed and also to allow beneficial yeast to kill disease-causing bacteria and fungi. The seed is allowed to ferment in the juices from the fruit with a small amount of water added if necessary (too much water can cause the fermentation process to slow and the seed to sprout). After two to three days at temperatures between 70˚ and 75˚ F the seed is washed. Wash seed until only heavy seed remains in the bottom of the bucket with very little skins or other plant parts. Pour the wet seed through a small screen that holds the seed and allows the water to go through. Dry the seed on screens with fans blowing for at least one week. When the seed is dry it can be treated as a typical "dry" seed and cleaned accordingly with fans and/or screens.

Fine Conditioning by Seeds of Change
Seed arrives directly from growers to the Seeds of Change Research farm in New Mexico where its quality and purity is further improved at our seed-cleaning facility. Seed is initially evaluated visually for impurities such as plant parts, gravel, soil and other seeds such as weeds or another field crop. If necessary, seed is dried on screened racks designed for this purpose.

Seed lots can be improved in various ways through fine conditioning. Seeds can be sorted by weight, size, shape and color. We have several machines that use gravity to separate seed by weight. These smaller seeds can be separated out using a screen cleaner, such as a crippen or a small hand screen held over a bucket. A machine called a color sorter can sort seeds by the color of the seed coat. This piece of equipment is so accurate that seed lots that would previously have been discarded due to the presence of a prohibited weed seed can be thoroughly cleaned and sold. The USDA sets standards for each weed seed and classifies them as noxious prohibited weeds (not one seed allowed in a seed lot) and noxious restricted weeds (each state determines the amount allowed within a seed lot). In order to sell a variety in any state, Seeds of Change allows only the lowest amount of restricted weed seed in any lot sold in our bulk catalog.

Seed Storage
The viability and vigor of seeds in storage is determined primarily by the relative humidity and the temperature maintained in the storage facility. A rule of thumb is that the sum of the relative humidity and temperature (F) should not be more than 100; i.e. if the relative humidity is 60 percent, the ambient temperature should not be more than 40ºF. Seed moisture content should ideally be less than 13 percent. Above this level, storage fungi proliferate and seed respiration increases, ultimately decreasing the longevity and vigor of seeds.

Portrait of a Seed Grower

Given the complexity of factors and processes that contribute to quality seed production, an organic seed grower must demonstrate a unique set of characteristics combining experience, curiosity, ingenuity, and patience. Some of the criteria considered in the development of a relationship between a seed company and a grower are as follows:

- Capacity to provide a unique offering that is currently lacking
- Strong indication of longevity as a seed producer (5-10 years)
- Openness and cooperation
- Environment of farm
  - Size, climate, soils, bio-region, proximity to other seed farms (cross-pollination risk)
- Skill level
- Infrastructure
  - Types of harvesting and seed-cleaning equipment available
  - Farm plan (crop rotation, pest control, irrigation
  - Buildings (greenhouses, structures for seed drying and storage)
- Ability to expand in the future
- Organic certification

Adam Smith, a second-generation seed producer who farms in northern Kentucky, has demonstrated a superior capacity to produce high-quality organic seed. He and his father produce seed in a number of crop groups, including okra, corn, tomatoes and peppers. They have identified those crops that are suitable for production in their area and have developed field management, harvesting, and cleaning processes that enable them to consistently produce high-quality and thoroughly cleaned seed. They are also involved in the production of tomato stock seed, which has been selected and rogued for improved disease resistance. Seed producers like Adam are the backbone of small seed companies and of the movement to develop and preserve regionally adapted varieties. If the current market growth for organic food and seed continues, opportunities for innovative growers committed to organic agricultural practices will expand as well.

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Track Five

Alternative Enterprises

The Small Farms Industry Clusters (SFIC) Project

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Researchers, development professionals and policy makers increasingly recognize that industry clusters are critical to regional development and competitiveness. However, cluster research to date has not focused on agricultural producers. This project: examines the potential of, and variations in, economic clusters of small- and medium-scale farms for achieving agricultural economic development and environmental management objectives; identifies the unique characteristics of clusters that may support long-term farm viability and the sustainability of surrounding rural communities; and engages farmers and development professionals as integral partners in the research/outreach process.

Clusters are concentrations of firms or businesses that:

- are located in relatively close proximity to each other,
- compete with each other in similar markets,
- cooperate with one another to enhance both technical skills and market access,
- support, through social networks, growth and development of individual businesses,
- share common inputs such as labor with specific skills,
- recruit support industries based upon the concentration of firms in an area,
- benefit mutually from new knowledge generation that is location specific, and
- work together to respond to new market needs or societal demands, such as environmental management.

These latter features set clusters apart from traditional associations of firms or farms, such as cooperatives. As an analytical framework, clusters provide an ideal integrated and comprehensive tool for assessing the interplay among economic, social, environmental and biological factors related to small farms and rural economic development. We examine and compare clusters formed around:

1. traditional commodities (dairy, wines, mushrooms);

2. agricultural practices or philosophies (organic vs. non-organic production); and
3. social or ethnic networks (Portuguese, Hispanic, female and disadvantaged farmers).

Clusters may form spontaneously in a region based on natural resource endowments and other unique circumstances or historical accidents (e.g., Finger Lakes wineries, mushrooms near Philadelphia). Or, they may be created as a result of local community and business action. At the same time, without on-going routine analysis, monitoring and nurturing, clusters may cease to exist altogether, or they may relocate to other areas as relative competitive advantages change. For example, the sugar beet industry that was started over 150 years ago by Mormon settlers recently withdrew completely from Utah to consolidate in Idaho (*Salt Lake Tribune*, August 20, 2004). The closing of a major Kraft™ cheddar cheese manufacturing plant in Canton, NY is another example. Thus, a region that currently enjoys clustering benefits has no assurance that they will last forever. A critical challenge for all U.S. regions is to determine their competitive advantage in the global economy. Industry clusters can be a key vehicle for describing, understanding and enhancing sources of regional competitiveness.

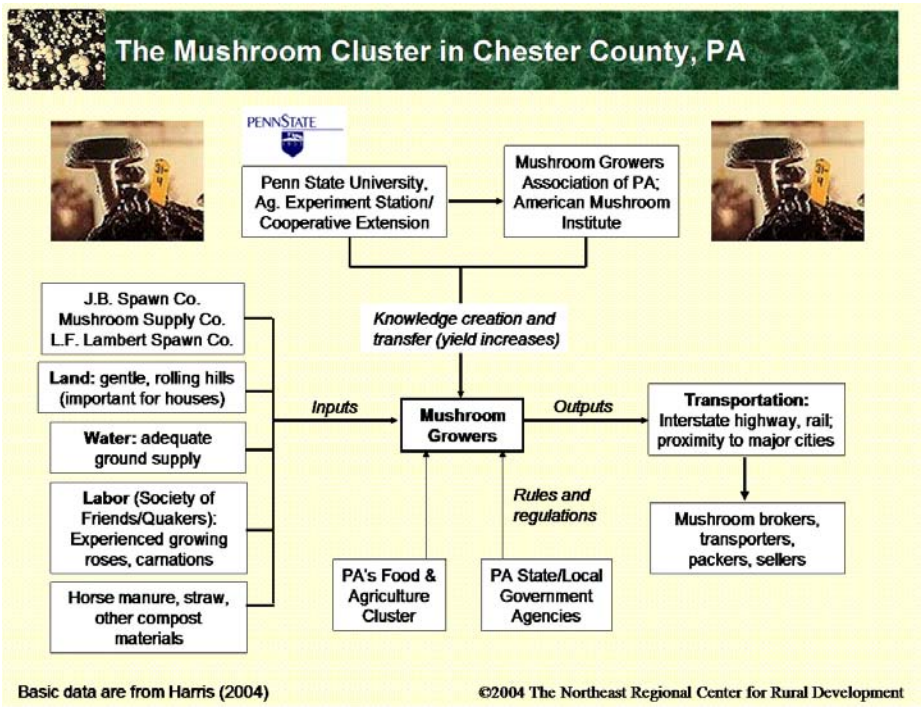
An essential idea behind clusters is that it matters not so much what the firms of a region produce, but *how* they do so. In clusters, firms *compete cooperatively* and they *cooperate competitively* with one another. This unique circumstance assumes organization and communication patterns among cluster members that have the potential to influence firms' competitiveness, management techniques, environmental impacts, social support, and community relations. However, these benefits extend beyond the individual producer to the cluster as a whole, creating an environment in which collective learning and sharing of resources is fundamental to the business philosophy.

Clusters have the potential to enhance biological and environmental management practices on small farms. In Ontario, Canada, for example, several farmer organizations joined together to create their own environmental farm planning tools rather than be faced with federal environmental regulations. This voluntary self-assessment, called the Ontario Environmental Farm Plan, allows farmers to assess their own practices, and the plans are then evaluated by peer farmers. By taking this approach, the community of farmers felt that they could more clearly demonstrate their commitment to environmental stewardship without the need for additional regulation. The process also created a means for sharing innovation and fostering rich discussions on how to best blend agricultural and natural resource management goals. Clusters potentially foster this same type of rich exchange and innovation around natural resource management. In the U.S., in contrast, the USDA's NRCS has had primary responsibility for farm bill cost-share and implementation programs to remediate negative environmental impacts in agriculture. While some of these programs have been voluntary, and others mandatory, none encourages groups of farmers to join together in responding to the programs.

lusters may also provide the cultural and social backdrop needed to encourage or pressure farmers to act to protect the environment or their products. As an example, an immigrant farmer was discovered using stream water to wash vegetables to be sold in a major metropolitan market. While this practice was acceptable in the farmer's home country, it is not acceptable in the U.S., or permissible under FDA regulations. Sensitivity to these types of cultural norms is essential to develop educational materials and interventions appropriate for

the newly emerging important groups of immigrant farmers. Clusters may help to develop the skills of new farmers at a faster pace than if they worked in isolation. This sentiment is supported by research in the adoption and diffusion of agricultural technologies, which stresses that trusted individuals, who are similar to each other, are likely to have greater effect on the absorption and integration of information and adoption of practices. This trust is most often built through interaction within local networks.

By understanding the social and cultural networks that exist within clusters, we are able to better understand how biological and natural resource information is interpreted and applied on these small farms. Organic farmers are very willing and able to describe how their practices protect environmental resources. This is tied to their philosophical orientation and is essential to the process of certification. Conventional farmers do not have the regulations related to certification to "force" the environmental discussion. Yet certain clusters of conventional growers focus very closely on environmental issues, especially as they affect farm profitability. By understanding how the cluster supports environmental information flows and exchanges, we can design specific interventions to improve farm stewardship.



A chart describing the mushroom industry cluster is included here for illustrative purposes; we are developing similar diagrams for the agricultural clusters selected for in-depth study. Cluster analysis focuses explicitly on the horizontal and vertical (marketing channels) integration of food system participants. Thus, the framework directly incorporates processing and marketing channels. In addition, cluster analysis focuses on all of the legal and institutional forces that impact the cluster and its profitability as well as sustainability. Linkages to other relevant clusters are also considered explicitly.

In a flat world, the need to help regions identify and pursue strategic branding activities has never been greater. Clusters are ideal for accomplishing this. In this context, Rosenfeld argues that we have gone through three watershed periods in the last 50 years:

- 1960s and 1970s: Making things cheaper
  - mass production (Taylorism)
  - division of labor, advantage based on cost
- 1980s and 1990s: Making things better
  - quality and speed key, automation
  - TQM, JIT, flexible specialization
- 2000s: Making better things
  - aesthetics, authenticity
  - design, innovation, uniqueness

In conclusion, we argue that clusters are critical for helping producers "make better things," thereby distinguishing themselves in a flat world in which the production of basic, undifferentiated commodities will increasingly move to the lowest-cost production sites. Important examples of existing regional brand identities include Iowa 80 Beef, the Finger Lakes Winery Alliance, Vermont artisan cheese makers and the Tuscarora organic growers, and Mumm Napa valley. In this new economic environment, rewards will be greatest for those who are able to provide their customers with sophisticated and lasting experiences, as opposed to mere commodities. Additional information about this project will be posted over time at the following web-site: http://www.cas.nercrd.psu.edu/

Big Ideas for Small Farm Profitability; Strategies for Increasing Small Farm Profitability

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To succeed on a small farm, you can't be afraid to think big. Success requires ideas, innovation, imagination and inspiration. It also takes information: How to identify potential niche markets. Where the customers are. How to try produce into products that people want to buy. Where the risks are – and how to avoid them.

The North Central Initiative for Small Farm Profitability is a four-state, multi-institutional, farm-to-fork effort designed to improve the profitability and competitiveness of small and mid-size farms in the Midwest.

The initiative brings together a unique and powerful blend of producers, food and social scientists, marketers, extension educators, economists, and others who are attempting to identify, adapt and apply practical, science-based, market-driven strategies that work.

This presentation discusses the marketing information that can help small farms turn bright ideas into bottom line results.

Background

The North Central Initiative for Small Farm Profitability was funded by a grant from the U.S. Department of Agriculture CSREES and is a program of the University of Nebraska-Lincoln Institute of Agriculture and Natural Resources/Cooperative Extension Services. The partners in the project included:

- Iowa State University,
- University of Missouri,
- University of Wisconsin,
- Center for Rural Affairs,
- Practical Farmers of Iowa,
- Michael Fields Ag Institute.

The grant's main components consisted of applied research, case studies, producer clusters, and dissemination and education. All of the outcome reports (case studies, research projects, etc.) are available on the following two web sites: Food Marketing and Processing (FoodMap) (www.foodmap.unl.edu) and Missouri Alternatives Center (MAC) (http://agebb.missouri.edu/mac/).

FoodMap is a clearinghouse of research reports, case studies, and other industry specific articles and links relating to value-added market opportunities for farmers and ranchers in the Midwest. MAC contains a list of inks of Extension Guidesheets from some of the top university research centers in the world. On these links you will be able to find information on a large variety of specialty value-added products from Asparagus to Watermelons, and Aquaculture to Worms!

Project Results

Big corporations pay big bucks for market research. At the North Central Initiative for Small Farm Profitability, you can access science-based, market-driven research at no charge.

Want to know what the market potential is for Midwest specialty cheese? The Initiative has the data. Want to learn about high-end exclusive market for chestnuts? The initiative can tell you all about it. How about niche markets for beef and pork products? All the know-how

is available, absolutely free, in the case studies and research compiled by the Initiative.

There are over 20 applied research project on everything from niche marketing to production research that have been provided by the initiative to help identify alternative products and the best way to deliver these products to consumers. Initial research is focusing on pastured poultry, specialty cheeses, specialty barley, grass-fed beef and dairy, and raising hogs in hoop houses. All of the research projects can be found on www.foodmap.unl.edu.

The specialty cheese report quantified the market demand for specialty cheese. The report discusses real-world examples of successful on-farm specialty cheese operations as well as cost estimates for very small to medium sized specialty cheese plants.

The consumer research project consisted of a telephone survey of over 2000 households in the 4 state areas which asked consumers questions about interest in locally grown foods. It examined purchasing behaviors and attitudes and confirmed consumer's interest in locally grown foods. The report discusses some of the perceived obstacles in purchasing local foods and shows producers areas of interest to use when determining their target market for their products.

Key and unique to the North Central Initiative for Small Farm Profitability are farmer clusters working with researchers to put science-based, market-driven results into action in the four-state region. The clusters provide practicality and relevance to the initiative's objective of increasing farm profitability.

The clusters are made up of farmers and ranchers in Iowa, Missouri, Nebraska and Wisconsin who have an idea or product, or who are already working on an idea or product, for increasing small farm profitability. The clusters vary widely in the products being produced, location, size and market maturity. Local resource providers supported the clusters, and it is hoped cluster members will help apply knowledge learned from this initiative into their local communities.

Some of the examples of cluster projects are:

- Chestnut Research Project. This project provided marketing and processing research on a unique agricultural product. The chestnut cluster credits the research in identifying a whole new market for value-added chestnut products.
- Planning Guide for Prospective Winery. The project surveyed wineries, and wine retailers. Secondary information was collected to look at wine consumption and trends, production and processing issues, capital cost opportunities for tourism and included case studies of successful wineries as well as best practices.
- Meat Goat Markets. A report on marketing meat goats was conducted to determine where markets exist for fresh goat meat. It also looked at competition, how fresh goat meat is purchased, and competitive analysis of the fresh goat meat market.

Another area of the initiative was the case studies. Forty case studies were completed on a variety of value-added products. Seven case study categories focus on strategies that have potential to improve the efficiency, profitability, and competitiveness of small and mid-size farms. The case studies are designed to discuss key factors in the success of the strategy. The cases address and draw lessons from both success and failures of the strategy, and can be used to identify best practices. The case studies draw on data as well as on subjective matter. This is a great compilation of case studies that can be used by individuals interested in exploring new value-added activities for their farm or ranch. Many different types of value-added businesses are included.

The resources available from the North Central Initiative for Small Farm Profitability can help in identifying the most fertile areas in which to plant new ideas. Whether it is a niche market for your product, an innovative value-added approach, or teaming with a group of producers to serve a specialty industry, the one-of-a-kind information from the North Central Initiative can help you assess opportunity, determine risk and develop a plan for success.

Contributions and Challenges of Collaborative Community Supported Agriculture: Lessons from Iowa

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Introduction

This panel presentation brings together a group of Community Supported Agriculture (CSA) producers, members, organizers, activists, advocates, and researchers to discuss the unique contributions and challenges of collaborative CSA (cCSA) in Iowa. The topic is timely and important as farm jobs in the Midwest are diminishing, rural populations shrinking, and communities declining as agriculture is restructured and becomes increasingly consolidated. In response to these changes, alternative food institutions (AFIs) have emerged, one of which is CSA. CSA was adopted as part of growing interest to relocalize agriculture to reconnect consumers with producers, the land, and their communities. Since its inception, CSA has been noted for helping create rural economic opportunities, conserving the environment, and reshaping community relationships. Yet there are many different kinds of CSA arrangements and therefore different anticipated impacts. A review of national CSA directories shows that most for-profit CSAs are owned and operated by a single proprietor or farm family, while very few are comprised of a well-defined coalition of small-scale, collaborating farmers. Multi-producer ventures purportedly enable producers (some of whom may be young or new—or at least new to local organic food production) to share risk, share information, and share markets. How do these more formally organized multi-producer associations function? What unique contributions do they have to offer rural development and what challenges do they face? We sought to answer these questions by conducting a study of collaborative CSA in Iowa.

In 2005, the North Central Regional Center for Rural Development received a grant from the Leopold Center for Sustainable agriculture to conduct research of cCSA in Iowa. Specifically for this one-year project, we are studying the role for-profit, multi-producer CSA plays in incubating small rural businesses as well as defining other contributions cCSA makes to AFI. We are also identifying the characteristics of cCSA models that appeal to members. We are collecting this information through a combination of interviews and self-administered surveys of cCSA producers and members.

For the purpose of this study, we defined collaborative CSA as CSA in which multiple producers collaborate to provide food or fiber products to members of a CSA *for which no single producer (or family) has sole responsibility*. At the same time, we acknowledge the varying degrees to which

collaboration takes place in all types of CSAs; even owners of single proprietor owned CSAs (or sCSAs) engage in collaborative relationships with other producers through formal agreements such as contracts or informal means such as a phone call or handshake. With this in mind, we are therefore suggesting that a continuum of cooperation exists among small-scale CSA producers, ranging from more formalized, long-term relationships to complete independence and self-containment. Somewhere in between are varying degrees of informal, short-term, dynamic collaborations (see Figure 1).

Figure 1. CSA Producer Collaboration Continuum.

Collaboration ***Independence***

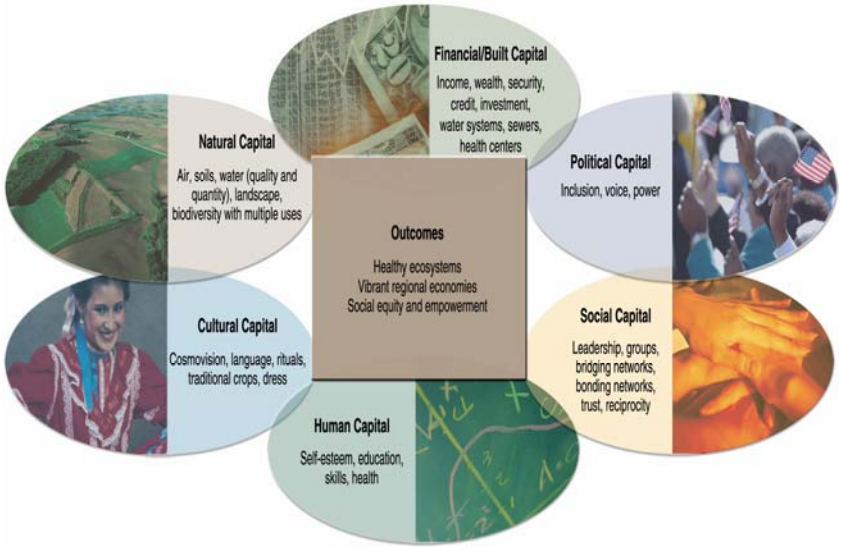
Cash for goods and services	Exchange of goods and services	No producer transactions
Long-term relationships	Short-term relationships	No relationships
Formal written contracts	Informal verbal agreements	No agreements
Static relationships	Dynamic relationships	No relationships

We identified four formal collaborative CSAs in Iowa. One chose not to participate in this study. Three are participating but only one has completed its participation so far. Results in this summary are therefore derived from only one collaborative CSA in Iowa. For updates, visit us on the web at http://www.ag.iastate.edu/centers/rdev/projects/csa/index.html.

Research Framework

Flora, Flora, and Fey (2004) have presented the Community Capitals Framework (Figure 2) as a model to evaluate community development efforts. This framework was developed to help communities track investments and outcomes related to development efforts, including the establishment and maintenance of small, for-profit enterprises such as CSA.

F**igure 2.** Community Capitals Framework as an Evaluation Tool for Community Development.



This framework is useful for measuring a variety of community benefits that can result from community and economic development efforts. Instead of focusing exclusively on economic factors, the model takes into account a wide variety of investments and impacts, including those that affect the natural environment, social ties, human resources, the economy, local culture, and politics. We are using this framework to assess the impact participation in collaborative CSA has had on both producers and members as they relate to the creation of multiple types of community capitals.

Member Survey Methodology*:* For Flat Hills CSA (a pseudonym), we mailed surveys (via snail mail and e-mail for a double mailing) to all current members, as well as former members in the past five years. We received 141 usable surveys, for a response rate of 57 percent. Not quite half (44%) were current members while a little more than half (56%) were former members. Fifteen percent of the member respondents indicated they either currently were or had been members of a single proprietor CSA.

Producer Survey Methodology: We used the same methods to contact both current and former producers who participated in Flat Hills CSA, although the time frame included the entire life of the CSA rather than the past five years. We received 20 usable surveys for a response rate of 80 percent. Sixty percent of producer respondents were current producers whereas 40% were former producers.

Results

Member Profile*:* Four in five respondents are female (corresponding to 9 in 10 households that logged at least one contact as female with the cCSA coordinator). Average age is 45 years. About one in ten live on an acreage—a term associated with living in the countryside with the remainder living in town. The average length of residence is 14 years. One in four respondents are new to the area, having lived there for five years or less; one in four are long-time residents, having lived in the area for more than 20 years. Two in five have at least one child living in the household. Half of cCSA households reported an annual income last year of $70,000 or more.

Seven percent earned less than $20,000.

Producer Profile*:* Almost half (47%) of responding producers are female, which corresponds to our sample population of the producers. The average age is 43; the youngest is 27 and the oldest 70. One in three farmers is 35 years old or younger. With one exception, the rest are 43-55 years old. We can therefore characterize this group as young and middle-aged producers. In addition, one in four producers are “new,” having been involved in production for five years or less. One in four have been producing for 6-10 years, and almost one in three have been involved in production for 20 years or more. One in three producers have lived in the area for five years or less. The majority (58%) of producers do not have children living in their household.

Income and marketing*:* Every producer respondent indicated that CSA is not their only market. Over half (53%) sell at farmers markets; 42% sell to institutional buyers such as restaurants; and 16% sell at local food coops. Over half (56%) sell their products through other means such as mail order, custom orders, at grocery stores, and farm stands. Despite taking a diversified approach to marketing local products, 61% of producers said that 25% or less of their family’s needs are met by their overall food and fiber product income. Only one producer reported that all of the household needs were met by his/her overall food or fiber product income. Moreover, 76% of producer respondents reported that participation in cCSA provides them with 10% or less of household income. These are sobering statistics, strongly suggesting that

producer participation in local food systems is not financially viable. It is therefore not surprising that 61% of producers work off the farm and 73% for whom it is applicable report their spouse or partner works off the farm.

Motivation for participation*:* Why then do producers choose to participate in local food systems? The reasons are not financial. We asked producers the extent to which they agree that participation in cCSA helped them gain benefits according to a list of 52 questions. We ran rudimentary preliminary statistics to summarize the benefits they experience. Below are the results organized by type of community capital along with summary results from similar questions we posed to members.

Table 1. Producer and member benefits from participating in collaborative CSA.

Benefits derived from participation in collaborative CSA (1=strongly agree, 5=strongly disagree)	Producer rank	Producer mean (n=20)	cCSA member rank	cCSA member mean (n=141)
Natural capital	1	2.30	1	1.92
Social capital	2	2.48	5	2.32
Cultural capital	3	2.52	2	2.20
Human capital	4	2.53	3	2.21
Political capital	5	2.79	6	2.42
Financial capital	6	3.02	4	2.30

In summary, all groups rank natural capital benefits highest while political capital ranks low. Not surprisingly, producers rank financial benefits last in contrast to members who rank it somewhere in the middle. However, social benefits are enjoyed more by producers than members.

CSA as a business incubator*:* Some researchers have suggested farmers markets serve as a business incubator to stimulate the growth and development of small, farm-based businesses. Our research sought to discover whether the same held true for CSA. We found that 35% of current and former producers of Flat Hills CSA reported participation in CSA helped them start or continue new or different farm-related enterprises. These enterprises include four CSAs, a direct market horticultural farm business, a venture that cultivates specialty crops for farmers markets and retail sale, and expansion of a laying flock to supply local restaurants. In addition to the growth of new local foods-based business, three in four producers also credited CSA for providing them with invaluable business knowledge and support that helped them continue participating in local food systems. This included encouragement to enter into and grow for the local food market; greater understanding of local food consumer preference; the need for consumer education, trust, and cooperation; the provision of a stable income while honing producers' marketing skills; a sense of empowerment to influence local food markets; comprehension of the time demands marketing requires; risk sharing; focus on growing less labor intensive crops that have the greatest returns; gaining exposure in other local food markets; and knowledge to help weigh the costs and benefits of operating CSA. (One in five producers reported they currently own CSA.)

CSA as a career incubator*:* In addition to serving as a business incubator, CSA is training producers that prepare them for careers outside of CSA. Nearly two in five producers (37%) report they have been employed in an agriculturally related position paid by an off-farm source since participating in CSA. These seven producers have filled positions mostly in the non-profit sector, but also the public and private sectors (e.g., co-owner of a sustainable foods marketing/distribution company, college garden manager, and food systems program specialist assisting farmers and companies identify viable products and address production and marketing issues). Of these seven producers, five (71%) credit collaborative CSA for 1) helping them serve in these positions by providing opportunities to network that led to employment; 2) giving them an opportunity to share experiences with and gain support from other producers; 3) increasing their knowledge of growing food; 4) increasing their understanding of direct marketing strategies; and 5) helping them understand producer group dynamics.

Assessment of the Current Meat Goat Industry in the United States

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Introduction

Goats are the most popular animals in the world, and goat meat and milk are the most consumed of all animal products. Goats are popular with small holders because of their efficient conversion of feed into edible and high quality meat, milk and hide. Goats are also used as holistic tools for land vegetation management and fire fuel load control. With proper grazing management, goats can eliminate noxious weeds, restore native grasses and prevent fires through fuel load reduction.

The purpose of this paper is to assess the current meat goat industry in the United States and to determine its future outlook. The data presented in this paper is drawn from three government sources—the 2000 population Census, the USDA's 2002 Census of Agriculture and the USDA National Agricultural Statistics Service. In the U.S., meat goat production has been gaining popularity in recent years particularly because of a growing population of ethnic and faith-based groups who consume goat meat. The national estimates, based on import data only, indicate that the U.S. is more than 500,000 head deficient in meeting current demands for goat meat.

Ethnic populations and faith-based consumers have increased in the U.S. during the last decade, and this change may provide a great opportunity for meat goat production. A small herd of meat goats can be produced on 10 to 15 acres of pastureland and can fit into a majority of U.S. farmsteads and enhance small farm diversity and profitability. Goat meat is also lean and healthier than other meats and can play a major role in the diet of health-conscious people.

Assessing the Current Meat Goat Industry in the United States

Goat Farms in the U.S.

According to the USDA Census (2002), the number of goat farms increased more than 19% with > 12% increase in the goat population from 1997-2002; however, the number of farms selling goats increased by over 45%, and goat sales were up by more than 55% (Table 1). More than 76% of the U.S. goat population is meat goats with milk and fiber goats claiming only 11.5% each (Table 2).

Table 1. Changes in all goat farms from 1997 to 2002 in the U.S.

	1997	2002
Number of farms	76,543	91,462
Number of goats	2,251,613	2,530,466
Number of farms selling goats	29,937	43,495
Number of goats sold	843,773	1,314,310

T**able 2.** Goat industry profile in the U.S.

	Number	%
All goats	2,530,466	100
Meat goats	1,938,924	76.6
Milk goats	290,789	11.5
Fiber goats	300,756	11.9

The number of meat goat farms increased by 18% with over a 57% increase in the number of meat goats (Table 3). The number of farms selling meat goats increased by 48% with over 108% increase in meat goats sold from 1997-2002. Although there was a drastic reduction in Angora goat numbers (530,000) and sales, the increase in total goat population (over 250,000) in the U.S. can be attributed partially to a small increase in the numbers of dairy goats (over 100,000), and a major increase in the number of meat goats (over 700,000). The 71% increase in t he number of dairy goats sold may have also contributed to the rise in the meat goat market.

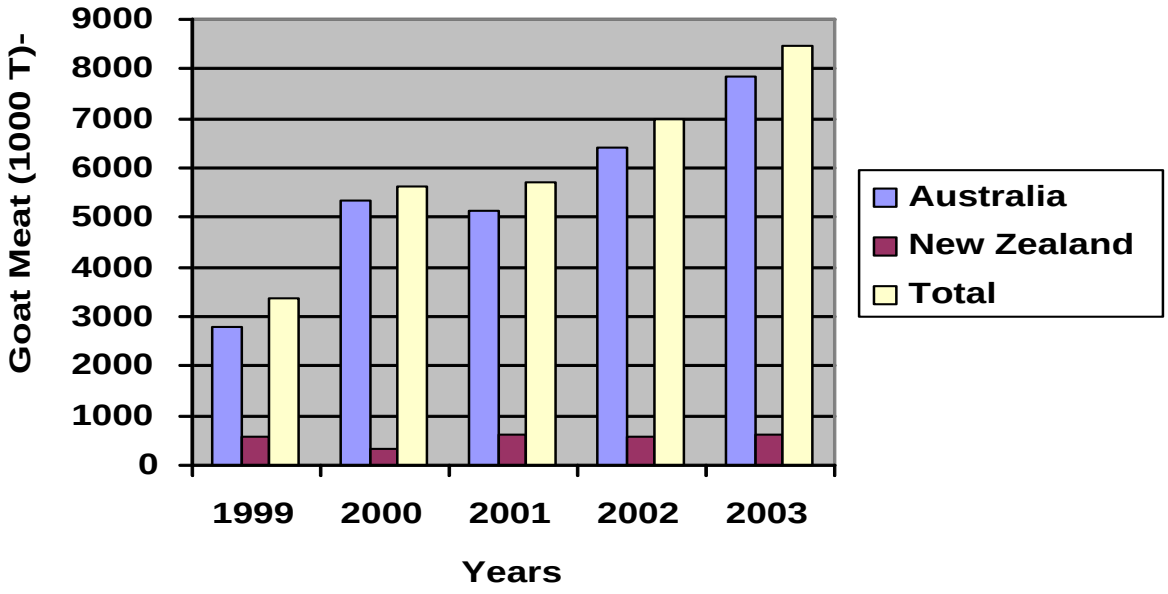
Table 3. Changes in meat goat farms from 1997 to 2002 in the U.S.

	1997	2002
Number of farms	63,422	74,980
Number of goats	1,231,762	1,938,924
Number of farms selling goats	24,539	36,403
Number of goats sold	532,792	1,109,619

Imports and Exports of Goat Meat

The United States was a net exporter of goat meat up until 1990. Exports ceased due to increased domestic demand after 1994. This shift is another indication of increased interest in goat meat consumption nationally. In 2003, the U.S. imported more than 18 million tons (8.46 MT) of goat meat. With an average carcass weight of 35 to 40 lbs., the estimated 500,000 goat carcasses were imported--goat import was up 151% from 3.36 MT in 1999 (Figures 1). The only exporters of goat meat to the U.S. are Australia and New Zealand with 92.5 % of shipments coming from Australia. As indicated by the figure, there is a sharp increase in goat meat imports especially from 2002 to 2003. This trend will most probably continue unless there is an increase in domestic production.

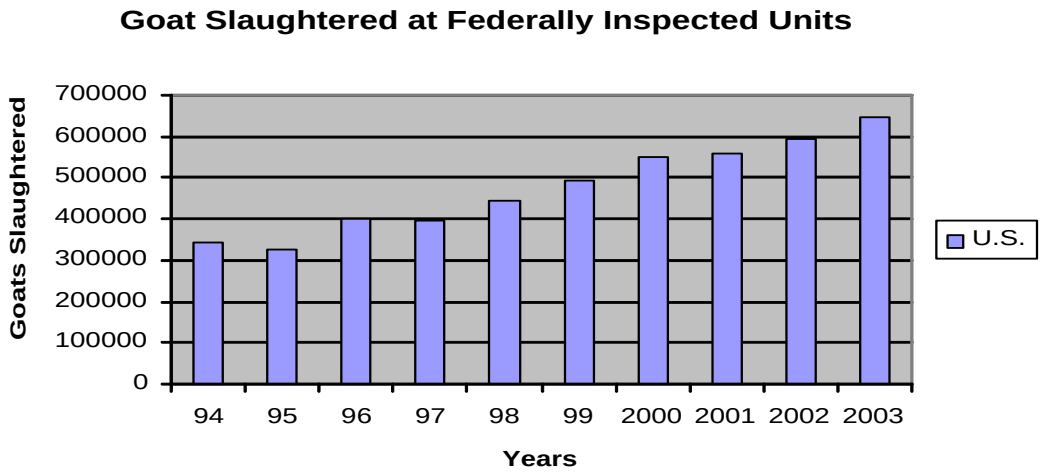
Figure 1. Changes in goat meat imported from Australia and New Zealand (1999 to 2003)



Goats Slaughtered in USDA-inspected Plants in the U.S.

The number of all goats slaughtered at USDA federally-inspected plants in 2003 has increased 45.1% from 1998 (Figure 2). Meat goat numbers have shown a solid increase since 1998, and they likely will continue to increase due to trends in population growth that promote meat goat production. It must also be noted that the meat goat industry in general—is in its infancy; therefore, many on-farm slaughters are not reported.

Figure 2. Goats slaughtered in USDA-inspected plants in the U.S.



Factors That May Have Affected Goat Meat Consumption

U.S. Population Changes

The major contributing factor for the rise in interest in meat goat production in the U.S. is the shift in demographics. According to the 2000 Census, the foreign-born population in the U.S. is up 57% since 1990, from 19.8 million to 31.1 million and continues to increase on an upward trend that started in 1970. As of 2000, 51.7 % of the foreign-born population was from Latin America and 26.4 % from Asia. It is projected that the U.S. Hispanic population is rising at a rapid rate and will reach over 100 million or 25% of the population in the year 2050 (Table 4). This group of immigrants has a strong preference for goat meat and will add to the opportunity for this sector of agriculture to grow.

Table 4. Projections of total U.S. population changes and changes by ethnic groups from 2000 to 2050

	2000	%	2005	%	2050	%
Total	281,421,906		295,507,000		419,854,000	
Asian	10,242,998	3.6	12,419,000	4.2	33,430,000	7.9
Black	34,658,190	12.3	38,056,000	12.9	61,361,000	14.6
Hispanic	35,305,818	12.5	41,801,000	14.1	102,560,000	24.4

Changes in Ethnic and Faith-Based Populations in the U.S. Having Preference for Goat Meat

Although ethnicity and faith tradition undoubtedly overlap, as of 2000 over a million Buddhists and a million Muslims, over 10 million Asians and over 35 million Hispanics are reported as residing in the U.S. (U.S. Census 2000). Again, this increase from 1990 to 2000 creates an opportunity for U.S. agriculture to produce new products to serve the food preferences of this ever-increasing population (Table 5).

Table 5. Percent changes in selected U.S. ethnic and faith-based population from 1990 to 2000

	1990	2000	% change
Buddhists	401,000	1,082,000	170
Muslims	527,000	1,104,000	109
Asians	6,908,638	10,242,998	48
Hispanics	22,354,000	35,305,000	58

Estimating Demand for Goat Meat in the U.S.

The largest group of ethnic consumers of goat meat is the Hispanics with an increase of 57.9% in population from 1990 to 2000. Muslims, Asians and Africans also consume considerable amounts of goat meat. Goat consumption is steady except for special holidays when goat meat consumption increases 3- to 4-fold. There are increases in demand for goat meat for Easter, the 4th of July and certain Muslim holidays such as Aideh Ghorban or Aideh Fatre. Among Chinese, goat meat consumption is usually higher in colder months, between October and February. Understanding these ethnic traditions and matching the demand with production require marketing education and techniques. Also, the special handling and harvesting procedures may differ according to different religions and traditions and can contribute to the value of the goat meat. Halal harvesting procedures for Muslims and Kosher techniques for Jews may add value to goat meat.

Estimating Populations Having Preference for Goat Meat

An attempt will be made to estimate demand for goat meat based on Hispanic, Asian, foreign-born African and Caribbean populations in the United States. Based on the U.S. Census (2000), there are about 10.2 million Asians, about 35.3 million Hispanics and four million Caribbean and African-born populations in the U.S. Among an estimated seven million illegal immigrants (Census 2000), over 50% are Mexicans and other Latin Americans that consume goat meat. In total, there are almost 53 million people that have preference for goat meat in the U.S. (Table 6). There maybe others, but due to lack of availability and marketing channels for goat meat, they can't be included.

Estimating Goat Meat Consumption

The average number of persons living in a U.S. household is 2.59 (Census 2000). For the ethnic populations under consideration, a slightly higher number of 3 persons per household is used. Assuming conservatively that only 10% of these ethnic households consume goat meat and without considerations for other part of the U.S. population, a total of 1.76 million households may consume goat meat. According to the Agriculture Fact Book (2001-2002), Americans consumed on average annually 195 pounds of red meat and poultry per capita in the year 2000. If every ethnic household (three persons) consumes only 72 pounds of goat meat annually, including holidays, there will be a projected demand for 117.6 million pounds of goat meat. Assuming a 40-pound carcass weight per goat, the total number of goats needed to be slaughtered is 3.18 million per year (Table 6). This is a modest estimate of the numbers of meat goats needed. A little over 1.1 million meat goats were sold in the U.S. in 2002 and 1.15 million reported goats were consumed in 2003 (Domestic slaughter + imports). It should be noted that the demand for slaughtered meat goats is more than 160% of meat goat inventory in the U.S.

Table 6. Estimated demand for goats and goat meat in the U.S.

Total Population (Asian, Hispanics and others)	53 million
Total number of households	17.6 million
Households that consume goat meat	1.76 million
Annual household consumption (lbs.)	72
Total goat meat consumed (lbs/yr.)	127.2 million
Average goat carcass weight (lbs.)	40
Total goats in demand for slaughter	3.18 million
Meat goats sold	1.1 million
Meat goats consumed	1.15 million
Meat Goat Inventory in the U.S.	1.9 million

Other Conditions Favorable to Increasing Goat Production

Women as Principal Farm Operators

The number of women principal farm operators in the U.S. reached 13% in 2002. A goat is a smaller animal and very popular with women producers. Increasing numbers of women farm operators may promote and encourage meat goat production. Proper knowledge in goat husbandry, budgeting and marketing techniques will insure a profitable agribusiness for them.

Health Consciousness and Goat Meat Quality

Americans are conscious about what they eat, now more than ever. Poultry consumption has increased from under 35 lbs. per capita in 1980 to more than 65 to 70 lbs. per capita. Three major factors have contributed to this increase: poultry is a healthier product being leaner than beef and pork; it is low cost, and it is available. In comparison to poultry and other meats, goat meat is leaner with less fat waste, and it is high in iron and low in cholesterol. Research has indicated that goat meat has a balanced proportion of saturated:unsaturated fatty acids (Banskalieva et al., 2000), and it is a rich source of conjugated linoleic acid (anti-carcinogenic and only found in ruminants) (Chin et al., 1992). However, goat meat is more expensive than poultry, beef, lamb and pork at this time and it is not readily available. The high price of goat meat along with the lack of availability prohibits its consumption.

Challenges Encountered

Major challenges associated with increased goat meat production are: Consumer education; producer education; organized markets and marketing channels. Consumer education could include: The dietary advantages of goat meat; why people of all the old cultures (Chinese, Mayan, African, Middle Eastern, and Greek) eat this meat; and widespread distribution of recipes for different goat meat preparations. Producers should be educated on the best management techniques to raise goats for meat. Using some superior breeds with fast growth rates, especially those from South Africa, have revolutionized meat goat production.

However, the most important factor in the growth of any industry is marketing. Keeping in touch with state agricultural and farmer organizations in developing new markets is important. Producers can benefit from *federally*-inspected slaughterhouses that can process goats as well as enable interstate sales. With goat meat prices high, direct marketing may be desirable, either on-farm or using the Internet. Considerations should be given to proper harvesting and handling techniques of goat meat for Jewish (Kosher) and Muslim (Halal) clientele.

Value can be added in terms of desired products such as specialty sausages and other ready-to-eat meat products that can enhance marketing and profit margins. At the retail level, a recent survey conducted in the Southeast by Tuskegee and other university researchers concluded that retailers carrying goat meat confirm that purchasers of goat meat are indeed the ethnic groups cited in this paper, and they should be provided the cuts and type of processing desired (which were ribs for steaks and barbecue and ground goat meat) (personal communication).

Conclusion

There is an increased interest in goat meat consumption in the U.S. Goats slaughtered in USDA-inspected plants as well as goat meat imported from Australia and New Zealand have sharply increased since 1999. The U.S. has changed from a net exporter to a net importer during the last decade. Increases in ethnic populations in the U.S., especially Hispanics, Asians and Muslims, have contributed to this development. Also, goat meat is a healthy meat and fits the designer diets of health-conscious Americans. Goat production is a great opportunity for small farm producers to target these markets and diversify their farm products. There is a great opportunity for value-added products. However, consumer as well as producer education is needed and a marketing structure must be strengthened**.**

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Development of a Task Force to Provide Education and Leadership to an Emerging Meat Goat Industry

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Background

Interest in meat goats has grown rapidly over the past 10 years. Goat is the most frequently consumed meat in the world. In the United States, meat goat production is increasing because of goats' economic value as efficient converters of low-quality forages into quality meat, milk, and hide products for many specialty markets. Preference for goats is growing in populations of health conscious, ethnic, and faith based consumers. National estimates indicate current demand for meat goats is nearly 500,000 head deficient Goats are growing in popularity as a youth project, and many are raising meat goats for breeding or show. These interests are leading to viable commercial value-added enterprises. Where resources are limited, meat goats may be an enterprise that a small farmer can raise efficiently, profitably, and become self-sufficient.

Engaging Resources

While meat goat production has been increasing, this enterprise did not have supporting infrastructure relative to a commodity based organization, university sponsored education and research, or well known marketing channels. To address these needs, a task force has been formed and directed by personnel of The Ohio State University Extension and consists of producers, multi-disciplinary OSU faculty, ethnic and faith based community leaders, other state universities and colleges, Allied Industry, and other interested persons. The mission of the *Ohio Meat Goat Industry Task Force* is to enhance the production and marketing of meat goats through education and practical experience.

The objectives of the *Ohio Meat Goat Industry Task Force* are:

Identify and access emerging ethnic markets having a preference for goat meat in their diet.
Develop producer networks, alliances and/or cooperatives to meet the demands of emerging markets.
Provide leadership for education and research.

Extension members of the task force have been instrumental in developing educational materials and events. County agents published the *Ohio Meat Goat Production and Budgeting Fact Sheet*, which has been adopted by over 400 producers, as a guide for establishing this value added enterprise. Agents have designed and conducted regional workshops, seminars, and on-farm tours to transfer knowledge to over 800 participants. Extension personnel led producers on a study tour of eastern Pennsylvania and New York State markets. Several task force members have participated in a collaborative multi-state initiative for marketing and production of meat goats. The need for current information prompted the development of the *Buckeye Meat Goat Newsletter* that is received by 500 producers. A website is being developed to enhance the exchange of production and marketing information to allow greater

access to emerging ethnic populations having a preference for goat meat. http://south.osu.edu/cle/

Building Leadership Capacity

Leadership development has been a primary objective of the Ohio Meat Goat Task Force. Producer members have been instrumental in the formation of the *Buckeye Meat Goat Association*. This group has developed by-laws and articles of incorporation for the purpose of promoting and marketing commercial meat goat producers in Ohio. Three producer-driven marketing networks have been established. Task force members are assisting in developing leadership among emerging ethnic and faith-based consumers so they can establish the infrastructure and marketing of fresh chevron. Producers have enhanced the effectiveness of their efforts by partnering with agencies such as the Ohio Cooperative Development Center, Ohio Tobacco Foundation, Heifer International, Somalia and East African Organization, Jewish Family Services and Institute for Social And Economic Development.

This task force is taking a unique approach to building infrastructure of the meat goat industry by utilizing a social approach to market development within emerging ethnic and faith based consumers. This foundation infrastructure will create value-added opportunities for refugees in our urban centers and small farms in Ohio. Additionally, economic development in the creation of agricultural jobs will do much for community development in the rural/urban interface.

Developing an Industry

The task force has successfully pursued and received $63,000 in Research and Extension grants. This funding is being used to conduct on going feasibility studies of ethnic markets, Ohio's processing infrastructure, and development of farmer/consumer cooperatives. A statewide survey revealed a ten-fold increase in the adoption of meat goats as a value added income generating enterprise and provided baseline data on production demographics and marketing strategies. On-farm meat goat research encompasses determining benchmark economic data, breed comparisons, and forage utilization. Research and data analysis is accomplished through partnerships with multiple colleges and universities.

Progress continues in the ability to market a fresh and safe product directly to emerging ethnic and faith based consumer populations to capture the most value. Behavioral changes include an increase in farmers producing for emerging markets, an increase in communication abilities between producers and markets, and coordination for consumers, retailers, and producers through functional marketing partnerships that fit the social and ecological paradigm.

There is a real opportunity for farmers to network through co-ops or other ventures to build the meat goat industry. As with any commodity, capturing niche markets can add value. Producers on the *Ohio Meat Goat Task Force* can serve as examples for other developing enterprises. As the saying goes "If you build it; they will come." Meat goats just may be a "Field of Dreams" for animal agriculture.

Diversified Species Grazing for Brush and Pasture Management

An Peischel
Tennessee State University
Nashville, Tennessee

A synergistic process in motion. Change is stressful and a challenge to your "comfort zone". Accepting that there is something new to learn and interpret can make one uncomfortable but get ready - practice using tools to apply new knowledge and involve support from individuals already doing similar endeavors. The integration of knowledge from separate disciplines (ecology, plant physiology, hydrology, climatology, forestry, soils, economics, animal science, sociology and wildlife) equals the Ecosystem and all factors affect the vegetation distribution making up the various plant communities. But ENERGY (ENERGY FLOW), in pastoral agriculture is universal and can be used, stored, concentrated, or spread with the primary source being the sun.

To obtain efficiency of the natural energy flow - CONTROL - to use energy effectively. Control the time of grazing, the area to be grazed, the specie of livestock grazing, the season of grazing, and the plant specie to be grazed. Understand the basic forces acting on an agricultural enterprise so that small amounts of energy input act as an amplification factor thereby increasing the amount of sunlight harvested and marketed.

The biotic component is that of living organisms, plants and animals. The herbivore, through browsing and grazing affects frequency of plants grazed, the degree of vegetation removal, the plant type grazed, different types of livestock grazing and the quality of vegetation grazed. Other factors include pollination and seed scattering by animals. Decomposition takes place through other organisms which consume dead material and render it useful.

The abiotic component (non-living environment and exchange materials) affects vegetative distribution. These factors include the topography, altitude, exposure/insolation, precipitation, evaporation/evapotranspiration and soil. The water cycle is driven by energy from the sun and its distribution affects vegetation more than any other single environmental factor. There is a continuum between the soil, plants and the atmosphere.

Plant growth requirements are sunlight and the ability of the soil to provide moisture, support, protection and nutrients. Vegetation that develops in an area is determined by soil characteristics such as texture, depth, slope, organic matter, pH and chemical composition. These soil characteristics are determined by soil formation affected by climate, vegetation, parent material, topography, time, and soil organisms.

There are many environmental factors that affect vegetation distribution in relation to the management of lands. To be considered are topography, slope, precipitation, wind erosion and soil mineral content. Many important decisions are influenced by the plant community and the factors that influence those communities.

Soil fertility can be enhanced by grazing management as it increases the amount of organic matter in the soil. If a specific nutrient is lacking, it can be fed to the animals as a mineral supplement and they can deposit it for you. Soil nutrients get

into the soil from the weathering of parent material, cropping practices, rain, dust, wind and are recycled by plant roots in the subsoil. Livestock deposit mineral supplements in manure as they eat about 50 pounds of mineral per year with 90% passing through as dung and urine. Livestock redistribute nutrients in a grazing system, therefore use good rotation management.

Manure is great stuff and interesting. Cattle dung (the average cow defecates 53#/da grazing) consists of 29% potassium and 47% nitrogen, with urine (the average cow urinates 23#/day grazing) consisting of 70% potassium and 52% nitrogen. If grazing sheep, dung consists of 83% calcium, 15% potassium and 38% nitrogen with urine adding 16% calcium, 84% potassium and 61% nitrogen. If you have soils with too much calcium, graze hogs as they excrete zero calcium in urine or need higher levels of calcium to change pH, graze horses with 44% excretion of calcium in the urine. The dung, besides being greatly appreciated by dung beetles, helps increase the physical characteristics of the soil (aggregation, friability, tilth, increases water infiltration and retention and decreases root-knot nematodes and other plant root pests). Healthy pastures, healthy soil microorganisms - high quality vegetation.

The quantity and quality of vegetation produced in a given time is dependent upon the amount of sun energy a plant can capture and convert to tissue. Plants need a leaf area to photosynthesize but a canopy cover of more than 30% can decrease vegetation production. As plants are grazed, recovery time is dependent upon soil fertility, season of year, soil moisture content, temperature, degree of defoliation, time of removal, animal specie grazing and residual dry matter.

Residual dry matter is the forage dry matter remaining after a pasture has been grazed. Different plant species vary in recovery time and climate effects recovery time. The correct amount of residual is needed for rapid regrowth yielding higher quality forage so that livestock per acre can be increased as well as animal performance. There is a point of no return, approximately 2000 pounds of residual dry matter per acre. High residual may also slow recovery rate as sunlight is hard to capture, old leaves are less efficient producers than new leaves, the ratio of non-photosynthetic material to green material and the leaf:stem ratio is stressed. In lightly grazed paddocks with a high residual dry matter, a decreased rate of net photosynthesis available for new growth and the old leaves shade the new ones decreasing production. Leaf Area Index (LAI) is a valuable tool for assessing plant health.

The most important concept to remember - BIODIVERSITY must be maintained. Brush, range and pasture management is based on the physiology of the plant and the ability of man to make social, environmental and economically sound decisions.

The livestock used in a grazing regime must be under control - where they need to be, how long they are to be there and the number of animals that need to be there. One does not want to overgraze the plant and deplete root reserves nor overrest the plants and decrease biodiversity. In grazing management, use of animal behavior and herd effect allows concentrated animal energy input into a small area for a short period of time. Animals of the same physiological condition need to be foraged as a mob and the quality of feed on offer needs to satisfy their physiological requirements. Social dominance, herd leadership, flight distance and species dominance need to be considered in mixed specie grazing as does sex of livestock, age and breed dominance.

Herding a mixed mob of livestock and keeping them from being strung out takes patience and planning. Horses walk 5mph, cows 3mph, sheep stroll, goats are getting into trouble - then depending upon breed of livestock, the British breeds do not like

to walk as far as the Continental breeds. And in the middle of the mob are the livestock guardian dogs - Great Pyrenean guards reacting differently than Anatolian. The next factor inflicting itself is the breed of stock dog and the ability of the stockman to utilize that dog(s) ability.

Foraging of a mixed mob is complex. The different species graze at different times during a 24 hour period, each specie selects different plants and plant parts as do the age groups within that specie, they require different amounts of water (size of watering trough), and each specie has a unique mineral requirement.

Diet Preference Differences
% of diet

Plant	Horse	Cattle	Sheep	Goat
Grass	90	70	60	20
Weeds	4	20	30	20
Browse	6	10	10	60

Genetic heritability of foraging is important in browse, range, and pasture operations. The Brahma does well on low quality feed and traveling to water whereas the Holstein needs high quality forage and approximately 30 gallons of water per day. Know the economical production traits of each species and its ability to adapt to environmental stress; the goal is to improve herd performance.

An important concept is the animal unit (AU). Know the number of animal units a specific area can accommodate, estimate the amount of forage available by type and allot different species accordingly.

Basic routine herd health management practices need to be kept updated. The manager needs to be very conscious of individuals when grazing mixed species. Fencing. The greatest is portable, solar powered electric fencing. Creativity in fencing allows: 1) maximum utilization of forage, allowing plants to rest before re-grazing; 2) allocation of forage based upon quality or physical condition of the livestock; 3) ability to manage plant species and 4) maintain a healthy environment for diversity of vegetation and livestock – a symbiotic relationship.

As a grazier progresses through management and budgeting of forage and livestock, the unit must be treated as a "whole". All of the pieces need to be considered together - nothing stands nor functions alone - it is one continuous cycle of life.

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A Place at the Table: Explorations in Heritage Harvest Areas Development

Duncan Hilchey
Cornell University
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Overview

Great Lakes wild rice, Cape Cod cranberry bogs, Indian River fruit district, wild blueberry barrens of Downeast Maine, the Concord Grape Belt on the coast of eastern Lake Erie…these are but a few place-based heritage agricultural regions of the United States. The rich histories, cultures, and traditions surrounding these places hold untapped potential for heritage tourism, as well as other community and economic development activities. Place-based community development is emerging as a new way to thwart globalization and industrialization by building on the unique characteristics and opportunities of a community. While they are generally overlooked by all but food historians, folklorists, and gastronomes, food and agriculture together constitute the ultimate expression of place…for it is in the combination of local landscape and human labor that distinct foods and cuisine are created, reflecting the cultural uniqueness of a place. This view forms the basis of the traditional French concept of "guit de terroir" (a taste of place).

In this era of unprecedented globalization, however, producers of these uniquely American agricultural products are struggling to find ways to adjust, evolve, and become sustainable. But this is difficult to achieve in the current, culturally toxic economic environment of least-cost labor, consolidation and international competition. Traditional commodities have gone through a rash of bad news in recent years: cranberry gluts are forcing industry restructuring; accusations of price fixing and water pollution in the wild blueberry barrens of Maine have tainted the reputation of that industry; and poor weather and low prices are hurting the family-run vineyards in the Lake Erie Concord Grape Belt and their allied processing and marketing businesses. Meanwhile the dissolution of the Washington Apple Federal Market Order, along with cheap apple imports from China, have put enormous pressure on North America's fresh market apple industry in Washington's Yakima Valley. Industrial restructuring, including grower and processor consolidation, seems almost inevitable. However, an alternative path to the future of these traditional commodities may be to capture and market their rich regional heritage as well as the enormous contributions they make to American foodways and working agricultural landscapes. National, state and local "heritage areas" already exist, building educational tourism around sites of significant events and developments in American history, such as wars, industries, canals, women's rights, slavery, and the like.

We believe it is possible for traditional American commodity regions like the Lake Erie Concord Grape Belt to capture and make use of their heritage in much the same way. Yet to be determined is whether these regions have enough "heritage muscle" to draw tourists and consumer interest that will translate into new sources of income and sustainability. This is one among numerous questions being addressed in our research on the potential of "agricultural heritage areas" (AHAs). The first of its kind may be the Lake Erie Concord Grape Belt AHA (where we have been conducting exploratory work).

The Lake Erie Concord Grape Belt Heritage Area

The "Concord Grape Belt" is the largest viticultural area in North America outside of California, encompassing a 30,000-acre swath of grapes that runs the length of eastern Lake Erie. The Concord Grape Belt crosses the border of New York state and Pennsylvania and includes approximately 1,000 vineyards. It is where Dr. Thomas B. Welch expanded the production of America's first commercial fruit beverage, and continues to be the headquarters for numerous grape processors.

However, today the heart of the Grape Belt is also found in the New York State county whose population is shrinking the fastest — Chautauqua County. Furthermore, the region took a big hit when Welch's moved its headquarters to Concord, Mass., in 2001, and with it dozens of high-paying management and administrative jobs. Despite these challenges, numerous organizations and agencies came together in 2003 with assistance from Cornell's Community, Food, and Agriculture Program in the Department of Development Sociology to explore how the Concord Grape Belt's rich agricultural heritage could be the basis for sustainable development. Led by dozens of grape processors, cooperatives, organizations and agencies (including the Lake Erie Regional Grape Program, and Cornell Cooperative Extension of Chautauqua County), the Lake Eire Concord Grape Belt Heritage Association formed in 2004 and has 130 members (most of whom are grape farmers). Local funding sources have been tapped along with funds from the state's Coastal Resources Program and legislative member items. Projects underway include an interpretive automobile trail with information kiosks that covers 90 miles of the Grape Belt, a Concord Grape Heritage Discovery Center, a "Culinary Bounty" program to promote local grape cuisine, and an effort to build a state-of-the-art grape research facility. A study of the economic impact of the grape and wineries industry is also underway, and a special label certifying the origin of Grape Belt products may be licensed in the future. Such labels and related product information may educate consumers about unique regional agricultural products and tap their interest in wholesome products which contribute not only to improved health but also to American cultural identity.

Capturing the region's untapped heritage marketing potential may help this beleaguered industry and shed light on ways other struggling regional commodities such as cranberries and wild blueberries can stay competitive and sustainable.

It is in the combination of local landscape and human labor that distinct foods and cuisine are created, reflecting the cultural uniqueness of a place

Presentation Key Points

- **Why "Placelessness?" – Private Policy**
  - Mobility and lack of rootedness.
  - Value of individual desire over community welfare.
  - Private space valued over public space.

- **Why "Placelessness?" – Public Policy**
  - Belief that unfettered market will solve problems.
  - Lack of intergovernmental cooperation and agency turfism.
  - Lack of long-term regional planning.
  - Lack of resources.

- **Key Concepts and Principles**
  - Belief that unfettered market will solve problems
  - Earth systems
  - Terroir (France)
  - Topophilia
  - Smart growth and "place-based development"
  - Goldschmidt Hypothesis

- **Concord Grape Belt Heritage Association, Inc.**
  - Heritage Committee
  - Museum Committee
  - Tourism/Promotion Committee
  - Culinary Bounty Committee
  - Inter-industry Committee

- **Potential Benefits of Agricultural Heritage Area**
  - Preservation grants
  - Vineyard preservation
  - Greater local appreciation
  - Industry unity
  - Tourism development

- **Concord Grape Belt Heritage Association, Inc.**
  - Photo collections
  - "Foxfire"-style interviews
  - Farm implement collections
  - Juiceries (like wineries)
  - Wineries
  - Diversification opportunities
  - Grape-related recreation and entertainment
  - Concord Grape cuisine
  - Buy-local campaign
  - Co-packing
  - Shared-use kitchens
  - Institutional purchasing
  - Certified heritage products

- **Interpretive Trail**
  - Roadside info kiosks
  - Maps
  - Brochures
  - Signage
  - Trails
  - Tours of vineyards and processing plants
  - Pull-over vistas

REDTT Project Overview

Dora Dominguez and **Deb Franzoy**
Rural Economic Development through Tourism
Las Cruces, New Mexico

~ Education
~ Communication
~ Collaboration

REDTT is an economic development project, designed to boost tourism development in rural New Mexico. Administered through New Mexico State University's Cooperative Extension Service.
REDTT's service area includes 17 counties, which encompasses a total of 47 villages, towns and cities, 10 Native American pueblos and two Native American Tribes.

Education
- Annual Rural Tourism Conference
- Training Workshops
  - Hospitality and Customer Service
  - E-Commerce
  - Volunteer Management

- Tourism Project Development
  - Events and Festivals
  - FAM Tours
  - County Tourism Councils

  Annual Rural Tourism Conference
  The 2005 Annual Conference, hosted in Deming, New Mexico. The event entitled, *"Making Tracks Along the Border,"* attracted more than 180 tourism professionals and volunteers from throughout New Mexico.
    - Networking opportunities with other tourism people
    - FAM Tours of area attractions
    - Workshops on tourism issues
    - Banquet and awards dinner
    - Keynote speakers on current tourism issues

Communication
- Media Coverage
  - Web site - www.redtt.org
  - News Releases
  - Trails & Treasures Magazine
  - Writer Familiarization Tours
  - Event Calendars

Collaboration
- Partners
  - County Tourism Councils Project Cost Share Requirements
  - New Mexico State University's Cooperative Extension Service (NMSU CES)
  - New Mexico Tourism Department (NMTD)
  - Bureau of Land Management (BLM)
  - Tourism Association of New Mexico (TANM)

Why We Promote Tourism as Economic Development

In the United States, the tourism industry is a half-trillion dollars-a-year industry and is the nation's second largest employer with over 15.5 million people
In the thirteen years since its inception, the REDTT project has increased the number of New Mexico counties it serves from its three original partner counties to currently serving 17 counties.
This year, REDTT awarded $51,000 to support tourism projects in all 17 New Mexico counties.
Since the project began in 1992, REDTT has awarded $375,274 in grant funds to its member counties.
REDTT continues its mission to provide technical assistance through a team approach to rural tourism professionals and volunteers.

Agtourism or Agritourism
Historical and Cultural Tourism

Project Goal: To educate, train, spread information and assist in tourism development of New Mexico's rural communities.

"Travel and tourism makes it possible for Americans to get outdoors and learn about wildlife and conservation," U.S. Secretary of the Interior Gale Norton told the media, "and the economic benefits are a tremendous boom to local communities."

Working Trees for Livestock: Silvopasture: Agroforestry Systems that Combine Timber and Livestock Production

Richard Straight
USDA National Agroforestry Center
Lincoln, Nebraska

Agroforestry is a land management system that incorporates trees and shrubs into farm and grazing lands. This combination of crops or forage with taller trees is done in such a way as to take advantage of the biological interactions to create economic benefits for the land owner and environmental benefits for society. These agroforestry trees have a job to do, they are *Working Trees for Agriculture*.

One of the five agroforestry systems used in the United States is called silvopasture. Silvopasture systems incorporate timber production and livestock grazing on the same piece of land and have the potential to provide an alternative approach to saw-timber production of loblolly, longleaf, and slash pines. These systems are inherently environment friendly and forest industry would benefit from the increased production of high-quality sawlogs.

For many decades in the Southeast, the tendency had been to plant and grow southern pines in "fully stocked" plantations. This production method has worked in large part because there has been a strong domestic market for pulpwood which allowed pine plantations to be thinned and creating profit for the landowner. Thinning kept the stands growing vigorously, improved their resistance to pine beetle attacks, and reduced the hazard of wildfires. At the end of the rotation a final harvest of quality sawlogs was produced.

In recent years the pulpwood market in the southeastern United States has weakened. This is attributable to a supply shift that has made it more cost effective for forest industry to procure pulpwood offshore, especially from South America. Consequently, forest plantation owners are finding it difficult to generate a profit or even pay for the cost of a mid-rotation thinning. This is creating a backlog of unmanaged pine plantations with stagnate growth, a high risk for wildfire and insect damage, and low potential to eventually produce quality sawtimber.

Silvopasture systems are an alternative pine plantation approach for providing a long-term supply of sawtimber with fewer mid-rotation plantation thinning operations. In past decades the plantation owner's income was supplemented through these mid-rotation thinnings. In a silvopasture system the plantation owner's income is increased through annual forage or grazing income. The establishment of profitable forage under the pine tree canopy is possible because there are many fewer trees planted in a silvopasture plantation, as few as 150 trees per acre, rather than the more typical 600-900 trees per acre. Fewer trees means more light reaches the grass and legumes on the ground.

This dual-product land management system can increase on-farm income by as much as 70% over a forage only or timber only management system. This is possible because of the interactions between the trees and forage, the more complete utilization of sun light and soil nutrients, and more intensive management by the producer. An effective silvopasture system includes a well-managed rotational grazing system and regular pruning of the trees to create high value timber.

Silvopasture trials and demonstrations have been explored in the southeast for more than 20 years. Although there has been only a minimal investment in research, these demonstrations still illustrate the potential of silvopasture systems for pine sawlog production. It also has many additional benefits such as providing habitat for quail and wild turkey, being less susceptible to southern pine beetle attack, providing ready access for pine straw raking, and reducing the risk of wildfires. It is also possible to thin an existing pine stand to allow sufficient light to reach the understory so that a forage system can be established and managed.

Silvopasture systems and the necessary management components such as fencing, livestock water systems, tree planting, and forage improvement are eligible practices within the Environmental Quality Incentives Program (EQIP). Silvopasture could also qualify under southern pine beetle and wildfire prevention programs.

"In the 80's, I found myself with high-priced real estate. I had to find a way to create some cash flow on my ranch. The answer was grazing cattle under planted pines--in fancier terms, silvopasture. Everybody said raising cattle and pines together wouldn't work because the cattle would destroy the trees, but I've been able to double the return from my land with this combination." George Owens, Chipley, FL

Forest Certification for Landowners

Alyx Perry
Wildlaw Southern Forests Network
Asheville, North Carolina
Harry Groot
Next Generation Woods, Inc.
Hiwasee, Virginia
Kathryn Fernholz
Dovetail Partners
White Bear Lake, Minnesota

Forest certification is a system for evaluating and recognizing well-managed forests and the products harvested from them. Forest management and forest certification offer several potential opportunities and benefits for landowners, including improved forest health, better wildlife habitat, and marketing niches.

Forest certification started in the early 1990's as a market incentive and mechanism to differentiate responsibly managed forest products. Today, about 6% of the world's forests are certified using a variety of different certification systems. In the United States, there are three major approaches to providing certification for family forests. The three primary certification systems for landowners are the American Tree Farm System (ATFS), Forest Stewardship Council (FSC), and master logger programs.

The American Tree Farm System (ATFS) was first established in 1941 and revised its certification program and auditing standards in 2002. The ATFS offers group certification to allow landowners to pool resources and have their lands certified under a single, shared certificate. There are eight (8) ATFS group certificates in the United States with a total of almost 3 million acres certified. More information about the ATFS certification program is available at: www.treefarmsystem.org.

The Forest Stewardship Council (FSC) was started in 1993 and has established regional standards for certification assessments in the United States. The FSC also offers group certification for landowners. There are about 40 FSC group certificates in the United States. More information about FSC is available at; www.fscus.org.

Master Logger Certification programs differ from the previous two programs in that Master Logger Certification certifies the operator not the forestland. The Professional Logging Contractors of Maine started Master Logger Certification in 2000. Several other states, including Wisconsin, Michigan, Minnesota, and Vermont have also initiated logger certification programs. More information on the Maine program is available at: www.masterloggercertification.com.

Forest certification is a relatively new tool for evaluating forest management and recognizing products from well-managed forests in the marketplace. Landowners interested in learning more about the opportunities offered by forest certification and responsible forest management can contact the individual certification programs to learn more.

Specialty Niche Crop Profiles

Richard Molinar
UC Cooperative Extension
Fresno, California

$ 200,000 from half an acre??
$ 100,000 from 2 acres??

Are these kinds of returns (gross) possible? The answer is yes-no-maybe. It depends on which way the wind is blowing. Your abilities as a farmer, pest control advisor, fertilizer expert, irrigation specialist, soil scientist, and marketer all play a key role.

The farmer proclaiming $200,000 income sold baby lettuces in fancy salad mixes to fancy restaurants in the San Francisco Bay area and East Coast. Growing the plants is fairly easy [comparatively speaking] but it is growing the right crop, at the right time, and marketing it aggressively that determines whether a large, small (or no) profit is made.

Generally speaking, "Niche" crops have a greater potential for making higher returns per acre than the mainstream vegetables. Niche and specialty crop can be used interchangeably. It is something that not too many others grow.

At the same time the specialty crops are more labor intensive and have higher costs of production. All successful enterprises are predicated on three very important points: 1/ **researching** the production of the crop; 2/ **researching** the market potential and places; 3/ **diversification** and not putting all your eggs in one basket.

Niche marketing means doing something no one else is doing. It involves growing unusual specialty vegetable or 'oddballs'.

Where to Market:
There are many marketing options and oftentimes a farmer is selling at three or more places on the list below. Some of the markets on the list are easier to get into, and others more difficult, as indicated in the "difficulty" rating (Table 1)

Several general principles apply to Niche Specialty crops
- if everyone is growing it, it is no longer a specialty Niche crop
- any Niche crops eventually become mainstream (baby lettuce, eggplant)

EXAMPLES OF SPECIALTY 'NICHE' CROPS

They are usually oddballs, odd shapes, odd sizes, different colors, grown out of season,, organic, foreign (ethnic) miniature, heirlooms, medicinal, gourmet, value-added (dried, frozen, pickled, precut, chocolate covered, candied).

I will be referring to the *Federal Market News Reports* (www.arms.usda.gov/marketnews.htm) and the cost and return studies from the UC Davis campus (www.agecon.ucdavis.edu).

		Difficulty getting into	Potential for returns
1	Roadside stands	☹	☺☺
2	Pick-your-own	☹☹	☺☺
3	Processor contracts	☹☹☹	☺
4	Terminal wholesale markets	☹☹	☺
5	Local vegetable packing houses	☹☹☹	☺
6	Specialty wholesale houses	☹☹☹☹	☺☺ to ☺☺☺☺
7	Specialty retail stores	☹☹ to ☹☹☹☹☹	☺☺ to ☺☺☺
8	Certified farmers markets	☹☹ to ☹☹☹☹☹	☺ to ☺☺☺☺☺
9	Flea markets / swap meets	☹	☺☺
10	Restaurants	☹☹☹☹☹	☺☺☺ to ☺☺☺☺
11	CSAs (commun. supp. ag.)	☹☹	☺☺
12	Internet	☹	☺ to ?
13	Cooperatives	n/a	☺☺
14	Agri-tourism	☹ to ☹☹☹	☺☺
15	Institutional (school lunch, etc.)	☹☹☹☹☹	☺☺ to ☺☺☺☺

Table 1: Difficulty Rating

JUJUBE or Chinese Date: *Zizyphus jujube Lam*. The plant belongs to the Buckthorn family and is believed to have originated in China. The trees are long-lived and extremely hardy. No diseases or insects have been a problem in California. The main varieties are the Li, Lang, and Sherwood and are generally spaced 15' by 15' (194 trees per acre). Cost to purchase trees is around $18.00.

A Typical yield per tree is 60 lbs. of marketable fruit and prices paid to the farmer start out at $1.25 and drop to 60cents later in the seasons ($ 7,000 to 14, 500 gross income to the farmer). Uses include: fresh, dried (date), candied, substitute for dates/raisins, smoked, pies, turkey stuffing, medicinal tea, bread, pickled.

60 lbs. x 194 trees x 75¢ per pound =$8,730

ASIAN CUCURBITS - bittermelon, sinqua, moqua, luffa, snake gourd, opo:

Sinqua (Luffa): *Luffa acutangula*, is a member of the cucurbit family. Plantings are usually trellised and started from transplants early in the spring. 8-10" fruits can be harvested fresh and used much like zucchini squash, with a typical yield being 1,000 30-lb. cartons per acre. Most of the costs are in the trellising and harvesting as seen in Table 2.

UC COOPERATIVE EXTENSION, SAN JOAQUIN VALLEY, 2005

2005	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
TOTAL CULTURAL COSTS	211	1,044	1,706	76	145	83	90	105	83	791	11	11	4,355
Harvest													
Hand Pick						927	1,862	1,862	1,862	927			7,440
Haul						55	110	110	110	55			439
TOTAL HARVEST COSTS	0	0	0	0	0	981	1,972	1,972	1,972	981	0	0	7,879
interest on operating capital @ 7.65%	1	8	19	19	20	27	40	53	67	-11	0	0	243
TOTAL OPERATING COSTS / ACRE	212	1.052	1.725	95	165	1,091	2,102	2,130	2,122	1,761	11	11	12,478
TOTAL CASH OVERHEAD COSTS	20	2	45	2	2	2	2	2	2	2	1	301	381
TOTAL CASH COSTS / ACRE	232	1,054	1,770	97	167	1,093	2,104	2,132	2,123	1,763	12	312	**12,860**

Table 2: Cost per Acre to Produce Bittermelon

The wholesale price in Los Angeles paid to farmers July and August 2005 averaged $15-18.00 per 30-lb. carton as seen in Table 3, the net returns per acre will vary according to the yield and price received.

Mature fruits can also be harvested for the 'luffa sponge' sold in stores for kitchen cleaning and for skin care. One acre will yield about 20,000 sponges if left on the plant until fall. Prices on the internet for an 8-10" sponge is $10.00.

$200,000 per acre!!

PRICE	YIELD (30 lb boxes / acre)						
$/box	400	600	800	1,000	1,200	1,400	1,600
6.00	-5,856	-6,285	-6,713	-7,136	-7,562	-7,985	-8,407
9.00	-4,656	-4,485	-4,313	-4,136	-3,962	-3,785	-3,607
12.00	-3,456	-2,685	-1,913	-1,136	-362	415	1,193
15.00	-2,256	-885	**487**	1,864	3,238	4,615	5,993
18.00	-1,056	915	2,887	4,864	6,838	8,815	10,793
21.00	144	2,715	5,287	7,864	10,438	13,015	15,593
24.00	1,344	4,515	7,687	10,864	14,038	17,215	20,393

Table 3: Net Returns per Acre above Total Costs - Cucurbit

DAIKON. *Raphanus sativus* is a brother to the common radish. Roots are much larger than the radish and tend to have a milder taste. Daikon can be planted and harvested almost year-round, however the best quality comes from the fall-spring harvests. Several pests that attack Daikon include aphids (which spread a plant virus) and wireworms which cause cosmetic damage on the roots. Total growing costs are about $3,00per acre, 75% of which are harvest costs.

From table 4 we can see that a profit can be made when prices are over $6.00 per 40-lb. carton and yields exceed 450 boxes per acre. The L.A. wholesale prices paid at the terminal market March through July were around $9-12.

PRICE	YIELD (40 lb boxes / acre)						
$/box	450	500	550	600	650	700	750
4.00	-588	-549	-518	-473	-433	-395	-357
6.00	**312**	451	582	727	867	1,005	1,143
8.00	1,212	1,451	1,682	1,927	2,167	2,405	2,643
10.00	2,112	2,451	2,782	3,127	3,467	3,805	4,143
12.00	3,012	3,451	3,882	4,327	4,767	5,205	5,643
14.00	3,912	4,451	4,982	5,527	6,067	6,605	7,143
16.00	4,812	5,451	6,082	6,727	7,367	8,005	8,643
18.00	5,712	6,451	7,182	7,927	8,667	9,405	10,143
20.00	6,612	7,451	8,282	9,127	9,967	10,805	11,643

Table 4: Net Returns per Acre above Total Costs—Daikon

LEMONGRASS. *Cymbopogon citrates* is propagated vegetatively from crown divisions. It is used extensively in Asian stir-fried dishes, as a hot-cold tea, flavorings in baked goods, and a fragrance in perfumes, cosmetics, and soaps. It can be grown as an annual or a short-lived perennial but requires at least 8 months from planting to harvest. The only minor pest observed in California has been a fungal rust on the leaves. An average to good yield is 1,400 boxes per acre (40-lb). Total cost per acre (including harvest) is about $9,000 per acre.

Almost ½ of the total cost is for the tedious hand harvesting, and the other part of the total cost is for the installation of the plastic tunnels to protect the plants from freezing weather in the winter. To make a profit the farmer needs at least $8.00 per box and a yield of 1,000 boxes per acre.

PRICE	**YIELD (40 lb boxes / acre)**						
$ / box	1,010	1,110	1,210	1,310	1,410	1,510	1,610
6.00	-4,015	-3,909	-3,801	-3,695	-3,588	-3,480	-3,373
7.00	-1,995	-1,689	-1,381	-1,075	-768	-460	-153
8.00	**25**	531	1,039	1,545	2,052	2,560	3,067
9.00	2,045	2,751	3,459	4,165	4,872	5,580	6,287
10.00	4,065	4,971	5,879	6,785	7,692	8,600	9,507
11.00	6,085	7,191	8,299	9,405	10,512	11,620	12,727
12.00	8,105	9,411	10,719	12,025	13,332	14,640	15,947

Table 5: Net Returns per Acre above Total Costs— Lemongrass

SPECIALTY EGGPLANTS. Many different types exist here including Japanese, Thai, Filipino, Chinese, and Hmong etc. Most have a sweeter, more intense flavor than the traditional American round eggplant. Chinese eggplants are usually transplanted in April when the weather and soil temperatures have warmed up. Pest problems include verticillium wilt, flea beetles, aphids, spider mites, various caterpillars, and Lygus bugs (which cause flower drop). The crop is harvested for four months starting in July, with most growers averaging 2,000 30-lb. cartons per acre. The break even point is about $7.00 per box and 1,800 boxes per acre. Care should be taken not to bruise the delicate skins of the fruit.

PRICE	YIELD (30 lb boxes / acre)						
$/box	1,500	1,700	1,900	2,100	2,300	2,500	2,700
6.00	-2,009	-1,606	-1,201	-796	-393	12	417
7.00	-509	**94**	699	1,304	1,907	2,512	3,117
8.00	991	1,794	2,599	3,404	4,207	5,012	5,817
9.00	2,491	3,494	4,499	5,504	6,507	7,512	8,517
10.00	3,991	5,194	6,399	7,604	8,807	10,012	11,217
11.00	5,491	6,894	8,299	9,704	11,107	12,512	13,917
12.00	6,991	8,594	10,199	11,804	13,407	15,012	16,617

Table 6: Net Returns per Acre above Total Costs— Eggplants

BLUEBERRIES are a mainstream crop in Michigan, Washington, Oregon, but in the California Central Valley they are still a Niche crop. They start producing in a market window before the other states start coming into production. Taste is evaluated closely as well as yield.

Six years (and continuing) of testing has resulted in varieties that are adapted to the climate in the Central Valley and determining the production techniques for the region (soil acidification etc). Over 40 varieties are currently under evaluation from a number of nurseries.

The start-up costs for the first two years to establish a planting are around $16,000, but depending on the variety, yields may be in the 20,000 lb. range per acre. As seen in the net returns' table 7, at $1.11 per pound a farmer would need a minimum of 17,600 pounds to make a profit, and even less in succeeding years.

2003 Blueberry Taste Tests
Sharpblue
Bluecrisp
Jewel
Magnolia

NET RETURNS PER ACRE ABOVE TOTAL COSTS OF PRODUCTION

Price	Yield (lb/acre)						
$/lb	13,200	15,400	17,600	19,800	22,000	24,200	26,400
0.86	(4,058)	(3,863)	(3,667)	(3,471)	(3,276)	(3,080)	(2,884)
0.98	(2,474)	(2,015)	(1,555)	(1,095)	(636)	(176)	284
1.11	(758)	(13)	733	1,479	2,224	2,970	3,716
1.23	826	1,835	2,845	3,855	4,864	5,874	6,884
1.35	2,410	3,683	4,957	6,231	7,504	8,778	10,052
1.48	4,126	5,685	7,245	8,805	10,364	11,924	13,484
1.60	5,710	7,533	9,357	11,181	13,004	14,828	16,652

Note: Numbers in parenthesis mean a net loss for the given price and yield combination.

Table 7: Net Returns - Blueberries

Blackberry and Raspberry Production Opportunities for the Southeastern United States

Gina E. Fernandez and **James R. Ballington**
North Carolina State University
Raleigh North Carolina

Status of Crop in the United States
Large-scale commercial bramble (blackberry and raspberry) production in the U.S. is located almost exclusively along the Pacific Coast. In a recent Census of Agriculture, California, Oregon, and Washington reported 76 percent of harvested U.S. raspberry acreage. Most acreage in Washington is destined for processing and the California industry aims towards the fresh market. However, off-season imports from other countries are increasing, enabling consumers to get fresh brambles nearly year round.

Bramble production is limited in the southeastern United States (SEUS), but interest in these high-income specialty crops is growing, as more and more consumers demand a local supply of these fresh fruits. Blackberries are no longer considered a local crop of limited appeal outside of the South. Consumers are demanding and grocery stores are paying and getting high prices for fresh berries. Brambles offer growers an excellent potential for profit, having both high value and great market potential. Net income can exceed $3,800 per acre from established blackberry plantings which can last up to ten years. Adoption of these high-value crops may help the survival of small acreage and family farms as production of traditional crops (e.g. tobacco) becomes untenable.

Prospects and Opportunities for the Southeastern United States
Blackberries are being sold in North Carolina markets as "gourmet berries" for $3 or more per 1/2 pint. In the SEUS, blackberries have been traditionally sold at pick-your-own farms or at roadside stands. A few of the larger growers sell their fruit to chain stores in the region (e.g. Harris Teeter, Food Lion, Whole Foods). Test marketing of blackberries, by the NCSU/NCDA & CS Specialty Crops Program indicated that a market exists at grocery chains, gourmet restaurants and farmers markets. For example, Wellspring grocery (Whole Foods Chain) sold blackberries from this NCSU/NCDA SCP marketing project at the Raleigh store for $3.99 to $4.99/quart, and they stated in their produce survey "sales were great". In addition to the above outlets, berries can be sold to processors, for jams, jellies, wine and other value added products.

Worldwide blackberry production is expanding with shipping to major markets, and the season-long availability has greatly increased the sale and awareness of this crop. The SEUS produces blackberries at a time when domestic supplies are low, and prices generally remain high throughout the production season. New varieties that produce fruits their first year offer the potential to produce fruits during periods of time beyond our typical May-July peak.

New raspberry cultivars from the Maryland and New York breeding programs do well in high elevation regions of the SEUS and there is a good chance for the release of heat tolerant raspberries for piedmont areas in the next decade. Off-season production of raspberries and blackberries using new primocane fruiting varieties, tunnels, greenhouses or other forms of protected culture could extend the production season nearly year round. The SEUS could be a major supplier to that worldwide market if production practices, post-harvest handling techniques and marketing strategies are developed and deployed.

Growing Blueberries for Local Markets

Bill Cline
North Carolina State University
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Overview

Blueberries are native North American plants of the genus *Vaccinium*. Those adapted to commercial production include the highbush blueberry (*V. corymbosum*) native to the northeastern states; rabbiteye blueberry (*V. ashei*) native to the southeastern US; and lowbush blueberry (*V. angustifolum, V. myrtilloides*) in the managed wild stands of Maine and eastern Canada. Also, recent hybrids between domesticated and wild species have resulted in "southern highbush" cultivars uniquely adapted to warmer climates. Commercial production is mostly site-limited to well drained, acid soils with an organic matter content above 2%. However, blueberries can be grown almost anywhere if the right cultivars and proper soil modifications are used. Limiting factors include pH, organic matter content, water availability, plant chill requirement and cold hardiness.

Interest in blueberries has increased dramatically in the last 5 years due to exciting new information about the health benefits of blueberry consumption. Blueberries produce high-value fruit in a relatively small space, and are thus well suited for small, locally marketed or pick-your-own plantings. In areas isolated from commercial fields, blueberries are also a good candidate for organic production. This presentation covers the basics of small-scale blueberry production and marketing. The text below is adapted from *Blueberries for local sales and small pick-your-own operators*, and it is available on-line at: http://www.ces.ncsu.edu/depts/hort/hil/hil-202.html

Pre-plant considerations

Soil pH - Blueberries require a lower pH than other small fruit crops. To reduce pH, apply wettable sulfur (90% S) if pH is above 5.3 for rabbiteye blueberries or 5.0 for highbush blueberries. Use 1.0 pound (2.5 cups) per 100 square feet on sandy soils to lower pH by 1 unit (for instance, from 6.0 to 5.0). Apply 2.0 pounds per 100 square feet for the same amount of pH lowering on heavier soils containing silt, clay or more than 2% organic matter. Try to achieve a pH of around 4.8; too much reduction can be detrimental to bush growth. Apply sulfur at least 3-4 months before planting, and take another soil test before planting. If pH is still above the acceptable range, additional sulfur can be applied.

Organic Additions - If the soil contains less than 2% organic matter, the incorporation of peat moss or well-decayed pine sawdust or bark will improve plant survival and growth. Establish the rows on ridges to provide the required drainage. Apply 4 to 6 inches of the organic material over the row in a band 24 inches wide and incorporate thoroughly using a roto-tiller to a depth of 6 to 8 inches. Preparing the beds in the fall will allow planting earlier in the season (late Feb. to late March depending on the location). If the organic material is incorporated in the fall, any sulfur required to lower the pH can be added at the same time. Avoid opening a furrow, adding the organic material and planting directly in the pure organic material. Water and nutrient management is likely to be difficult in the pure organic material and plants are more likely to become weak and die. Organic material such as pine bark, wood chips, sawdust or pine straw can be used in a deep (3 to 4 inch) mulch layer on the surface after

planting. This surface mulch results in more uniform soil moisture, reduces soil temperature and generally promotes better bush growth and survival. Pine bark, chips or sawdust have a pH of 3.5 to 4.5 and are more desirable than the same mulches from hardwood with an associated pH above 5.0. However, hardwood mulches on the surface have been satisfactory. Avoid sticky hardwood sawdust that will seal the bed and prevent water infiltration.

Drainage - Provisions for drainage must precede planting. Soil maps or observing the soil profile may be helpful in predicting internal drainage. However, digging a dry well is the most effective way to assess internal soil drainage. Dig a hole(s) 6 to 8 inches deep and observe water level following heavy rains. Water should not remain in the hole for more than 24 hours, otherwise select another site or plant on ridges high enough for the water level to reach 6 to 8 inches deep within 24 hrs.

Irrigation - In most seasons and on most soils, irrigation is absolutely essential the year of planting. A system using micro-sprinklers is recommended and is more efficient than point-source drippers. Even 2 drippers per plant often do not wet enough of the soil surface. At least 50% of the area under the drip line should be wetted. The irrigation must be designed for the higher output of microsprinklers (about 10 gal per hr) compared with 1 or 2 gal per hr for drippers. Align the micro-sprinklers to avoid saturated soil around the crown of the bushes. The use of automatic timers on drip or microsprinkler irrigation systems can result in shallow root systems and root rotting if systems apply water daily. Apply irrigation no more than once every two days to reduce the chances of root rot infection. If the grower has no choice but to establish the planting on a site prone to problems with frost during the early spring (during bloom) then overhead sprinkler irrigation should be installed to provide frost protection and supplemental moisture.

Cultivar selection - Cultivars (cultivated varieties) recommended in one state or region may be totally inappropriate for another area. In North Carolina, for instance, both highbush and rabbiteye cultivars can be grown in the Coastal Plain and Piedmont. However, only highbush will consistently survive and produce fruit following the minimum winter temperatures below 10° F that regularly occur in the Mountains. The rabbiteye species is more drought and heat resistant and will tolerate a wider range of soil types than highbush; for these reasons, rabbiteye cultivars are easier to establish and grow successfully in the Piedmont and on the drier soils of the Coastal Plain. More recently a group of cultivars referred to as southern highbush have been released. These cultivars are intermediate between highbush and rabbiteye in soil and climate adaptation. Some specialized southern highbush cultivars require very little winter chilling and can be grown as far south as subtropical Florida.

Pollination – In order to form a berry, each blueberry flower must be visited by a pollinating insect. Commercial growers in NC use honeybees for pollination (1 hive/acre). Most small plantings are adequately pollinated by wild insects even without the use of managed honeybee hives. Blueberries are not fully self-fertile, so growers are advised to plant more than one cultivar to encourage cross-pollination and improve fruit set and sizing.

Sources of Plants - Blueberries are propagated vegetatively through the use of cuttings. Both hardwood (winter) and softwood (summer) cuttings can be rooted under mist without the use of rooting hormones. While this can be accomplished by the backyard hobbyist or by a local nursery, the best sources of uniform plants for establishing a new planting are nurseries that specialize in blueberry propagation. Some commercial sources will sell single plants, while others require minimum orders of 50 to 100 plants

Planting
Nursery plants that are 2- or 3-years old and 12-36 inches tall will transplant well. The roots must be kept moist at all times between digging and replanting. Plant bare-rooted bushes in late winter (Feb-Mar) as soon as the soil can be worked; fall (Nov-Dec) planting has also been successful on sandy soil in the southeastern NC Coastal Plain with bare-root plants, and in other areas with potted plants. Highbush cultivars are spaced 4-5 ft in the row and 8-10 ft between rows; rabbiteye cultivars need 5-6 ft spacing in the row and 10-12 ft between rows. If organic mulch will be applied on the surface, plant to the same depth as the plants were growing in the nursery. Without mulch, plant 1-2 inches deeper to allow for soil settling. Firm the soil around the plant with your feet and water thoroughly. Prune approximately 2/3 of the top growth on bare-root plants and 1/2 on potted plants, leaving only 1-3 of the most vigorous upright shoots. Remove any remaining flower buds (plump, rounded buds) on newly planted bushes.

Fertilization
Use caution -- blueberries are easily damaged by excess fertilizer. Apply the recommended amount and allow 4 inches of rain or an equivalent amount of irrigation between applications. In the first year, do not fertilize immediately after planting, but wait until the first leaves have reached full size, then apply 1 tbs. of a special azalea fertilizer, 12-12-12 or 10-10-10 within a circle 1 ft from the plants. Repeat applications at approximately 6 week intervals depending upon rainfall or irrigation, until mid-August (in coastal NC). In the second year, double the first year's rates, but increase the circle around plants to 1 1/2 ft. Make the first application when new growth begins in spring. On bearing plants, wait until growth begins in the spring, then apply 1 cup of complete fertilizer such as 10-10-10 within a circle 3 ft from the plant. If more vigorous growth is desired, side-dress with 1/4 cup of ammonium nitrate at 6 week intervals. For mature bushes, 6-12 inches of new growth is adequate -- additional growth must be pruned away. This may result in a loss in production, but it is necessary to keep the plants from becoming excessively large. Determine side-dressing requirement based on the amount of shoot growth and bush color. If the soil pH is slightly high in an established planting based on a soil test, then side-dress with ammonium sulfate rather than ammonium nitrate. If the pH is 0.5 units or more above the acceptable range, apply wettable sulfur in a narrow band under the drip line of the bush at the rate of 0.1 pound per bush to lower pH 1 unit.

Pest Control
Weeds -- If mulch is applied following planting and replaced at the rate of 1 inch per year, few weed problems should develop. Hand pull or hoe the occasional weed growth. If row middles are in sod, mow often to reduce invasion by runnering grasses and to avoid production of weed seeds that could blow into the mulched area. If the bushes are not mulched, avoid deep cultivation since blueberry roots are very near the surface. Hoe no more than about 1 inch deep. In addition, hoe often (once every 2 weeks) when weeds are germinating, to reduce competition and to avoid development of large, mature weeds. Pre- and post-emergent chemical herbicides are registered for controlling weeds in blueberry plantings.

Insects – Insect pests encountered in small, isolated blueberry plantings are usually generalists that feed on a wide range of plant hosts. In North Carolina, japanese beetles, cranberry fruitworm, cherry fruitworm and plum curculio commonly occur on blueberry. Less common in NC is the blueberry maggotfly. The prevalence and importance of insect pests varies by location, and control relies on proper identification of the pest.
Diseases – Growers who start with disease-free plants and grow them in a location isolated from other blueberries can avoid many diseases. Plant-borne viruses and host-specific fungal pathogens

like mummy berry can be avoided in this manner. As blueberry bushes mature and age, pruning can be used to remove dead or infected twigs and stems that harbor fungal blight pathogens. Fruit rots can be greatly reduced by timely and complete harvest, followed by post-harvest cooling of harvested fruit. Fungicide sprays can often be omitted entirely.

Bird Protection - Birds love to harvest blueberries. They can consume the complete crop from a small planting. One inch by one inch mesh bird netting draped over the bushes or supported on a framework is the only practical control.

Pruning

Highbush - If the plants are cut back severely as recommended following planting, little pruning will be required the second year except removing all flower buds and any weak, damaged or diseased growth. Use a similar pruning strategy the third year with the exception that several flower buds can be left on vigorous shoots. In the fourth year, the bush should be 4-5 ft tall and capable of handling a crop, but carefully thin flower buds to prevent over-fruiting and severe permanent bending of young canes under the fruit weight. When bushes are mature, remove old canes that are weak, diseased or damaged; cut back tall, vigorous shoots to force branching at a lower level and to control bush height; and thin fruiting shoots to reduce the number of flower buds by about 50%. Prune during the dormant season; late winter is most desirable.

Rabbiteye - During the first 3 years, pruning is very similar to highbush; however, excessively tall and limber shoots will need cutting back to stimulate branching and strengthen the shoot. With mature bushes that are excessively vigorous in spite of low rates of fertilization, cutting back the excessively vigorous shoots in late July will help control bush height and increase yield. Winter pruning of mature bushes is also similar to the recommendation for highbush, except detailed thinning of fruiting shoots on each cane is less critical, and more suckers (shoots developing a distance from the crown) will require removal.

Harvest

With good care, mature highbush and rabbiteye plants should produce more than 10 lbs each year. Rabbiteye cultivars can on occasion produce up to 25 lbs per plant. Highbush blueberries will be of best quality when picked every 5-7 days depending upon temperature. Rabbiteye flavor improves if berries are picked less often; about every 10 days allows for maximum flavor with few soft overripe fruit. At each harvest, every effort should be made to pick all ripe fruit. Picking containers should be no larger than one-gallon buckets to avoid overfilling and crushing of berries in the bottom of the bucket. Avoid harvesting or handling fruit that is wet with rain or dew, as this will significantly increase decay. Once harvested, "ready-picked" fruit for immediate sale should be placed out of the sun and kept cool and dry. Forced-air cooling in a low humidity environment such as an air conditioned building can significantly improve the shelf life of harvested fruit. Further extension of shelf life requires refrigeration.

Potential for Organic Production

Blueberries can often be grown successfully without insecticides and fungicides outside of the commercial production areas of southeastern North Carolina. Japanese beetles can occasionally cause damage to the fruit during ripening, but the foliage is quite resistant. Susceptible plants such as roses or grapes will usually be defoliated before injury is seen on blueberries. The low rates of fertilizer required make organic sources a viable alternative. Horse manure has proven to be a suitable source of nitrogen and rock phosphate provides adequate phosphorous. Weeds can be controlled with shallow cultivation or more desirably with mulch.

For Further Information

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Southern Region Small Fruit Consortium -- www.smallfruits.org

Northwest Center For Small Fruits Research – www.nwsmallfruits.org

NCSU Horticulture Information Leaflets -- http://www.ces.ncsu.edu/depts/hort/hil/

201 Suggestions for Establishing a Blueberry Planting in Western North Carolina

201-B Principles of Pruning the Highbush Blueberry

201-E Blueberry Freeze Damage and Protection Measures

202 Blueberry Production For Local Sales And Small Pick-Your-Own Operators

8207 Growing Blueberries for the Home Garden

Information Resources for Alternative Enterprises

Robert Hochmuth
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Live Oak, Florida

Florida has perhaps the most diverse agriculture and natural resources in the country representing nearly $70 billion in output impacts in the state. Over 30,000 farms exist in Florida with small farms accounting for over 90% of all farms in the sunshine State. Small farmers own and manage the majority of non-urban, privately owned land in the state. Due to the vast diversity of climate, soils, water resources, coastal areas, and natural resources; small farmers in Florida have a very wide range of alternative enterprises available to them. Providing educational information on these enterprises to small farmers is quite challenging to the Florida Cooperative Extension system. Educational needs of small farmers in Florida were identified as one of the statewide priority thrusts for Extension programs. As a result, the Small Farms/Alternative Enterprises focus area was created under the Extension Statewide Program Goal #1, "To Enhance and Maintain Agricultural and Food Systems".

Long range planning input from counties throughout Florida identified the need for new small farm educational programs to be developed. Input provided by small farmers and allied organizations and groups in 2000 identified critical issues facing Florida's small farmers. The issues included:

- Access to profitable markets.
- Entrepreneurial and business skills development.
- Networking with other small farmers.
- Readily accessible technical information on small farms and alternative crops and enterprises.
- Access to labor.
- Improving consumer relations and perceptions of farming.
- Concerns related to urban development, loss of farmland, and reduced opportunities for farmers.

Educational information specific to the small farm audience needed to be developed to make efficient transfer of knowledge at the county extension program level. In the past, the information that would be useful to small farmers was difficult to find and was not well organized. County extension agents needed information they could easily access and efficiently use to teach small farm clientele. Florida has perhaps the most diverse agriculture and natural resources in the country representing nearly $70 billion in output impacts in the state. Over 30,000 farms exist in Florida with small farms accounting for over 90% of all farms in the sunshine State. Small farmers own and manage the majority of non-urban, privately owned land in the state. Due to the vast diversity of climate, soils, water resources, coastal areas, and natural resources; small farmers in Florida have a very wide range of alternative enterprises available to them. Providing educational information on these enterprises to small farmers is quite challenging to the Florida Cooperative Extension system. Educational needs of small farmers in Florida were identified as one of the statewide priority thrusts for Extension programs. As a result, the Small Farms/Alternative Enterprises focus area was created under the Extension Statewide Program Goal #1, "To Enhance and Maintain Agricultural and Food Systems".

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- Entrepreneurial and business skills development.
- Networking with other small farmers.
- Readily accessible technical information on small farms and alternative crops and enterprises.
- Access to labor.
- Improving consumer relations and perceptions of farming.

Providing this information to small farmers would increase profitability and improve their quality of life by making informed decisions. Developing information in an organized and easily accessible format would improve the quality and efficiency of extension agent program delivery. The development of a small farm website was planned to become the primary educational program deliverable. This deliverable would serve the identified needs by the clientele of Florida.

The Florida Small Farms/Alternative Enterprises Focus Team identified the primary topic areas needed to begin building the new website in 2004. Key individuals were recruited to help build the information for the key topic areas. These teams of individuals included University of Florida and Florida A&M University county and state faculty and staff, growers, and allied industry stakeholders. The key topic areas include:

- Small Farm Development
- Agronomics
- Agritourism
- Aquaculture
- Cut Flowers & Cut Foliage
- Forages
- Forestry
- Fruits & Nuts
- Greenhouse/Hydroponic Crops
- Herbs
- Livestock
- Organic Enterprises
- Ornamental Crops
- Value-Added Opportunities
- Vegetables
- Wildflowers
- Wildlife & Hunting

Other Miscellaneous Enterprises

The newly developed Florida Small Farms website, http://smallfarms.ifas.ufl.edu, was officially opened on the web in March 2005. During the first month, over 33,000 hits were received on the site, increasing to over 54,000 hits in April 2005. Feedback from county extension agents and farmers throughout the state verifies that the site is very useful and a very efficient way for farmers to access information on alternative enterprises.

Future program efforts from the Florida Small Farms/Alternative Enterprises team include the initiation of several regionalized small farms conferences in 2006, strengthening and updating the website, identifying and developing key publications needed by small farmers, and improving small farm demonstration sites across the state.

Niche Market Opportunities: a Consumer-driven Approach

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Introduction

U.S. food and fiber industry is driven by consumers' tastes and preferences. A more diverse U.S. population has over the years influenced the way food is produced and distributed. Most notable changes include consumers' health conscientiousness, lifestyle, and consumers' purchasing power. Most recently, a more diverse U.S. population spurred by emerging races and ethnic groups has revolutionized the way food will be produced and marketed in the U.S.

The goal of this paper is to discuss niche market opportunities in the Baltimore-Washington, DC area in the light of recent food and demographic trends. More specifically, the objectives of this paper are to: (1) discuss U.S. demographic trends in support of ethnic food industry; (2) discuss ethnic food trends in the U.S., (3) research strategies for developing specialty and ethnic vegetable markets; (4) document ethnic and specialty vegetables' production windows in the Baltimore-Washington, DC area; and (5) explore possibility for extending ethnic vegetables' growing season.

U.S. Demographic Trends

As indicated in Table 1, the overall U.S. population has become diversified in the last decade. Since 1990, Native Americans have more than doubled (110% increase), followed by a considerable increase in other ethnic groups, namely Asians (64%), Hispanics (58%), and African Americans (22%).

Table1. U.S. Population by Race and Hispanic Origin (1990 and 2000)

	1990	2000	Population Growth
African American	29,968,060	36,419,434	21.5%
Asian	7,273,662	11,898,828	63.6%
Caucasian	199,686,070	216,930,975	8.6%
Native American	1,959,234	4,119,301	110.3%
Native Hawaiian[1]	-	874,414	-
Other Race	9,804,847	18,521,486	88.9%
Hispanic/Latino	22,354,059	35,305,818	57.9%
Total Population[2]	248,709,873	281,421,906	13.2%

[1]Native Hawaiian and Other Pacific Islander
[2]Total population includes Hispanic/Latino even though listed separately in the table.
Source: Census of Population and Housing, http://www.census.gov/population and http://factfinder.census.gov

Similarly, the diversity of the U.S. population is also observed within regions (Table 2). For instance, in the Baltimore-Washington, DC area (District of Columbia, Maryland and Virginia), Native American population has increased in the last 10 years in both Virginia and the District of Columbia by 246 and 220 percent respectively, followed by Hispanics in Virginia (106%) and Maryland (82%); and Asians in Virginia (92%), District of Columbia (61%) and Maryland (51%). African Americans and Caucasians have increased but at a slower rate than that of other ethnic groups. Population projections predict a higher growth among Hispanics (5%) in the next 20 years (2000-2020).

Table2. District of Columbia, Maryland and Virginia Population Growth (1990-2000)

	Percentage Change		
	District of Columbia	**Maryland**	**Virginia**
Total Population	**-5.7**	**10.8**	**14.4**
African American	-12.3	24.2	23.9
Asian	60.7	51.0	91.5
Caucasian	2.6	-0.1	9.2
Native Hawaiian	--	--	--
Other Race	91.9	--	226.4
Hispanic/Latino	37.6	82.2	105.6

U.S. Ethnic Food Trends

It is estimated that U.S. ethnic food markets account for $75 billion in annual sales (Miller, 2005). According to Kohls and Uh (2002), consumers' taste and preferences shape the nation's food and fiber system. Food consumption patterns are influenced by physiological needs, social conditions, and economic factors.

The determinants of demand such as income, and populations have influenced the U.S. ethnic food industry. In fact, culturally-based food habits are one of the last traditions people change when they move to a new country. Given the ever growing U.S. ethnic diversity and opportunity offered by untapped ethnic produce markets, excellent opportunities exist for U.S. consumers, food retailers, and farmers (Tubene, 2001).

Ethnic populations not only introduce new foods and food consumption patterns in the U.S., but also create new market opportunities for traditional foods. In some cases, they have also fostered new forms of food retailing, such as the *bodegas* (small neighborhood food stores) in large cities (Kohls and Uhl, 2002).

According to Bellenger and Blaylock (2002), three demographic trends that will shape the future U.S. food markets include more mature consumers, more diversity, and more people to feed. A more diverse population implies a shift in food preferences as well as a notable expansion of the U.S. food repertoire. In order to benefit from this diversity, U.S. food suppliers must be aware and knowledgeable of the differing preferences of population subgroups and able to creatively tap into U.S. consumers' taste and preferences. Ethnic and specialty vegetables consistently respond to this challenge.

Developing Ethnic Produce Markets

The nature of agriculture significantly influences the organization and complexity of the food marketing system. Mostly, fewer, larger, and more specialized farms are producing the nation's food supply. The key farm product and output characteristics that influence the food marketing process are bulkiness, perishability, quality differences, output

variations, and the geographic specialization of individual commodities. The farm marketing problem has several dimensions, including the difficulty of adjusting farm output to rapidly changing market needs, the price-taking status of farmers, the farm cost-price squeeze, the imbalance of bargaining power between farmers and marketing firms, and declining pricing efficiency in agricultural markets (Kohls and Uh, 2002).

Nevertheless, ethnic vegetable producers most likely utilize direct marketing outlets such as farmers markets, pick-your-own (PYO), farm and roadside markets, community supported agriculture (CSA), mail order, and Internet marketing. They are not actually subject to the constraints of traditional agricultural market outlets since they operate in a monopolistic competition model rather than in a perfectly competitive market experienced by the traditional U.S. vegetable producers. Ethnic and specialty vegetable brand name is sufficient enough to differentiate itself from the mainstream agriculture commanding therefore, a premium price of a high-value niche product.

How farmers secure their own market outlets depend on the knowledge of the ethnic communities and the proximity of these markets. Farmers who are familiar with ethnic communities find it easy to penetrate such markets by building personal relationships with store and restaurant managers. This becomes efficient when farmers are located near these markets. Rural and remote communities may not enjoy such privileges if located away from metropolitan cities.

In the Baltimore-Washington, DC area, farmers have already identified their own niche markets, which work well for them. Given the shortage of ethnic produce in the region, available produce are immediately sold through these established market outlets. These niche market outlets are mostly Pick Your Own, farmers markets and international food stores. In the Baltimore-Washington, DC area, farmers rarely sell their produce to wholesalers due to a high demand of ethnic produce escaping therefore, the imbalance of bargaining power between farmers and marketing firms.

Ethnic Vegetable Production Windows

Ethnic and specialty vegetables are usually stranger to temperate weather. Their natural habitat is tropical climate where the weather is hot and humid. Although perennial in their natural environment, ethnic vegetables cannot resist cold weather making it difficult to be grown throughout the year in the Baltimore-Washington, DC area.

In Maryland and Virginia, ethnic and specialty crops have adapted well to the spring and summer weather offering a production window of about 4 months ranging from May to September. Most seeding takes place in the greenhouse in February while transplantation occurs in May. Harvest occurs from early July to late September (Myers et al., 2004).

Extending Growing Season

Ethnic vegetables are grown in tropical climate where most crops are perennial. In Maryland, the growing season is short ranging from spring to fall (April to September). Ethnic vegetable production season can be extended beyond the natural growing season using high tunnel technology. More specifically, perennial vegetables such as edible hibiscus, and hot peppers can be grown for a longer time period (May-December) whereas annual vegetables such as amaranth, basil, and cilantro can be produced several times throughout the year extending therefore the production window from 4 to 7 months offering therefore, the potential to double farmers' income.

Conclusion

The ethnic foods industry accounts for $75 billion in annual sales in the U.S. Ethnic and specialty vegetables have become a significant alternative agriculture in the U.S. On one hand, U.S. future

demographics predict a more diverse U.S. population. On the other hand, research indicates a promising future (of ethnic and specialty vegetables) for both consumers and food retailers. Being aware of the short production window for ethnic vegetables in the Baltimore-Washington, DC area, a growing season can be extended using a high tunnel technology.

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Innovative Production: Taking the First Step: Farm and Ranch Alternative and Agritourism Resource Guide

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The agricultural and rural landscape is rapidly changing. Land is being converted to housing and other permanent uses at an alarming rate. One result of this transformation is the loss of prime farmland near all of the major cities and many rural towns. Some sectors of agriculture are moving into what some people call an industrialization stage, or the very large and concentrated production of food and fiber.

Some farmers don't want to expand their operations, but few small farms can yield traditional farm products and compete successfully in this marketplace. Some agricultural sectors, for example tobacco, are in transition to new food and fiber production enterprises or to agritourism alternatives that will help them maintain or increase their farm income, sustain their lifestyle, and conserve their natural resources.

This transition into alternative enterprises and agritourism is happening at an opportune time. Urban and rural consumers alike are lining up, in several areas of the country, for food, fiber, and fun from the local farmer or rancher.

Market research and experience show that: Consumers today are looking for local, fresh, organically or naturally grown products and are, in most cases, willing to pay extra for them. More and more, consumers want to know who produced their food and how it is produced. Thus, they support local farmers and the conservation of natural resources. Children and adults are looking for the opportunity to engage in interactive educational and outdoor activities. Tourists and farm customers are interested in farm culture and heritage so they can better understand agriculture. This opens the door for farmers and ranchers to provide an agricultural experience. The public is looking for interactive experiences close to home that will help them get back to their roots.

Rural America and the farm or ranch heritage and culture can help meet these needs. The National Survey on Recreation and the Environment estimated that 63 million Americans visited farms annually during the 2000– 03 survey-periods. This indicates that alternative enterprises and agritourism would be a viable partner in most rural community economic development programs.

What is remarkable about these alternative enterprises—be they production of traditional or unique crops or livestock, direct marketing of traditional farm products, marketing value-added products, or providing recreational, entertainment, or educational facilities—is that they all have a common theme: farmers and ranchers are using their natural resources to keep their families on the farm and their farms in the family.

Using the Resource Guide

This guide is designed to help technical staff and rural leaders assist farmers and ranchers in taking the first step in identifying alternative enterprises and agritourism opportunities. It is difficult for a farm family to initiate this first step alone. Changing to a new enterprise involves different production techniques,

processing methods, and marketing activities. The entrepreneur must also identify and establish relationships with new networks and organizations that can help support the transformation to new enterprises.

This guide is developed and organized to help farmers and ranchers through the assessment of their natural, family, and community resources. It is designed to provide a basic understanding of how the interaction of soil, water, animals, plants, air, and human resources, and the conservation of them, provide opportunities for the development of alternative enterprises and agritourism.

This guide will help the landowner to inventory and understand the farm or ranch resources, think openly, think creatively, think of the unusual, but most importantly, think outside the box as they explore options for alternative enterprises and agritourism.

Basic questions asked throughout this guide are:

- What can be done differently to sustain the resources and the family?
- What new enterprises might fit with existing farm and ranch enterprises?
- Do markets exist for the products that can be grown or produced, the services that could be provided, or the kinds of recreational or educational activities that can take place on a farm or ranch?
- What federal, state, and local grant, loan, or conservation programs can be used to help develop these enterprises?
- Are private funds available?

In addition to the First Step Resource Guide a CD-ROM of many resources related to small farms, alternative agriculture, business planning, agritourism and funding resources is also available. These materials were first made available to technical assistance organizations and agencies in February 2004. Within six months the 5,000 copies of the First Step publication were distributed to NRCS, Cooperative Extension and small farm offices and organizations. Demand has far exceeded supply. In November 2005 the First Step reprint will be available for distribution from the Southern Maryland Resource Conservation and Development office. The CD-ROM is currently being updated with anticipated release date of January 2006.

Funding for the reprint of the publication and CD-ROM has been provided through the following agencies and organizations: Southern Maryland Resource Conservation & Development Council; USDA Natural Resources Conservation Service; USDA Cooperative State Research Education and Extension Service; The Western Center for Risk Management Education; Southern Region Risk Management Education Center; The Northeast Center for Risk Management Education; North Central Risk Management Education Center; USDA Farm Services Agency

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Helping Small-scale and Part-time Farmers Evaluate Alternatives; the Agricultural Alternatives Project at Penn State

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To meet the educational needs of small-scale and part-time farmers, Penn State's College of Agricultural Sciences, with support from the USDA-Cooperative State Research, Education, and Extension Service, the USDA-Risk Management Agency, and the Pennsylvania Department of Agriculture, has developed a set of 58 publications called "Agricultural Alternatives". Most of the publications introduce various alternative enterprises, while others discuss important farm management and marketing topics. The enterprise publications help producers evaluate alternatives by providing unbiased information on marketing, production requirements, cost of production, and resource needs. Each four to eight page publication also has a list of references, trade and marketing association information, and mailing and web site addresses where more information can be obtained.

Over the past three years the project has issued several new and revised "Agricultural Alternatives" publications. They include farm risk management publications entitled *Starting or Diversifying an Agricultural Business, Developing a Business Plan, Agricultural Business Insurance, Cooperatives, and Financing Small and Part-time Farms.* New and revised enterprise publications include *Organic Vegetable Production, Boarding Horses, Introduction to Aquaculture, Apple Production, Peach Production, Partridge Production, Pheasant Production, Small-flock Turkey Production, Red Raspberry Production, Red Deer, and Watermelon Production.* Some "Agricultural Alternatives" publications now being developed or revised include enterprise leaflets on garlic, wine grapes, cantaloupe, rabbits, earthworms, elk, dairy goats, specialized lamb, feeder lamb, spring and fall lamb, accelerated lamb, and business management leaflets on enterprise budgeting, agritainment, and roadside marketing.

Over the years the project has also developed enterprise leaflets on accelerated lambing, asparagus, beef backgrounding, beef cattle feeding, beef cow-calf, beekeeping, bell peppers, bison, bobwhite quail, broccoli, cantaloupes, cucumbers, dairy beef, dairy goats, dairy heifers, earthworms, eggs, elk, emus, fallow deer, feeder lambs, highbush blueberries, holiday lambs, meat goats, milking sheep, onions, ostriches, partridges, pheasants, potatoes, pumpkins, rabbits, red deer, rheas, snap beans, spring lambs, strawberries, sweet corn, swine, tomatoes, and veal. There are also publications available on enterprise budgeting, fruit and vegetable marketing, drip irrigation for vegetable production, and irrigation for fruit and vegetable production. Individual "Agricultural Alternatives" publications can be downloaded in Adobe Acrobat (pdf) format on-line at http://agalternatives.aers.psu.edu.

The Agricultural Alternatives Project is managed by Lynn F. Kime (extension associate in Agricultural Economics) and coordinated by Jayson K. Harper (professor of agricultural economics). If you have any questions about the Agricultural Alternatives Project, Lynn can be reached via e-mail at lfk4@psu.edu or telephone at (717) 334-6271, ext. 313

Track Six

Program and Professional Development

Small Farm Teaching Activities

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Objectives
- Discuss Small Farm Course
- What is Cooperative Learning
- What Teaching Activities are used
- Developing Activities for programs

Maryland's Situation
- Population 5,296,486
  - 19th most populous state
  - Ranked 6th for population density
    - 529.1 people per square mile
- Median Income
  - $52,868 a year in MD
  - $41,994 a year in US
- Maryland has a growing population with disposable income

2000 Census Data

Maryland Agriculture's Situation
- Land in Farms
  - 48% of farms are less than 50 acres
- Occupation
  - 62% report farming is not a primary occupation
  - 68% report working off the farm 200 days or more
- Maryland has Part-time farmers on small acreages

2002 Census of Agriculture

Goals of the Small Farm Program
- Introduce the agriculture industry and enterprises available to small farmers
- Environmental stewardship, crop and livestock production strategies
- Tools to develop a small farm enterprise
- Resources available to small farmers

Types of Programs
- Small Farm Short-Course
  Held 3 small farm courses (6 week)
- Workshops
  Tourism, Equine, Direct Marketing, Greenhouse, QuickBooks, Small Business Development, Farm Markets, Marketing/Business Planning
- One on one visits
- Farm and office

Highlights
- Small Farm Short Course
- Workbook
- Survey of interests
- Teaching Activities and "Group Work"
- Panel of successful small farmers
- Decision making, production/growing techniques, Marketing, Regulations, and Advice for a small farmer that is starting a business?

Results
- 95% of participants rated the course "Excellent"
- 98% of participants rated content, organization, creating interest, involvement of participants, pace of delivery, and workbook materials as good or excellent

Outcomes
- Participants were asked which farm practices would be incorporated as a result of this course:

  90% Soil test
  88% Renovate your pasture
  88% Try a new crop
  90% Incorporate IPM on farm
  90% Write a business marketing plan
  80% Try a new animal enterprise

Participation
- Small Farm Short-Course - 44 participants
- Workshops - 220 participants
- One on one visits - 72 participants
- Total – 336 participants

Small Farm Enterprises
- Equine Pasture management,

renovation, equine opportunities, marketing
- Direct Marketing/Farm Markets Display design, product mix, marketing, customer service
- Greenhouse Marketing, business management

Why Teaching Activities?

Cooperative Learning

"Researchers report that, regardless of the subject matter, students working in small groups tend to learn more of what is taught and retain it longer than when the same content is presented in other instructional formats." (Barbara Gross Davis, Tools for Teaching)

Teaching Activities

- Introduction to Agriculture
  - Small Farm Survey
  - Farm Information Sheet
- Soils and Pest Management
  - Soil Testing
  - Pesticide Label
- Livestock Management
  - 4 Steps to Rotational Grazing
  - Hay Quality
- Business and Marketing
  - Enterprise Brainstorming Activity
  - Market it

Developing Activities

- Be Creative
- Assess the Audience – Some participate more than others
- Keep within the Goals of the Class

Small Farm Teaching Activities

- Sample activities were shown as examples
- Manual has been developed including
  10 Activities
  23 pages
  Will be available Jan 1, 2006

Tips for Early Career Success in Programming for Small Farmers and Ranchers

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New personnel are often overwhelmed with the breadth, depth, and diversity of providing educational assistance to small farmers and ranchers. Time management, community needs assessments, organizational skills, public relations, and the development of a program emphasis are all key components for educators developing their local programs early in their career. The purpose of this abstract is to share tips for early career success in programming for small farmers and ranchers.

Getting to Know the People

One of the most crucial steps in starting a new community outreach program is getting to know the needs of the clientele. On-site visits, surveys, focus groups and agricultural committees all can play a major role in determining the educational needs of a community. Educators should set a goal of meeting as many farmers and ranchers as possible on site during their initial years of employment. These meetings allow the educator to ask producers about their educational needs and their perception of the assistance that you, as the Educator, can offer them. In addition, these on-site visits allow an educator to watch, listen, and feel for the producers' unspoken needs.

A great way to ascertain programming needs of a clientele group is to develop an agricultural program committee. This committee should represent the present and potential areas of program emphasis. Include key leaders, producers and public officials. To keep the energy on the committee fresh, it has been suggested that members serve no more than two three-year terms with one-quarter to one-third of the membership changing annually[1]. The educator should strive to include a balance of age, income, gender, race and geographic distribution on their committee. These groups are invaluable in providing input for educational programming and research.

The educator can also use mail surveys to help ascertain programming needs. Surveys should be constructed so they are easy to respond to. After all, what busy farmer or rancher wants to complete a 15 page survey in the middle of planting season? Educators should not attempt to get all the answers from one survey. It is also helpful to pilot test the survey with a group of producers to make sure they can understand the questions and make sure all possible answers have been accounted for.

Educators can also use focus groups to ascertain the educational needs of their farmers and ranchers. Methods such as "Appreciative Inquiry" bring community members together to assess present and past programming, identify major trends, and identify common ground and goals for the future. Appreciative inquiry sessions are invaluable to educators who are completely new to their community as it allows them to understand the underlying values and beliefs of a community. Educators wishing to learn more about how appreciative inquiry is being used by educators in Ohio can contact Chester Bowling at bowling43@osu.edu or 614-292-8436 or review the website at: http://appreciativeinquiry.cwru.edu/

Organization & Time Management

"It is a great art to know what to leave undone, to know how to weed out the less important things, and to spend one's energies in doing the things which will count." [2]

One of the struggles for any educator is how to balance the educational and research demands of their community with their personal life. It is vital that new educators put in place strategies to help manage their time early in their career. Administrator after administrator can cite examples of educators that have ruined their personal, and sometimes professional, lives due to poor time management.

Prioritizing and organizing are two of the most critical aspects of time management. It has been quoted that the average educator wastes six weeks per year searching for lost information in messy desks or files. A loaded desk is not always the sign of a very busy and important person. It may just be the sign of disorganization. Educators should strive to develop a file system that highlights different programming areas. Some educators have adopted colors for files in each area. For instance, all committee work and programming information for water quality programs would be filed in blue file folders, whereas information on forestry issues may be in a green file.

Additional ways for Educators to keep organized is by keeping clutter at a minimum by utilizing a variety of storage items, storing as much information as possible on a computer to limit paper clutter, and opening mail near the recycling box.[3] Establish a to-do list of projects that are important and then treat them with priority. Another good strategy is to complete more difficult tasks in off-hour periods or at times when interruptions in the office can be minimized. Some educators will flex their schedule to work late, early or on weekends to complete these tasks.

A question that all educators should ask is, "Does having a career mean giving up your family life?" Some educators have found success in balancing family and work by implementing a variety of strategies. It is helpful for educators to use one calendar making sure to schedule annual leave and important family and school events in first. These dates then become non-negotiable when committees are scheduling meetings and programs. Some educators place JFMF meetings (Just for My Family) into their schedules. Educators can also piggyback meetings into one night (one meeting from 6:00-7:30 pm and one from 8:00-9:30 pm) instead of being at the office two consecutive nights.

Communication by the educator is key. Communication with the organization's receptionist is vital for when clientele call or stop by the office. The receptionist needs to know where you are and the next time you will be available to meet with clientele. Nothing is worse than a receptionist saying, "I don't know where she/he is or when she/he will be back." Even though you could be at an important meeting or working on an on-farm research project, the clientele will leave thinking that you are out golfing! Communication with your spouse and children is also key. It is helpful to the entire family to establish parameters. For instance, the author's family goal is to eat dinner as a family each night (whether that is at the office, home or banquet). We also have established that work stays at work and home phones are not for business.

Ohio State University Extension offers additional strategies with regards to time management, creating balance, dealing with interruptions, organizing, setting priorities and managing procrastination. These strategies can be found at: http://hr.ag.ohio-state.edu/TimeMangWebsite/index.htm

Media Relations

One excellent way for educators to get a good start to their career is by developing a positive relationship with the local media. Publicity for educational events through the news media can help increase attendance and visibility of the local office. Educators should meet with local editors to make the connection that you, as an Educator, are here to help them. Some educators offer to write a weekly column and send in pictures from agricultural events as a service to the paper.

Summary

Getting to know the community, developing time management and organization skills and developing a media relations plan can help new Educators to be more successful early in their career.

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Growing Places: Developing Informed Decision-Making for Beginning Farmers

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The number of women aspiring to become farmers is increasing annually and demographic indicators suggest that this trend is likely to continue. Frequently these new farmers have some unique needs that have not been addressed in traditional Extension business management programs. In working with this audience we have been challenged to reconsider some of our fundamental beliefs about farming and what constitutes "success."

The Women's Agricultural Network (WAgN) opened in 1995 as a beginning farmer program with two primary objectives: i) to help women get connected to USDA programs and, ii) to develop strong agricultural business management skills. WAgN has since delivered outreach, education and technical assistance to over 1600 individuals and helped over 400 attain their business goals. One of the lessons learned is that management education is most successful when considered within the context of the lifestage needs of the client. For that reason we have developed a pre-business readiness class, *Growing Places*, which helps individuals address issues such as work-family-life balance, financial needs and expectations, and community support as well as issues of scope, scale, and production within the business.

This presentation addresses the processes that many beginning farmers engage in as they evaluate the feasibility of their business idea and the importance of informed decision-making on future happiness. We will also discuss why we believe pre-business readiness classes, like *Growing Places*, are important not only for sharpening the decision-making skills of prospective farmers but also in raising the agricultural IQ of rural communities and integrating under-served audiences into the many service and educational opportunities available.

Growing Places addresses the earliest stages of business development (figure 1). During the pre-business planning phase it is imperative that the individual articulate clearly what they hope to achieve from the business and what resources they have to invest as well as understand their comfort with respect to risk.

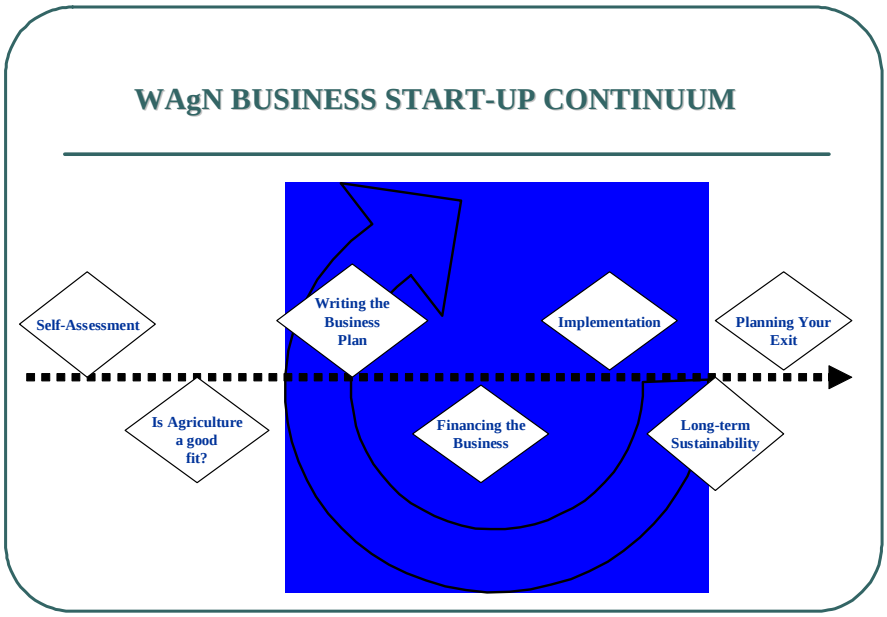
Growing Places is an eighteen hour pre-business planning class that has proven useful to individuals exploring agriculture as a business opportunity. Twelve to eighteen months after the class ends participants are asked to complete a follow-up survey. This helps us to track individual progress but also to see what difference the class made.

Results of follow-up surveys with class graduates indicate that approximately 44% of participants do, in fact, go on to start businesses. Over half of the participants have gone to other workshops or classes to help them achieve their goals. About 20% of the participants report that the class helped them decide not to continue with their plans for an agricultural business. Given the many challenges faced by farmers we applaud both the decision to move forward and the decision not to with equal enthusiasm.

The core of *Growing Places* is a values-based goal statement that participants are encouraged to write in the first week of class. That goal statement serves as a fundamental tool in the remaining classes. Classes that follow include: decision-

making, resource evaluation, financial management, and marketing. The class closes with action planning which helps participants focus their energy on moving toward their goal. For some participants the class provides all the information necessary for them to go on to complete their business plan. For others, the support and structure of additional classwork is needed. For those participants *Growing Places* is followed by a class in writing the business plan. This class is a collaborative effort of UVM Extension and SBDC with additional support from a variety of ag-related organizations.

Of the 300+ individuals that have registered for *Growing Places* the completion rate is extremely high. In ten years, only 5 individuals have not completed the class. This speaks well for the content of the class which students consistently rate very high and the manageable length of the class. In the business plan writing class which lasts for 14 weeks and consists of both *Growing Places* graduates and others that have not participated in *Growing Places*, the rate of completion is much higher among those that have attended *Growing Places*. We maintain that one reason for this is that *Growing Places* acts as a filter helping individuals to assess for themselves whether self-employment is a viable option.



Developing Community Supported Agriculture Production & Marketing Tools for Extension-based Education to Limited Resource Small Farmers

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Justification and Description
Community Supported Agriculture (CSA) is a production and marketing system that small farmers can adopt to reduce economic risk. Through CSA, customers pre-purchase a share of the harvest before the growing season. This pre-payment method helps with start-up costs occurring early in the season; reducing financial burdens associated with operating loans or credit cards. Although CSA is a profitable alternative, adoption is slow. Due to the complex range of production, planning and marketing skills involved in developing a successful CSA operation, it is difficult for educators to teach CSA concepts to limited resource small farmers seeking profitable alternatives. There is a justified need to produce an educational toolbox to teach the fundamentals of CSA to limited resource small farmers.

Objectives
Objective 1: Develop research based CSA production and marketing tools that teach how to plan, produce and market through CSA.

Objective 2: Utilize research and demonstration data to create on-farm, research-based education tools that can be adapted by educators who are teaching CSA to limited resource small farmers.

Objective 3: Demonstrate and evaluate developed research based educational tools for use in educational trainings on CSA.

Approaches
To address the identified educational need to develop CSA production and marketing tools that teach how to plan, produce and market through CSA, we have conducted a three year on-farm research and demonstration experimental trial in collaboration with NC Department of Agriculture's Research Station Division and NC Cooperative Extension-Ashe County.

The following educational tools *(Items a to f., listed below)* included on an interactive, multi-media resource CD, have been developed and can be readily adapted or utilized by extension and research personnel faced with the challenge of teaching CSA to limited resource small farmers or other interested individuals:

a.) Teaching worksheets

b.) Share Distribution guide

c.) Production & marketing calendar of events

d.) Sequential planting and Sequential harvesting guide (calculation spreadsheet)

e.) Educational consumer marketing brochure templates

f.) Introduction to CSA (LR Audiences) presentation and teaching Handouts

Results
As a direct result of our collaborative horticultural research and marketing extension efforts, we have produced research based CSA production and marketing tools educators can use or adapt to teach limited resource small farmers how they can plan, produce and market through CSA.

The uniqueness of these developed tools is that they provide tangible, reality-based examples of how an entire CSA operation is planned out from the beginning (crop production based on customer needs) to the end (distribution of harvested crops to customers).

Conclusions

This collaborative effort reflects a well-rounded approach to developing research-based alternative agriculture educational outreach tools that address both production challenges and marketing skills needed to confidently teach others how to successfully conduct a CSA operation.

On-going educator evaluation tools are needed to determine the immediate and long-term impacts of adapting and implementing the developed CSA educational outreach tools for use with limited resource small farmers. Educators should apply regionally based knowledge of agronomic data when teaching small farmers how to use or adapt the developed CSA educational outreach tools. Educators should be aware of regional crop production variations and incorporate historic regional climatic data (i.e. Last and beginning frost dates, soil temperature, etc.) and location appropriate agronomic data (i.e. Crop varieties, soil fertility requirements, etc.) for optimal educational impact when adapting these CSA educational tools to reach limited resource small farmers.

Outcomes and Impacts

The primary outcome of developing this set of CSA educational outreach tools will be to increase educator confidence in teaching alternative marketing strategies such as CSA to risk-averse, limited resource, small farmers. The ultimate impact of this collaborative effort is to increase the profitability and sustainability of current and future small farmers who are experiencing conceptual challenges of how to develop and market a CSA operation.

Acknowledgements

The author is grateful to: Dr. Keith Baldwin, Extension Program Leader for his leadership guidance and for providing his CSA demonstration field data to develop reality based CSA educational tools, to NC Department of Agriculture's Research Station-Upper Mountain Faculty and Staff, to NC Cooperative Extension Alternative Enterprises Area (Ashe, Alleghany, and Watauga Counties) Specialized Agent, Richard Boylan.

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Typology of America's Small Farms: Characteristics in 2003

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Farms vary widely in size and other characteristics. They range from very small residential and retirement farms to farms with sales in the millions. The U. S. Department of Agriculture's Economic Research Service (ERS) has developed a farm typology that classifies farms into more homogeneous groups, based largely on operator occupation and farm sales class. This method produces a more effective tool than classifications based on sales class alone.

The typology identifies five groups of small family farms (sales less than $250,000): limited-resource, retirement, residential/lifestyle, farming occupation/lower sales, and farming occupation/higher sales (see box). To cover the remaining farms, the typology also classifies all other farms into large family farms, very large family farms, and non-family farms. Small farms account for 91 percent of the farm count and 71 percent of farm assets—including land—but only 27 percent of agricultural production (see figure).

The small farm groups differ in their contribution to agricultural production, their product specialization, program participation, and dependence on farm income.

The diversity of today's farms has some implications listed below:

- **Production is concentrated among large family farms, very large family farms, and nonfamily farms.** The nation relies on larger farms for most of its food and fiber, despite the large number of small farms.

- **Different policies affect diverse family farms in different ways.** The variety of farm types—what they produce and their differences in characteristics, economic situation, and household and business arrangements—make different policy instruments appropriate for different portions of the family farm population.

- **Commodity program payments go mostly to high-sales small farms, large family farms, and very large family farms.** These farms produce most of the commodities that farm programs have traditionally supported.

- **Small family farms are an important factor in conservation policies because of the large share of farmland they hold**. Policies addressing natural resource quality and conservation affect many small family farms.

- **If high-value enterprises are to be adopted by small farm operators—suggested by many small farm advocates—compatibility with part-time farming is important.** Many small farms specialize in cattle for a very practical reason. Cow-calf operations require limited hours of work, with some flexibility as to when the work is performed.

- **The nonfarm economy is critical to household operating small family farms.** Because small-farm households rely on off-farm work for most of their income, general economic policies, such as tax or economic development policy, can be as important to them as traditional farm policy.

- **Nevertheless, such measures as extension education targeted specifically at small farms could help some small farm families increase their income.** Trying to raise earnings from farming may be particularly appropriate for limited-resource farmers. Even modest improvements in household income could be important to these low-income farmers.

Farm Typology Group Definitions for 2003

Small Family Farms (sales less than $250,000)[1]	**Other Family Farms**
Limited-resource farms. Small farms with sales less than $100,000 in 2003, and low operator household income. Household income is considered low if it is less than the poverty level for a family of four in both 2003 and 2002, *or* it is less than half the county median household income both years. Operators may report any major occupation except hired manage **Retirement farms.** Small farms whose operators report they are retired[2] **Residential/lifestyle farms.** Small farms whose operators report a major occupation other than farming[2] **Farming-occupation farms.** Small family farms whose operators report farming as their major occupation.[2] **Low-sales farms.** Sales less than $100,000. • **High-sales farms.** Sales between $100,000 and $249,999.	**Large family farms.** Sales between $250,000 and $499,999. **Very large family farms.** Sales of $500,000 or more. **Nonfamily Farms** **Nonfamily farms.** Farms organized as nonfamily corporations or cooperatives, as well as farms operated by hired managers. Note: The farm typology focuses on the "family farm," any farm organized as a sole proprietorship, partnership, or family corporation. Family farms exclude farms organized as nonfamily corporations or cooperatives, as well as farms with hired managers. [1]The National Commission on Small Farms selected $250,000 in gross sales as the cutoff between small and large. [2]Excludes limited-resource farms whose operators report this occupation

Effective New Farmer Education Evaluation

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Background

January 2000 marked the onset of a 4-year, multifaceted project dedicated to supporting the success of new farmers in the Northeast. The Growing New Farmers project was a USDA grant-funded initiative managed by the New England Small Farm Institute in Belchertown, MA, which was responsible for coordinating the efforts of over 170 service providers in a 12-state region. In addition to supporting the development of a consortium of service providers, a "one-stop" web site resource for new farmers, and a policy tool kit for new farmer supporters and public policy educators, the project supported empirical research designed to better understand the experiences and needs of new farmers. This article and the corresponding conference workshop are about one of the research projects, a 2-year study designed to evaluate the effectiveness of the variety of types of learning programs available to new farmers in the Northeast. The purpose of this article is to provide an overview of the study. In the workshop, participants will share their own experiences of effective farmer education and contribute recommendations for enhancing educational opportunities and services for new farmers.

Description of the Study

This qualitative study explored how new farmers learn and apply the knowledge and skills they need to be successful, and the effectiveness of different types of new farmer learning programs in preparing new farmers for success.

The specific goals of this study were to:

1. Describe the nature of proficiency, or "know how," among a sample of successful new farmers in the Northeast.
2. Identify learning experiences that successful new farmers consider most significant to the development of their proficiency.
3. Evaluate how different types of new farmer learning programs in the Northeast (including land-grant university programs, cooperative extension, apprenticeship, youth programs, immigrant farmer programs, and farmer-to-farmer programs) contribute to the development of proficiency among new farmers.
4. Formulate recommendations based on study outcomes for individual farmers, learning programs, and policy makers for supporting the learning of new farmers in the Northeast.

For the purposes of this study, successful new farmers were defined as beginning farmers who had completed re-strategizing efforts and were on their way to becoming established farmers. This definition is consistent with the multifaceted typology of new farmers developed by the Northeast New Farmer Network Project (Sheils, 2004). Table 1 provides a description of the three study phases, the research questions that were answered in each phase, and the methods used to answer each research question.

Data Collection Methods

The 10 new farmers who participated in Phase One of the study were selected through a process of peer and service-provider referral, which resulted in a list of successful small-scale farmers representing different farming approaches (e.g., conventional, organic), commodities (e.g., vegetable, dairy, poultry), marketing strategies (e.g., direct, wholesale, CSA), and geographic regions (e.g., mid-Atlantic, upstate NY). The sample emphasized sustainable and organic practices to reflect growing trends in the Northeast and the USDA Small Farms Commission (1998) policy recommendations emphasizing sustainable agriculture as a profitable, ecological, and socially sound strategy for small farms. The seven instructors who participated in Phase Two were invited to participate via a similar referral process that included referrals from peers and farmers. Six different types of new farmer learning programs were represented in the sample including land-grant university programs, cooperative extension, apprenticeship, youth programs, immigrant farmer programs, and farmer-to-farmer programs. Data collection from farmer and instructor participants included on-site semi-structured interviews and observations (completed between July 2001 and July 2002), follow-up conversations, and collection of "artifacts" such as curriculum materials from instructors and marketing plans from farmers. Additionally, farmer participants completed a short survey of learning activities, indicating activities they perceived as most important to their professional development.

Results

Table 2 represents the researchers' answer to Research Question 4 posed in Phase Two of the study. The grid is constructed so that the results of Research Questions One, Two, and Three (i.e., the nature of proficiency among successful new farmers, the activities they use, and how they engaged in the activities) are listed in the left vertical axis. The six different types of learning programs are listed across the top horizontal axis. Notations in the grid boxes are based on analyses of all the data and indicate the extent to which each type of program characteristically supported new farmers in (a) developing the requisite knowledge and skills, (b) experiencing key learning activities, and (c) engaging in a variety of learning contexts. The footnote to the table includes an acknowledgement that variability exists in the Northeast among programs in each category, and that the profile of characteristics for any specific program may be different from the overall profile indicated in the grid.

Conclusions

Key conclusions based on study results about successful new farmer learning and the effectiveness of learning programs in supporting new farmer success included:

1. New farmers in the Northeast use a variety of learning programs during the course of their learning and professional development, and they assess the value of a learning opportunity based on a perceived match between their personal mental model of farming and the mental model portrayed by an instructor and/or program.

2. As currently designed, some programs excel at supporting specific types of learning, yet no one type of learning program in the Northeast excels at supporting the development of all the types of knowledge and skills new farmers need to be successful.

3. All learning programs can enhance their effectiveness by supporting the development of all types of knowledge and skills new farmers need to be successful (i.e., domain-specific, meta-cognitive, and

tacit/strategic) using methods that incorporate problem solving, discovery learning, hands-on experience, peer learning, and articulation of mental models.

Recommendations

Key recommendations for new farmers, educational programs, and policy makers included:

1. Prospective and beginning farmers can complete a self-assessment of learning needs and interests and develop an "individual learning plan." They can then identify learning programs with characteristics that will meet their needs and interests. Table 2 can serve as a starting place for matching individual needs and interests with program characteristics.

2. Learning programs with complementary characteristics can form formal or informal alliances or partnerships to offer more balanced and comprehensive learning experiences for new farmers. For example, complementary programs for individuals entering farming as a first career include youth programs, a 4-year college degree program, and an apprenticeship program. Complementary programs for individuals entering farming as a second career or beginning farmers with no farming background include cooperative extension services, organization-sponsored workshops and conferences, and farmer-to-farmer programs.

3. Policy can support learning programs and other service providers in (a) completing self-assessments of resources they have or need to promote learners' development of all the types of knowledge and skills new farmers need to be successful and to develop a plan to enhance their resources in identified areas, (b) testing out or adopting more problem-based curriculum and designing curricula around application of content to solve genuine problems, and (c) continuing professional development of instructors and service providers to maximize their effectiveness in facilitating new farmer learning.

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For more information about this study's methods, results, recommendations, and references please contact Alexandra (Sandy) Bell at the University of Connecticut (sandy.bell@uconn.edu).

Table1. Study Phases, Research Questions, and Methods

Phase	Research Questions	Methods
One Establish criteria on which to evaluate the effectiveness of learning programs by finding out what makes new farmers successful and what types of learning relate to their success.	RQ1 What is the nature of proficiency, or "know how," among successful new farmers in the Northeast? RQ2 What activities help successful new farmers develop proficiency? RQ3 How do successful new farmers engage in these activities?	Semi-structured on-farm interviews with 10 successful new farmers representing six different types of enterprises and five different states. Included completion of *Learning Activities Survey*. Written profiles of 17 "innovative" farmers from *The New American Farmer: Profiles of Agricultural Innovation* (Berton, 2001).
Two Find out how different types of learning programs help new farmers learn, and evaluate the extent to which each program type meets the criteria established in Phase One.	RQ4 How do different learning programs contribute to the development of new farmer proficiency?	Semi-structured on-site interviews with seven "exemplary" instructors of new farmers representing six different types of learning programs and five different states. Review of program marketing materials, curriculum materials, and student learning "artifacts." Review of publicly available materials from other programs. Transcript of web-based course for instructors (contributions of four participants).

Three Use the outcomes in Phases One and Two to make recommendations for facilitating learning that promotes new farmer success.	RQ5 What implications do the outcomes have for: a. Prospective and beginning farmers in their selection of learning programs? b. Service providers in supporting new farmer learning? c. Policy makers in making policy and resource allocation decisions to support new farmer learning?	Data analyses. Establish trustworthiness by data triangulation, peer debriefing, member checking, farmer advisor reviews of transcripts and interpretations, and review of current literature. Collaboration with other GNF researchers, service providers, and farmers.

Table 2. How Different Learning Programs contributed to the Development of New Farmer Proficiency (Phase Two)*

	College degree programs	Cooperative Extension Services	Appren-ticeship programs	Youth programs	Immigrant farmer programs	Farmer-to-Farmer programs
RQ1 Proficiency						
Domain-specific knowledge	**X**	**X**	**X**	**X**	**X**	**X**
Metacognitive skills	x	x	**X**	**X**	x	x
Tacit and Strategic knowledge	--	x	**X**	x	x	x
Mental model development, articulation, and organization	x	x	**X**	**X**	x	x
RQ2 Activities						
Discovery learning/ problem solving	x	x	**X**	**X**	**X**	**X**
Activating events	x	x	x	x	x	x
RQ3 How to Engage in Activities						
On-farm experience	x	x	**X**	x	**X**	x
Self-directed informal learning with others	x	x	x	x	x	**X**
Other farmers or peers	--	x	**X**	x	**X**	**X**
Experts	**X**	**X**	x	**X**	**X**	**X**
Consumers	--	--	x	x	x	x
Other-directed formal education	**X**	**X**	x	x	x	--

X = Was a defining characteristic of this type of program
x = Was a secondary characteristic of this type of program
-- = Was rarely a feature of this type of program
* The characteristics indicated in the grid are based on an overall assessment of data collected during Phase Two of the study. The researchers acknowledge that variability exists in the Northeast among programs in each category, and that the profile of characteristics for a specific program may be different from the overall profile indicated in the grid. Additionally, an individual farmer's perceptions of the characteristics of a program in which he or she was involved may be different from the profile indicated in the grid. Program representatives can use the grid as a guide for self-assessment and program development, and new farmers can use the grid as a guide for identifying attributes of program types that may match individual learning needs and interests.

Adding Value to Outreach Activities

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Introduction

Cooperative Extension advisors and other educators who work directly with farmers are acutely aware of the mounting pressures on small-scale farmers as agriculture is increasingly consolidated. They demonstrate their personal commitment to Cooperative Extension's mission in agriculture, in which "research and educational programs help individuals learn new ways to produce income through alternative enterprises, improved marketing strategies, and management skills and help farmers and ranchers improve productivity through resource management, controlling crop pests, soil testing, livestock production practices, and marketing" (U.S. Dept of Agriculture, ¶ 16).

Educators often define their responsibility to help farmers learn as a matter of presenting information and sound advice, and they are dedicated to providing accurate and current research-based information. In fact, farmers' success depends not only on getting information, but on their skillful application, or proficiency, in using new information. Agriculture professionals can increase the likelihood that farmers will apply new information by designing and conducting education and outreach activities in keeping with how farmers learn and develop proficiency. We call such activities "value-added education."

This paper is designed to provide background information to supplement active learning elements of the workshop "Adding Value to Outreach Activities." Ideas and references are drawn from research and theory of adult learning and workplace learning, and from our study of proficiency and its development among small-scale farmers, which was supported by a USDA grant to the New England Small Farm Institute for the *Growing New Farmers* project. (Eckert, 2003; Bell & Eckert, 2005).

The study that informs this workshop and paper was conducted in 2002-2003. Ten small-scale farmers throughout the northeastern United States were interviewed and surveyed about their knowledge, skills, and learning. An additional 75 beginning farmers were surveyed about learning experiences they perceived to be most beneficial to their professional development, and 17 profiles of small-scale farming operations throughout the U.S. were analyzed to check and extend the interview themes and survey findings. Findings from this exploratory study concerned the nature of proficiency among small-scale farmers, how farmers develop proficiency, and the formal education and informal learning activities that contribute to their learning.

Proficiency and its Development

The nature of proficiency. Individual proficiency, defined as the skillful application of knowledge (Sheckley, 2002), is comprised of domain-specific knowledge, tacit knowledge, and metacognitive skills. Domain-specific knowledge is factual knowledge and information, the kind of information

most frequently presented in education and outreach activities. Tacit knowledge is known but not amenable to articulation or explanation; for example, a farmer who "just knows" when an animal is ill and what is wrong demonstrates tacit knowledge. Metacognitive skills refer to an individual's ability to plan, monitor, and evaluate actions, and transfer knowledge and skills appropriately and effectively to new situations.

This knowledge and skills is self-organized in that individuals develop, usually at a nonconscious level, their own way of making sense of what they know and how they apply their knowledge. Farmers use mental models to self-organize their knowledge and skills, and to guide learning, practice, and problem solving. The mental model is an individual "mental map" or set of assumptions about farming that includes the individual's values and beliefs about the ideal and the actual domain of farming; the role and relative importance of values, beliefs, knowledge, and skills; and ways of processing information and applying skills to learn and solve problems (Eckert & Bell, 2005). For example, even among operations of the same type we found farmers with different mental models of farming that directed their farming practices (see Table 1).

The development of proficiency. Farmers in our sample develop proficiency through discovery learning and problem-solving. Discovery learning refers to learning that occurs through trial-and-error as well as other activities conducted with the goal of mastering a skill such as learning to use some equipment. Trial-and-error was a significant source of learning for the farmers in the study. Problem-solving differs from discovery learning in that it is undertaken in response to a problem, while discovery learning can be unintentional and incidental. Discovery learning and problem solving tend to support and build upon an existing mental model; however, occasionally a powerful "activating event" causes farmers to question or even transform their mental models, or parts of their mental models. In some cases, only a threat such as that of the farm's failure is a powerful enough activating event to cause a farmer to examine and change her or his mental model.

Discovery learning and problem solving occur within "ecologies"—i.e., the totality of interactions between the farmer and his or her environments; the farm itself, family and others on the farm, and other farmers, experts, and often consumers. Feedback and advice from experts and others play a role in the development of proficiency, but that role is not simple or straightforward. While the environment shapes the individual, in our study we found that through self-organization, the farmer also shapes her or his environment. Farmers who were interviewed discussed how informal discussions with farmers from other farms played a role in the development of proficiency. Coherence of mental models between the individual and the learning environment—in this case, workshops, conferences, and peers—contributes to individuals' formal and informal learning from others in their ecologies. Farmers in the study who were involved in direct marketing tended to learn from their customers, in some cases even involving them in their operations; for example, explicitly involving CSA members in recruitment of new members.

Research on learning in work and school environments suggests that feedback is an important element of learning, and that autonomy support on the part of the person giving feedback is important to how the feedback is received and used. Support for autonomy generally takes the form of suggesting, advising, or presenting options rather than framing feedback in directive terms such as, "In order to succeed, you must do

this." Among farmers in our sample, the self-determination of the farmer was the salient element of whether and how feedback was used. Farmers chose whether and how to implement feedback from experts based on their assessment of its usefulness and fit with their mental model. All of the farmers using sustainable practices talked about learning from communication with consumers; neither of the conventional farmers mentioned communication with consumers as part of their ecology. Self-determination on the part of the farmer is a strong factor in learning with and from others.

The farm itself is an important part of an ecology that supports the development of proficiency. Research reviewed for this study did not specifically address the role of the physical environment in the development of proficiency. In this study, most farmers in the sample noted the importance of learning from the unique environment of each farm. Their perceptions of the uniqueness of their own farms may have been one of the factors affecting the importance of self-determination and of self-organization for farmers.

To summarize, research findings on proficiency and its development in the workplace in general, and among farmers in particular, indicate that each farmer develops proficiency within an individual mental model that serves as a self-organizing mechanism for domain-specific knowledge, tacit knowledge, and metacognitive skills. Further, the mental model serves as a filter for experience, further learning, and transfer or application of knowledge and skills to new situations. The mental model is maintained and refined through discovery learning and problem solving. The mental model is sometimes revealed and even transformed as a result of powerful experiences we call activating events, events that challenge some previously unquestioned aspect of the mental model. Farmers develop proficiency through their activities within an ecology; that is, the physical environment of their farms and interactions with family members, peers, experts, and sometimes consumers. These findings, taken within the context of adult learning theory and best practices in general, point to several strategies that agricultural educators can use to support the development of proficiency among the farmers with whom they work. We consider that these strategies add value to outreach and other learning-oriented activities.

Some Strategies for Enhancing Learning and Adding Value to Education and Outreach Activities

- Trigger awareness of mental models. Early in the workshop, find out what background knowledge, beliefs, and interests your learners bring to the workshop or training, and use that information to tailor your presentation or activities. You might ask if there is a specific problem they hope to solve by attending the workshop and use that knowledge to tailor your presentation or examples to their needs.
- Maximize learning with and from others in the environment. Allow time during the workshop or training for people to think, discuss, add to, and plan how to use the information you're providing.
- Provide opportunities for discovery learning and problem solving. Whenever possible, make your workshop or training a "hands-on" activity, and involve everyone. When a single person is the hands-on demonstrator, that person is the only one who gets the full value of the activity. To make sure people can do what you're teaching; have them actually do it, with guidance and feedback from you.

- Provide more opportunities for discovery learning, problem solving, and learning from others in the ecology. Get your learners involved. Have them critique the information you present, have them discuss it with each other and with you, have them identify the barriers to applying the information and see if they can come up with solutions.
- Respect your learners' autonomy. Avoid absolutes and one-size-fits-all answers. Any time you tell someone they "must" do something in order to be successful, you undermine their sense of power and autonomy.
- Enhance metacognitive skills by helping learners monitor and evaluate what they have learned and plan their next steps. Near the end of the session, pass out index cards and ask learners to answer one of these questions, then collect the cards and address common questions:
  - What is the most important thing you learned from this session?
  - What is one point that is still unclear, or a question that was left unanswered?
  - What could you do differently on your farm after this session?
- Provide opportunities to transfer and apply what has been learned to the unique environment of the farm. Follow up, or give people the opportunity to follow up themselves. If the presenter or trainer will not be available after the workshop, provide another contact person who can help, or have those learners who are willing to exchange contact information so they can help each other.

Educators who can incorporate one or more of these suggestions might be surprised at the positive results they get by making information more user-friendly and applicable—packaging, marketing, and delivering information to farmers in ways that they can use really does "add value" to workshops and trainings.

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Table 1. Comparison of Mental Models among Three Dairy Farmers

Name	Description of operation	Focal point(s) of mental model	Activities in keeping with mental model
Joe	300-cow dairy herd, goal is to grow to 1000-cows	Success means becoming a "top dairy" by increasing herd size and meeting industry standards.	Developing partnership, evaluating decisions based on evidence, "being involved in the top percentage of the farming community."
Mary Doerr (Berton, 2001, pp. 17-19)	36-goat dairy herd, cheesemaking, pasture, "educational retreat" Bed & Breakfast, goal is to stay small and profitable through diversification	Success means, "creating balance," by running a holistic operation and earning higher prices with a lower level of production and direct marketing.	Scaling back dairy and cheesemaking operation, retailing instead of wholesaling, diversifying farm activities
Gordon and Marion Jones (Berton, 2001, pp. 68-70)	65-cow dairy herd, pasture, goal is to stay small and maintain balance in keeping with quality family life	Success means maintaining commitment to quality family life and economic and environmental sustainability.	Developing and refining rotational grazing system, careful financial planning, hiring outside help

Sustainable Agriculture Research and Education: Supporting Diversity in American Agriculture

Jill S. Auburn
USDA-CSREES
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The Sustainable Agriculture Research and Education (SARE) program aims to advance knowledge and use of farming and ranching practices that improve profitability, environmental stewardship and quality of life. We do so primarily through competitive grants offered through four regions, hosted by land-grant universities under the direction of councils that include farmers and ranchers along with representatives from universities, government, agribusiness, and nonprofit organizations. We provide coordination at the national level, and also cull information from grants and other sources into national books, bulletins, and electronic resources through our national outreach arm, the Sustainable Agriculture Network (SAN). More details on the grants and information are at www.sare.org

Sustainability is important to farms of all sizes and types, though specific approaches to sustainability may vary considerably across different scales and setting. SARE is particularly relevant to small and medium-sized family farms, and to minority and limited-resource farmers, for several reasons, including its focus on ecologically-based rather than capital-intensive methods; its commitment to farmer-led innovation and farmer-to-farmer information exchange; and its interest in marketing (including direct marketing and ethnic markets) as well as production alternatives.

Some of the many SARE projects that have addressed minority, socially disadvantaged and limited-resource producers are featured in the SAN bulletin "Meeting the Diverse Needs of Limited-Resource Producers: An Educator's Guide" which is on the web at www.sare.org/publications/limited-resource.htm This guide includes projects where:

1. Small producers in Appalachian Ohio cultivated ginseng and other forest-farmed crops
2. Hmong and Cambodian farmers in Massachusetts learned about sustainable agriculture practices
3. Latino and Native American farmers in New Mexico grew organic wheat and milled and marketed flour
4. African American producers in rural Illinois marketed vegetables and chicken in Chicago
5. Small farmers in Kentucky learned production and marketing methods at monthly field days
6. Farm laborers in California gained production and marketing experience to be independent farmers
7. Low-income, primarily African American North Carolina farmers raised pigs on pasture
8. Tobacco growers in Appalachian Virginia and Tennessee switched to vegetables and value-added processing
9. Rosebud Sioux in South Dakota raised vegetables to improve diets and combat diabetes

Many of these projects were led by community-based nonprofit organizations, often in partnership with Cooperative Extension or USDA agencies. The bulletin details methods that have been found by these projects to be particularly effective in reaching limited-resource producers, including:

1. Identifying the real barriers to participation in programs.
2. Creating effective materials

designed with appropriate literacy levels in mind.
3. Involving constituents in developing programs, asking them what they need to know and how they like to learn.
4. Establishing trust by making commitments and honoring them.
5. Working together side-by-side.
6. Going one-on-one in training settings.
7. Demonstrating in field settings rather than just classrooms.
8. Tapping community leaders to run programs including paraprofessionals, volunteers and specially-trained people.

In recent years, the SARE regions and national office have taken a number of steps to better address diverse populations in American agriculture, including:

1. Southern SARE has established an Office of Minority Outreach which includes a full time professional staff position and support located at Fort Valley State University
2. Southern SARE is continuing its longstanding priority area in grant programs that benefit limited-resource farmers, and has established a new priority area of women in agriculture
3. Southern SARE provided travel scholarships to over 250 farmers mostly minority farmers to attend a regional sustainable agriculture meeting.
4. Western SARE completed its third year of targeted funding for small professional development grants with the Extension Indian Reservation Program.
5. Northeast SARE has funded several immigrant farming projects in recent years including the Northeast Network of Immigrant Farming Projects.
6. North Central SARE has offered funds through its professional development program specifically for working with underserved populations.
7. SARE's national Sustainable Agriculture Network (SAN) published a Spanish version of its popular bulletin on strategies for hog producers "Estrategias Economico-Ambientales en la Crianza de Cerdos" and has contracted with an outreach specialist to identify ways to reach Latino audiences.

SARE's leadership is eager to further develop its ability to reach minority and under-served audiences. Current efforts include attracting minority and under-served farmers and educators to the next SARE conference (in Oconomowoc, Wisconsin on August 15-17, 2006, see www.sare.org/ncrsare/2006_national_conference.htm) and increasing interactions with 1994 land-grant tribal colleges.

Sustaining Agriculture at the Community College Level

Robin Kohanowich
Central Carolina Community College
Pittsboro, North Carolina

What role can the community college play in the sustainable agriculture movement?
Community colleges have the ability to respond to the education and training needs of the local community. In order to foster the growth of the sustainable agriculture movement across the country, we ought to be engaging the community college resources.

The **Sustainable Farming Program at CCCC** grew out of a desire to address the needs of the sustainable farm community in Chatham and surrounding counties. The mission statement**:** A cooperative effort to encourage the development of profitable, environmentally sound, community-based farm enterprises

Current Features of the Sustainable Farming Program
An overview of where we are now:

- Associate Degree in Sustainable Agriculture
- Continuing Education Courses in many aspects of Sustainability
- On-campus, organic farm – the "Land Lab"

Associate Degree in Sustainable Agriculture (A.A.S.)
The curriculum, designed as a two-year program, includes classes in soil, plant and animal science, organic crop production, biological pest management, sustainable livestock management, building and mechanical skills and agricultural marketing. Additional studies focus on the entrepreneurial aspects of small farm ownership.

Credentialed Certificates in the curriculum program
Certificates focus on a specific aspect of production:

- Sustainable Agriculture Vegetable Production Certificate
- Sustainable Agriculture Certificate combines livestock and crop production
- Livestock Production Certificate
- Certificates are focused, providing students with technical information needed to begin farming. Often, Certificate students have earned a 4 year university degree.

Continuing Education Courses

- Flexible and responsive formatting
- Focused topics such as "Cut Flower Production", "Sustainable Poultry Production", "Raising Dairy Goats"
- Typically evening or late afternoon classes, structured to suit students with full-time occupations
- Inexpensive!
- Community members and students in the agriculture curriculum enroll in the variety of Continuing Education courses offered.

Land Lab component

- Practical application of coursework
- Used by curriculum and continuing education programs
- Work-study opportunities for students
- Community Support Agriculture Project serving faculty and students, provides a marketing experience for students

How we got here
A collaborative, grassroots effort was key to the successful development of the Sustainable Farming Program. That collaboration included farmers, extension agents, consumers, representatives of several sustainable agriculture focused on Non Governmental Agencies, CCCC Small Business and Continuing Education

personnel.

Collaborators develop the program mission…
A cooperative effort to encourage the development of profitable, environmentally sound, community-based farm enterprises

Certificate of Farm Stewardship
In 1997 CCCC began offering the initial credential in the area of sustainability. Students completed core coursework, a production concentration and an internship

The Sustainable Agriculture Curriculum Program development began in 2000
Selection of coursework was based on:

- experiences with the Continuing Education Certificate of Farm Stewardship
- Feedback from students
- Advisory group composed of farmers and educators who have been involved with the Program throughout it's development
- Other agriculture degree programs as models

Who are our students?
Degree Program students are typically:

- Over 25 years of age
- Have some prior college experience
- Most will be first generation farmers
- About 2/3rds of the students are female

Continuing Education students:

- Ages range from 20 something to 65 +
- Many mid-career folks have land and are looking for added income/ second career
- Often crossover from the degree program for specific enterprise focus

Program challenges

- Farming is generally entrepreneurial – community college programs are often job-training focused
- Fitting the farming calendar to the school calendar
- Finding suitable texts and teaching resources with a sustainable agriculture focus

Program Successes

- Some continuing education courses are in their 8th year and are still popular
- Curriculum program still building, Fall 2005 is our best semester for enrollment
- Several program graduates farm and sell produce at local markets, work in produce departments and in educational programs centered around agriculture

Programming and Support for Beginning Farmers

Kathryn Ruhf
New England Small Farm Institute
Belchertown, Massachusetts
John Mitchell
Heirloom Harvest Community Farm
Westborough, Massachusetts

The problem. Perhaps you have heard the startling statistics. There are twice as many farmers in the U.S. over the age of 65 as under 35. Twice as many farmers retire every year than are getting started in farming and ranching. Over 400 million acres of farmland will change hands in the next twenty years. At stake are our productive farmlands, bucolic landscapes, local economies and food systems. In the face of these daunting trends, the question is: who will farm?

Young farmers used to learn the trade at their parents' knees, or from relatives. Traditionally, farm succession included the passing on of skills and knowledge as well as the farm business. Land grant institutions and vocational high schools and colleges taught agricultural skills much more extensively. Extension agents traveled from farm to farm, providing one-on-one technical assistance and spreading the latest farm techniques and news. Flourishing farm organizations such as Future Farmers of America and the Grange nurtured new farmers into a vital community where sharing of resources and advice was standard. Today, it is much harder for next generation farmers to acquire contemporary farming technical and business skills. Much of the traditional "support infrastructure" -- suppliers and services -- has vanished.

Nonetheless, there are people who want to farm. Calls come in every day to the New England Small Farm Institute and other farmer service organizations from people who want to pursue a career of some sort in production agriculture. Many creative, brave, and committed people want to get into or have begun farming. But traditional sources of information and learning don't meet the needs of today's new farmers. Yesterday's new farmers were the sons of established farmers -- heirs to their land, their knowledge, and their support networks. Today they are from a wide range of backgrounds - men and women in their twenties and early thirties who were raised in the suburbs, immigrants from Asia, Latin America, and the Caribbean where agricultural traditions remain strong, people who grew up on farms and hope to take over the family farm or strike out on their own, and mid-life career changers and early retirees including high school teachers, carpenters, attorneys, military officers. Their enterprises and marketing strategies run the gamut from traditional commodities to organic produce, and grassfed livestock, for example.

These next-generation farmers may be interested in owning and operating their own farms, creating a farm business on leased or rented farm land, or becoming salaried employees of farm businesses or agricultural education centers. They may have adequate capital, but no practical farming experience. They may have great agricultural skills, but poor English, or poor credit. Each of today's new farmers brings a unique set of skills and needs to his or her farming career, and requires support and services that are responsive to these differences.

What is a "new farmer"? First, for this discussion, ranchers are included in our use of the term farmer. We begin with some basic terms and definitions.

- According to the US Department of Agriculture (USDA), a **beginning farmer** is one who has operated a farm for ten years or less. This is the definition used for USDA's Beginning Farmer Loan Programs. Some loan programs require that a beginning farmer also have at least three years of farming experience.

- A **young farmer** is a farmer under the age of 35. The Farm Bureau and the Farm Credit System have young farmer programs. A young farmer may be working with the older generation on the family farm.

- **Next-generation farmer** is another term used to describe young people who will be the next generation of farmers. Sometimes – but not always -- the term specifically refers to the next generation of the family to take over an existing farm.

- New farmer and **small farmer** agendas are sometimes confused in policy discussions. New farmers are not defined by scale or volume or income, but by their position on the farm development continuum. At the same time, many new farmers start small, have lower revenues, and farm part-time.

The project. In 1998, several Northeast organizations (FarmNet/Cornell University, Pennsylvania Farm Link, Rutgers University, and the New England Small Farm Institute) came together in a project called the Northeast New Farmer Network (NENFN). Their goal was to stimulate regional thinking and new programming to improve the number and success of new farmers in the region. NENFN was followed by the Growing New Farmers Project (GNF), a four-year initiative funded by USDA.

GNF was conceived as a comprehensive regional initiative to provide future generations of Northeast farmers with the support and expertise they need to succeed. GNF brought together service providers from across the Northeast who committed to working with and advocating for new farmers from Maine to West Virginia.

GNF addressed the need for a strong, responsive service network for new farmers on many fronts: by funding and promoting new programs, generating new services and information, and creating a supportive, well-connected community of service providers to welcome, support, and meet the needs of the Northeast's new farmers. GNF was a special project of the New England Small Farm Institute, the grant recipient. GNF built a network of service providers to raise awareness about new farmer needs, spread the word about effective programs, and encourage collaboration and effective referral. Two hundred and fourteen organizations and agencies signed onto the GNF Service Provider Consortium, one of the largest regional agricultural service networks in the country. Consortium members participated in networking, professional trainings, electronic discussions, policy development, and regional conferences. They continue to share tools, information, resources and insights, and work together on advocacy and services for new farmers. GNF also sponsored the development of a cornucopia of new programs and resources for beginning farmers in our region.

GNF developed an innovative, interactive website for new farmers and service providers (www.growingnewfarmers.org). The "one-stop" site serves as an information clearinghouse and virtual meeting place for new farmers and their service providers to connect with one and another exchange ideas. Features include: a searchable directory of programs, resources and organizations aimed at or helpful to new farmers; on-line learning, where farmers and service providers can create, teach, and take on-line courses; and publications, links, and other useful information for and about Northeast new farmers. GNF also sponsored two research studies – one on adult learning methods most successful

with new farmer audiences, and one examining the decision-making of new farmers.

A typology of new farmers. We also advanced a framework for understanding and working with new farmers. From focus groups, surveys and direct feedback, we posited a typology of new farmers:

Prospective farmers have not yet begun to farm. There are three phases of prospective farmers:

- "Recruits" might consider a career in production agriculture, for example, students in vo-ag high schools.
- "Explorers" are investigating a farming future, and may be gathering information, but have not yet made a commitment to farming.
- "Planners" have made a choice to pursue some sort of commercial production agriculture, but are not actually farming yet.

Beginning farmers also fall into several categories:

- "Start-ups" have been farming for three years or less.
- "Restrategizing" farmers, typically in their fourth to seventh years, are making adjustments to their farming enterprises. These include changes in farm size, crops, enterprise type, market outlet, and land tenure.
- "Establishing" farmers are stabilizing their farm enterprise in the final years of their beginning farmer phase.

This expanded concept of the "**new farmer**" goes beyond the traditional definition provided by USDA. It encourages regional service providers to develop a more comprehensive understanding of their new farmer "customers", and to develop more carefully targeted support services to meet their different needs. People who are exploring the possibility of farming, and those who are planning to farm are our future; they need special attention and services to nurture them along the farming career path.

What do new farmers need? GNF focused on four categories identified as major barriers for new farmers:

- Access to knowledge, information and training
- Access to land
- Access to financial resources
- Access to markets

Beyond these fundamental barriers, new farmers often experience inadequate social supports from family, community, and existing farmer and service networks. That is why our approach – to create and sustain a community of new and established farmers and providers – was critical.

We conducted an inventory of all the programs and services for new farmers in our twelve- state region. We identified many programming gaps and we reached an important conclusion: to serve new farmers most effectively, programs must be targeted specifically to the new farmer audience. Targeted programs are specifically developed for and offered to new farmers, and sometimes more particularly to certain kinds of new farmers. Workshops on farm start-up or finding land are considered targeted. Relevant programs and services are not specifically designed for new farmers. Many general programs -- for example, a workshop on crop rotation -- may be relevant and valuable to new farmers. A general farm business planning course, on the other hand, will not be very useful to a start-up farmer with no financial or market history. It is clear that more targeted programs are necessary to meet new farmers' particular needs.

What else is being done help new farmers? While it might seem obvious that next-generation farmers need support, there is no history of attention to new farmers and ranchers by the federal and most state governments. For the first time in its 140-year history, the USDA has a Beginning Farmer and Rancher Development Program on the books. Authorized in the 2002 federal Farm Bill, this grant program is designed to help

develop a wide range of eligible programs for beginning farmers. This achievement is the result of over a decade of work by a national network of beginning farmer advocates. This is good news. The bad news is that there is no money attached to the program; the program must be funded by Congress every year in its annual appropriations process. New farmer advocates must persuade the appropriators to fund this important program. Perhaps we will fare better in the future. Perhaps more attention will be focused on new farmers in the next Farm Bill.

The USDA Farm Service Agency administers several beginning farmer loan programs which are critically important. The Farm Credit System also has a Young, Beginning and Small Farmer program, and the Farm Bureau and Grange have young and beginning farmer programs. And while many vocational agriculture schools are actively discouraging students from entering production agriculture, FFA and 4-H are shining lights of opportunity for aspiring farmers and ranchers. Across the country, there are about 15 "farm link" programs that connect farm seekers with exiting farmers. Many of these programs also provide a wide range of other services for new farmers, including start-up business planning, skill-based curriculum development, technical assistance and referral, as well as succession and transfer planning for exiting farm families. After all, the full circle of farming career opportunity has to include successfully passing on the farm – the land and the business – to the next generation, whether a family member or someone outside the family.

New farmers will be the stewards of our land and the producers of our food and fiber. New farmers will contribute to rural economies; new farmers will invest in land conservation; new farmers will innovate, take risks, and be entrepreneurial in order to thrive. Their survival depends on the resources provided by a complex and engaged support network. The future is theirs, and they depend on us.

Expand Your Horizons:
Small Business Innovation Research

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Introduction

The Small Business Innovation Research (SBIR) program was established in 1983 as a technology transfer program with the goal of moving technologies developed in university and government laboratories out into the commercial marketplace. The purpose of the SBIR program is to stimulate technological innovation in the private sector, strengthen the role of small businesses in meeting Federal research and development needs, increase private sector commercialization of innovations derived from USDA-supported research and development (R&D) efforts, and encourage participation by women-owned and socially and economically disadvantaged small business firms in technological innovation. Each Federal Agency with more than $100 million of extramural R&D is required to set aside 2.5% of these funds for an SBIR program. There are 11 Federal Agencies that participate in the SBIR program and they are the Dept. of Agriculture, Dept. of Commerce, Dept. of Defense, Dept. of Education, Dept. of Energy, Dept. of Homeland Security, Dept. of Health and Human Services/National Institutes of Health, Dept. of Transportation, Environmental Protection Agency, National Aeronautics and Space Administration, and National Science Foundation.

SBIR Program

Government-wide the SBIR budget exceeds $2 billion. The USDA SBIR program is one of the smaller SBIR programs and it had a budget in FY 2005 of $19.2 million. Eligibility is limited to U.S.-owned, for-profit, small business firms located in the United States. Single proprietorships, including farmers, are also eligible. The primary employment of the project director must be with the small business firm at the time of award and during the period of the grant award. Primary employment means that more than one-half of the project director's time is spent in the employ of the small business and it precludes full-time employment with another organization.

SBIR is a three phase program. Applicant small business firms initially apply for a Phase I grant that is usually limited to 6-8 months and to $70,000 to $100,000, depending upon the Federal Agency. The purpose of Phase I is to determine the technical feasibility of the idea contained in the proposal. Phase I grant winners are eligible to apply for a Phase II grant that usually is made for a period of 24 months and provides $225,000 to $750,000, depending upon the Federal Agency. Only Phase I winners are eligible to submit Phase II proposals. Phase II is the principal research and development effort and typically involves moving the technology from the proof-of-concept stage to the prototype or pre-commercialization stage. Phase III is the stage when technologies developed during Phase I and Phase II are commercialized. There are no SBIR funds provided during Phase III. Instead, it is anticipated that the small business firm will be able to attract whatever additional funding it may require from the private sector or other non-SBIR Federal programs to achieve commercial success.

USDA SBIR Program

The USDA SBIR program awards grants in twelve broad topic areas. Applicants are free to propose any reasonable proposal that addresses an important problem covered by one of the topic areas and thus the ideas are investigator initiated.. Proposals are evaluated by a confidential

peer review system utilizing expert scientific reviewers drawn from universities or government laboratories who meet in Washington as a review panel to decide which proposals are most meritorious and deserve funding. In addition to the panel reviews, additional ad-hoc reviews are solicited from top scientists with expertise appropriate for each proposal who submit written reviews but do not travel to Washington to participate in the panel.

Research Topic Areas

The USDA SBIR program has a very broad focus. Research is supported in the following 12 topic areas: 1) Forests and Related Resources; 2) Plant Production and Protection; 3) Animal Production and Protection; 4) Air, Water and Soils; 5) Food Science and Nutrition; 6) Rural and Community Development; 7) Aquaculture; 8) Industrial Applications; 9) Marketing and Trade; 10) Wildlife; 11) Animal Waste Management, and 12) Small and Mid-Size Farms. In addition to the above topic areas, research is also encouraged that addresses issues of anti-bioterrorism, rural homeland security, and agriculturally-related manufacturing technology.

Small and Mid-Size Farm Topic Area

In FY 2006 the USDA SBIR program added a new research topic area on Small and Mid-Size Farms. The objective of the research area is to promote and improve the sustainability and profitability of small and mid-size farms and ranches (hereafter referred to as small farms). The vast majority of farms in this country are small and they play an important role in the agricultural sector. The viability and sustainability of small farms is important to the Nation's economy and to the stewardship of our biological and natural resources. Small farms are also critical to sustaining and strengthening the leadership and social fabric of rural communities and this topic area encourages projects that emphasize how their project would contribute to the well being of rural communities and institutions. In particular, applicants should emphasize how the results of their project would be disseminated to other small farmers and provide benefit to the small farm community. Emphasis is placed on the cultivation of alternative and specialty crops, production of specialty animal species, innovative ways to market these farm products, improvements in farm management and farm safety, more efficient use of natural resources in agriculture, and educational outreach efforts to small farmers.

Examples of appropriate subtopics for research proposals from small businesses include, but are not limited to the following:

(1) New Agricultural Enterprises - Efforts are needed to develop new agricultural enterprises that are small scale and focused on specialty farm products, both plant and animal, and on innovative ways to market these farm products through direct marketing, such as farmers markets or cooperatives where the financial return to the farmer is optimized, or through specialty market outlets that offer a higher financial return. Emphasis is encouraged on organic and natural foods, specialty animal products such as free-range poultry or natural beef, non-food specialty crops such as medicinal herbs, and value-added food and non-food products.
(2) Farm Management - Efforts are needed to develop tools and skills that are appropriate for small farms that will enhance the efficiency and profitability of small farms. New tools are also needed that will enhance farm safety. Development of new risk management tools to facilitate better planning is needed. Innovative ways to promote agro-tourism as a way to enhance farm profitability is encouraged.

(3) Natural Resources - Efforts are needed to develop farming methods scaled appropriately for small farms that are directed at more efficient use of natural resources. Particular emphasis is needed to develop sustainable farming practices.

(4) Educational Outreach - Efforts are

needed to develop new tools to ensure that new generations of small farmers have access to the information and resources they need to operate their small farms on a sustainable and profitable basis.

The USDA SBIR program supports a wide range of R&D projects focused on important problems facing American agriculture and rural development. The Small and Mid-Size Farm topic area supports R&D projects that have the potential to promote and improve the sustainability and profitability of small and mid-size farms. Innovative ideas on ways to achieve these goals are strongly encouraged.

Agricultural Wildcatters, Have They Hit A Gusher With Medicinal Plants?

Randy Beavers
Sleepy Hollow Farm
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Webster's Ninth New Collegiate Dictionary defines a wildcatter as "one who drills wells in the hope of finding oil in territory not known to be productive". Growers who produce medicinal plants often face many of the same challenges as traditional wildcatters. Unknown production potential or quality and markets which can, and often do, fluctuate wildly present significant risks. Therefore, to coin a phrase, I refer to these growers as agricultural wildcatters. Medicinal plant production is an area of agriculture which is just beginning to flourish and as such, requires a greater degree of technical knowledge to be successful. However, for those willing to learn the specialized techniques required to produce a high quality product, the rewards can be substantial.

Several factors combine to make medicinal plant production an attractive crop option, especially for small, limited resource growers. The market for medicinal plants has been traditionally supplied from wild collected sources. However, overcollection from the wild may have resulted in the decimation of many native medicinal plant populations. Current convention on International Trade in Endangered Species (CITES) regulations require certain listed herbs to have been cultivated for a specified number of years before they can be exported. This has resulted in many companies which produce herbal products no longer purchasing raw material which has not been cultivated with certified organic material receiving a premium price.

In addition, many medicinal plants can be produced on farmland not being used for other crops, such as forestland, and harvested before or after other regular crops. Finally, one criticism traditionally charged to natural herbal products is the lack of standard levels of biologically active materials from natural plants. Wild collected plants have no predictable mix of bioactive ingredients, therefore cultivation offers the opportunity to minimize this variation at the point of production.

One example of the potential offered to growers of medicinal plants is represented by Hydrastis canadensis (goldenseal), the primary crop at Sleepy Hollow Farm. Goldenseal is considered by many authorities to be one of the most popular medicinal herbs in the U.S. This popularity and the resultant increase in wild collection prompted the U.S. government to sponsor a resolution to place goldenseal on the CITES Appendix List II in 1997. Brokers generally pay less than $20 per pound for wild collected goldenseal while high quality, organically grown goldenseal can command a price of $100 per pound or more.

While there remains much work to be done in order to make medicinal plant production viable for a greater number of growers, we believe that the current trends toward increased government regulation of herbal product quality and the wild collection of medicinal plants coupled with increased consumer awareness of the origin of the source of the products they consume will effectively mandate the development of cultivated sources of high quality medicinal plants. Will this result in a boom for producers? The answer is still unknown but, for those willing to explore new territory and measure their success in parts per million rather than bushels per acre, the prospects of a gusher are getting more probable everyday.

USDA/CSREES National Research Initiative New Funding Opportunity: Agricultural Prosperity for Small and Medium-sized Farms

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The CSREES National Research Initiative (NRI) competitive programs in 2005 sponsored a new program to support research, education, and extension activities for small and medium-sized farms. This presentation will review the types of projects funded and opportunities for the 2006 funding initiative. Integrated research, education and extension projects were awarded to 15 grants for a total of $5 million in 2005. These projects were eligible for up to $500,000 for 2-4 years of support. Approximately $5 million will be available for awards in 2006.

Sustaining the health and security of U.S. agriculture requires improved profitability and long-term prosperity for producers and rural communities, with particular attention to the viability and competitiveness of small and medium-sized operations. Prosperous small farms and rural communities are a function of balance between economic, social, environmental and biological factors. Although prior research has been conducted on each of these factors, little is known about the interplay between the factors, as related to small farms and rural economic development.

Small and medium-sized farms are challenged by limited economic opportunities and increasing concerns about environmental quality, as indicated by their low value of agricultural products sold, decreasing share of the food dollar, and the perceived trade-off between agricultural sustainability and economic viability. In recent years, these challenges have been magnified by changes in market conditions caused by tremendous demographic shifts, new global markets and vertical integration, and the increasing competition for farm land for non-agricultural uses. Therefore, the purpose of this program is to foster interdisciplinary studies to improve our understanding of the interactions between the economic and environmental components important to the long-term viability, competitiveness and efficiency of small and medium-sized farms (including social, biological and other components, if necessary). These include small and medium-sized dairy, livestock, crop and other commodity operations. While small and medium-sized farms account for less than 25 percent of the value of all agricultural products sold in the U.S., the long-term viability of these farms is critical to the prosperity of rural people and places as these farms account for approximately 92 percent of all farms in the U.S. Therefore, the program will also foster interdisciplinary studies to enhance income accruing to small and medium-sized farms through value-added activities and in turn, their contribution to rural prosperity.

The purpose of the Agricultural Prosperity for Small and Medium-sized Farms program is to foster interdisciplinary studies and improve our understanding of the interactions between the economic, social, biological and environmental components important to small farms and rural economic development. Applicants are expected to propose hypotheses that are testable and to use quantitative approaches. Projects should address small farms, rural agricultural communities, or both small farms and rural communities when interrelated.

Concurrent Workshops

Getting Grants: Ten Things You Gotta Do To Get Money

Dr. Mark R. Bailey
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Foreword: The information presented in this presentation was prepared to assist those who have not had much experience and/or success in preparing and submitting proposals to various competitive programs, be they government sponsored, non-governmental organization sponsored, or other entities who may sponsor such programs. The presentation is generic in the sense that it lays out a number of principles, recommendations and "hints" that are based on common sense and over 20 years of experience in research, research administration, integrated program leadership and extension competitive programs. The hints and recommendations are useful regardless of the type of grant program being considered or sponsoring organization. It goes without saying that there is no guarantee of successfully submitting and receiving a grant if all the principles, hints and suggestions are followed, but at the same time, the information presented should not be cause for any proposal to be rejected. MRB

Ten Things You Gotta Do To Get Money:
The following recommendations provide a logical approach to organize one's activities and thoughts while going about the process of preparing a proposal for submission to a grant program.

1. Find the program right for you and your idea
2. Become a "student" of the RFA/ RFP/NOFA (Request for applications; Request for Proposals; Notice of Funds Availability)
3. Develop a calendar of key proposal preparation and submission events
4. Understand criteria used to evaluate your proposal
5. Write the proposal logically and clearly
6. Develop a plan by which you will evaluate your project against expected outcomes
7. Prepare budget with strong justification-a budget narrative
8. Know about the review process and your reviewers
9. Fill out forms completely and correctly
10. Schedule enough time when you are "finished" for others to provide an honest and objective critique and for administrative requirements; Send to arrive on time

General Rules of the Game: Before getting into the things you need to do to get money, it is important that anyone contemplating preparing and submitting a proposal ensure that their idea incorporated the following before they begin preparing a proposal. Can you meet the following tests with regard to your proposal?

Is your idea **appropriate** to the program to which you wish to apply to?
Is your idea **relevant** to the purposes of the funding program?
Are you and your organization **eligible** to even apply (some programs are limited to particular target groups or organizations?
Have you **obtained and read** program materials (if not, how will you answer these questions)?
Have in your mind an **exciting and informative** project description for the program manager and reviewers
Are you **aware** of what forms and other paperwork is required as part of your proposal?
Do you know what the **deadlines**

and time frames are of the program? Can you get everything done in time?
Do you feel **comfortable** calling the program manager or director with questions?

Finding the Right Program -- WHICH PROGRAM?

Many Federal and State agencies and other organizations may have an array of various programs? The National Science Foundation, the National Institutes of Health, and the National Research Initiative have numerous programs they sponsor. The Cooperative State Research, Education and Extension Service also has a number of other programs that are not research based, such as the Community Food Projects Program, The agricultural risk Management education Program, the SARE Program, and others. The US Department of Agriculture with its many agencies has many funding opportunities. Does your idea fit the aim of the program you are thinking about applying to?

- National Research Initiative (NRI-CSREES)
- Federal-State Marketing Improvement Program (FSMIP-AMS)
- Capacity Building (CSREES Higher Education Programs)
- Community Food Projects (CSREES)
- Challenge Grants (CSREES Higher Education Programs)
- Integrated Programs (CSREES-research, extension or combinations thereof)
- Small Business Innovation Research Program (Government-wide, including CSREES)
- Outreach and Assistance for Socially Disadvantaged Farmers and Ranchers (CSREES-often referred to as the "2501 Program")
- Multicultural Scholars Program (CSREES-Higher Education Programs)
- Agricultural Risk Management Education Program (CSREES and the Risk Management Agency, USDA)

Finding the Right Program for You and Your Idea

How do you find out about all of these programs?

- Network - talk to friends, , colleagues, university folks- Ask them what they know about available funding programs and whether your idea fits
- Examine some RFA's even if they are a year or two old…programs rarely change significantly year-to-year – Does your idea fit somewhere?
- When you think you've found the right program for your idea or project, get the most recent Request for Applications
- In the RFA – Check on eligibility…BUT not totally critical; doesn't matter who gets the grant as long as you get some bucks, right? Partnering goes a long way here and actually many programs have partnerships and collaborators as important parts of their evaluation criteria; If you or your organization are not eligible, then work with someone who is eligible
- Outline main purposes of the program-determine where your idea fits in; Mainstream? Or is it on the fringe? This increases the challenges!
- Find out where the abstracts of previously funded projects are…great source of information (most are now on line…somewhere)
- Call the program contact and discuss your ideas relative to the program in which you think it fits
- If your idea is covered but does not appear mainstream, you've got a big challenge-competition is tough and tight, and being on the periphery of a central theme or major program goal does not help you
- Eligibility-do not waist your time if you are not eligible? Your proposal will be sent back or trashed. Call the program contact if you are not

sure.
Deadline Dates: receive date vs. transmittal (postmark) date (most programs now use receipt dates).
If your proposal is late without any mitigating circumstances, it will be sent back or trashed.
Indirect Costs - allowed? Limits? Talk to your office of sponsored programs or cal the program contact and discuss.
Is a Funding Match Required? Critical…if a match is required and you have none, guess what?
Major Goal of Purpose(s) of the Program – will you be addressing it?

Become a "student" of the RFA

The Request for Applications (RFA; Notice of Funds Availability – NOFA; Request for Proposals - RFP) is the key document that provides all the information you need to develop, organize, and prepare your proposal. Most include a format outline as well as evaluation criteria.

You gotta understand the main purposes of the program BEFORE you begin your proposal – that is usually upfront in the RFA!
Does your idea fit within the main purposes?
Do not waste time applying to the wrong program…square pegs do not fit in round holes
Never hesitate to call the program contact-there is always a point of contact in every RFA; if the program contact says your idea fits, then it is up to you to properly represent that idea in your proposal
Once you are pretty sure your idea fits, then the fun begins, the drudgery, the toil, the work, the boredom, the challenge!!!!
The RFA holds the info you need to prepare a competitive proposal
Directions, outline, evaluation criteria, deadlines
Know the RFA forward and backward…if something is confusing, who do you call? The program contact
Most RFAs contain directions as to how to prepare a proposal, often times including a topical outline
Use this topical outline also for your Table of Contents format
If no outline, look at the evaluation criteria, for these often give good hints as to what folks are looking for and their relative importance
By becoming a student of the RFA you become seeped with understanding the key components of the program – its goals and areas of emphasis
Your proposal will (better) reflect the key components in a logical, coherent way
Reviewers first read the proposal summary to see if the proposal fits within the program; so your project summary is one of the most important paragraph(s) you will write

A Calendar of Events is your Friend

A calendar can help you organize your work schedule. Note the following:

Deadlines ARE NOT MADE to be broken
A deadline is a deadline is a deadline-no flexibility here!
"Back plan" two-three weeks from the deadline noted in the RFA - that is when your proposal writing needs to be done
Establish a non-revocable "I am finished" deadlines for various sections of your proposal
Allow 2-3 weeks for review by calloused, insensitive experts who could care less whether they hurt your feelings; also allow time for administrative review at your university or organization
Develop a detailed outline of your proposal and establish time periods for each major section; crosscheck your outline with RFA instructions and evaluation criteria
If you hurry a proposal, reviewers will see this and will raise questions about your scheduling and organizational skills…if they raise

questions on these issues, they will not be kind

Criteria Used by Reviewers – Must Know

Nearly all RFAs contain the criteria by which proposals will be judged. It is imperative that you understand and are familiar with the criteria, and their weights if they are so noted.

- RFA's ordinarily contain a section on the criteria that will be used by reviewers to evaluate your proposal; if you don't see such criteria, call the program contact
- Understand these criteria BEFORE you begin preparing your proposal
- Write them down; put them on mirrors, windows, desktops…get 'em down good-these are a major guide for you
- Criteria often come with "weights" or percentages, or some other means of measure
- Provides you with great understanding as to where you really need to put your efforts
- Put yourself in the shoes of a reviewer, contemplating the evaluation criteria, and then reading your proposal

Writing the Proposal – Logic and Clarity

Easy to say, hard to do. This is hard and difficult work. Every word counts; Each sentence counts.

- Most Important 250 words (or other limitations as provided by the RFA you are working with) in the entire proposal: THE SUMMARY or ABSTRACT
- The summary or abstract captures the essence of your proposal – must be clear, concise, well articulated and logical – usually limited to half of what you "need" to write!
- Write the summary after everything else is completed; make sure it does what you need it to do – EXCITE YOUR REVIEWERS!!!!
- The summary is often the only item read by all reviewers
- The summary sets the tone for your proposal
- Organize the proposals around the RFA provided outline or evaluation criteria whichever is most logical
- Reviewers will at least know you read the RFA (in some proposal evaluation panels or sessions, the author has heard reviewers wonder out loud as to whether the applicant had actually read the RFA)
- Following the prescribed format makes reviewers happy and more generous: an easier to read proposal when compared to others gives the former a significant advantage (assuming of course the idea has relevance and legitimacy)
- Making reviewers work hard is like shooting one's own foot…and that hurts!

REMEMBER THIS:

You make reviewers work hard by not following directions and formats and that gives rise to one of many of Bailey's idioms: **The degree to which you make a reviewer work hard decreases the probability of success exponentially**

Be logical in proposal construction

- Your background description establishes the need for your project and that it fits the program
- The need can be readily identified with the purposes of the program…make sure you tell them that in the proposal – Be Explicit

Follow Directions; Follow Directions –it is amazing how many proposals do NOT follow directions!

Have your proposal flow logically

- Goals
- Objectives
- Methodologies with associated timelines
- Expected Outcomes and Impacts
- Evaluation-how you will measure expected outcomes

Your proposal's mission is to make sure reviewers are convinced that:

- The proposal **goal(s)** reflect major purposes of programs
- That if you accomplish your stated **objectives**, you will attain the goal(s)
- That if **methodology** is followed, objectives will be attained
- That the **expected results** are directly related to overall goals and purposes of program
- That you can do the job!

Reviewers must be convinced that:

- The evaluation plan you present will keep you on track and will identify problems that are subject to solutions
- That the probability of your project success is acceptable – reviews think the project can be successfully accomplished, thereby making it a contributor to the programs purposes and goals
- That the proposal NEEDS to be FUNDED (relative to other proposals)
- And another Bailey idiom: If, through your proposal you create a reviewer champion(s), the probability of success increases exponentially!!!

The Budget and Narrative

Many proposal submitters have a hard time with this part of a proposal. Budgets vary by type of proposal, region of the country the proposal comes from, and myriad other variables and factors. The test usually followed is the "test of reasonableness!" Is your budget, given what you propose to do, and the people and suppl9ies, travel, etc., included, is it reasonable? Many programs do not use budgets as an evaluation factor, but a poorly justified budget or an inadequate narrative raises questions that go far beyond the budget per se. So look at previous funded projects…what did they get? Is your budget over that maximum specified in the RFA? Often your office of sponsored programs or the equivalent will have some sound advice!

- Use the timelines to compute amount of time various people will spend in carrying out the project (person months, for example)
- While usually not part of the evaluation, unreasonable budgets kill proposals for they create skeptics within reviewer ranks
- Keep budgets within guidelines as provided in the RFA; budgets are judged on the degree of reasonableness given the proposed amount of work
- Understand what you are allowed to spend on and what you are not allowed to spend on
- Use the budget form provided and then provide detailed justification for each line item in a budget narrative; FOLLOW the budget line order found on the form (do not make reviewers work hard)
- The Narrative, or justification, should spell out how you compute each line item.
- Salary: hourly rate times number of hours times days; or on a monthly basis
  - Provide percentage of benefits if not computed in indirect costs
  - Make sure the numbers add up
  - Talk to program contact about summer salaries – are they allowed?
  - Put yourself in the shoes of a reviewer who has read about 25 proposals and their accompanying budgets

Understand the Review Process - Who are the Reviewers

In various competitive programs, proposals may be reviewed using many different techniques. CSREES' National Research Initiative, for example, as does the National Science Foundation and the National Institutes of Health use peer

panles to review proposals. In programs where relatively few proposals are received, the program may use a system of merit reviews, in house with usually an independent, out-of-house reviewer or two. It is important to understand how your proposal will be reviewed.

- Reviewers depending on programs are provided guidance on evaluating proposals using evaluation criteria as published in the RFA – most times, you have what the reviewers have
- Reviewers discuss each proposal-strengths, weakness, qualifications, probability of success, etc.
- Remember, you can fool some of the people some times, but you can't fool reviewers!!!!
- Reviewers give individual scores and then when they meet as a group, they discuss the proposal and arrive at a "consensus score"
- Reviewers are looking for proposals they can champion and those they can dismiss-make it hard for them to dismiss yours
- By following directions found in the RFA, you help the reviewers review – they really like that!
- Not following directions makes them work hard, they get angry, cheap, and unforgiving, mean and cranky!
- Proposals in any given year are judged against all other proposals reviewed in the program in that year
- For the most part, reviewers are people like you and me-always busy, no time for extras
- They take on the additional burden of reviewing proposals gratis, thereby making great contributions to the professions
- Your goal is to have your proposal make at least one reviewer champion, so think like one
- For the most part (and I really mean most part) reviewers are fair and objective; in panel situations, they police each other

Dumb but Important Stuff: Filling out the Forms

Often a proposal will be accepted for review, but certain information is missing, or the forms are filled out incorrectly. When this happens, questions are raised that go far further than the form being reviewed. If the abstract or summary guidance says 250 words, and you provide 500 words, that is not looked on very positively!

- Fill out all the required forms completely…if you have questions who do you call????? The program contact!!!
- When the form asks for telephone numbers, provide the telephone numbers and not FAX numbers and vice versa
- Make sure email addresses are complete; exceedingly important in the e-GOV/e-GRANTS world!
- The amount requested on the Coversheet should be the amount you computed for your total budget; Make sure the numbers are the same and consistent throughout your proposal
- Make sure you as Project Director sign the Proposal Cover Page
- Make sure the Authorized Organizational Representative (he or she who can approve expenditures) signs as well
- Make sure the Summary Page (or equivalent) is filled out completely
- The Summary is the most important words you will write as part of the proposal
- Again, if have questions, call the National Program Leader or the program contact

Critique and Submission

Most proposals that receive in-house critical reviews are often those that fare the best when evaluated. Most of us have experienced the situation where we become "too close" to that which we are doing, and fail to see some pretty stupid stuff…stuff that the conscientious reviewer will invariably see. SO:

- Make sure you allow time for an in-house critique before submission

Send it to someone who is not your good friend…someone WHO:

- talks frankly, bluntly and clearly; You do not want someone who beats around the bush
- has little sympathy for you or your ego
- is smart, crafty and wise
- Is insensitive to your sensitivities
- has had success in obtaining grants in the past

Incorporate relevant critique comments as appropriate

eGOV/eGRANTS proposal system will be implemented by all government agencies in the relatively near future; make sure you submit proposal using correct media (paper? Electronically?)

DO NOT MISS the DEADLINE-and make sure you understand when that is

If an "Act of God" occurs resulting in you being unable to make the deadline, call the program contact immediately; you must document the circumstances if you are to receive an extension

Final Proposal Preparation Words

Some final words…

- Always assume luck is on your side for luck never hurts
- If at first you don't succeed, don't take it personally; be persistent and try and try again
- If have any questions, who do you call????? The program contact, of course!

Leveraging Your Grant Dollars

When resources are constrained, which they most often are, it makes sense to leverage any grant dollars you may receive. One project in one program can lead to another project in another program. The proposal that can show some leveraging of funds, when compared to an equal quality proposal without leveraged funds, usually wins the tie-breaker. Often, your proposal discusses an idea that may have application in other programs. So learn the differences, and submitted another proposal to that program. Do not send the same proposal to two different programs without informing both programs that you have done so. This should not prejudice either proposal but not informing both programs can pose great problems in the future. Most funding agencies are precluded from fund the same proposal that has or is being funded by another agency or program. The following may prove useful as you go about the process of developing, writing, and submitting a proposal:

- Learn the details of as many programs as you can – do not limit yourself to one agency or one program, per se
- One program may fund an initial study or project that leads to funding a continued project by another program
- If find two similar programs in one or more agencies, use your basic idea and develop two related but not duplicate proposals and submit to both programs…make sure you tell each program what you are doing. Proposals are judged similar relative to the similarity of their objectives. Different objectives basically mean different proposals
- Be an entrepreneur…market you're your idea or proposals to other programs
- Call and discuss basic ideas with the program contact – the key is to find out whether your idea is main stream
- Work the program contact hard – pump for hints for success; ask specific questions relative to your proposal or similar, previously submitted proposals
- Partner with those who have similar projects, thoughts, or ideas
- Use collaborations to bring in missing expertise – adds credibility to proposal (get specific letters of commitment; make sure it is part of your budget and budget narrative)

Be persistent…in most competitive programs, funding is not available to fund all the proposal that reviewers recommend funding; hence you may have a very good proposal but because of limited funds, your proposal ends up falling below the funding loan. Use the reviewer comments to improve your proposal and resubmit during the next solicitation period.
Do not limit yourself to just one source of funding; go after multiple sources!

Pester non-governmental organizations – Ford, Kellogg, Aspen, and other foundations/grant-making entities with your thoughts and ideas
Use results of one study to bolster the need for an additional study
Documented outcomes and impacts of those outcomes from previous grants provide your best credibility; if just starting, make sure reviewers know that (your vitae)

Evaluating Your Small Farm Educational Program

Paula B. Ford
Kansas State University
Manhattan, Kansas

At the end of this workshop you will:

Understand why evaluation is important.
Know some basic evaluation terms.
Identify program records that might be critical to evaluation.
Identify the types of questions you want answered in your evaluation and appropriate instruments for answering those questions.
Know where you can get additional information and resources on evaluation.

You want me to do what?

Evaluation is a systematic way to answer questions that you (and others) have about project participation, quality, satisfaction, and outcomes.

Why is evaluation important?

Are we reaching our target audience?
Are we meeting the needs of our participants?
What can we do to improve our educational programs?
Do our educational programs have a real impact on people's lives. If so, what is that impact?

Where to begin?

What are you going to evaluate? Is it an event? A series of events? A product?
Who will use the evaluation? You? Stakeholders? Funders?
Why are you evaluating?

Evaluation is about information. What information is going to be collected?

Who?
When?
How?
What?

Common types of evaluation information

Participant profiles and program record information
Participant needs and assets
Participant reactions to teaching, facilities, logistics
Changes in knowledge, attitude or skills
Changes in behaviors and practices
Longer term changes

Participant profiles and program record information

Participant name and contact information
Age, gender, race, ethnic origin
Employment
Household status
Location of residence
Education
Income Levels
Type of operation

Important things to consider when asking for participant information

Work with your Institutional Review Board
Age at most recent birthday, years of schooling completed, # in household, gender
Race/ethnic origin – More than one category can be checked
Residence – Zip code or county (in town or country)

Sensitive questions are often best asked in categories

Approximate gross value of farm

sales? Approximate family income last year?
Size of operation? Acreage? Animal units?
Type of operation? Single family? Partnership, Family-held corporation?
Off-farm employment? Number of full time employees?

Participant program records

Attendance – all or part of program?
Where did they learn about program?
How far did they travel?
Previous participation in extension programs?

Participant needs and resources

Can be asked prior to, during and after program.
Identified through survey, case studies, interviews, focus groups, or other instrument.
Can also be asked multiple times.

Participant reactions

Can be collected multiple ways
How will you use the information?
Short versus long-term reactions
Reactions to methods, teaching, logistics, etc. Post-event surveys should be specific and only given if results will be used.
Keep it short, sweet and as unbiased as possible.
Remember information is point in time.
Protect anonymity.
Test your surveys prior to use.
Use the feedback you receive.

Examples of specific participant response questions

How useful did you find this workshop? (Likerd scale 1-5)
Rate the content, organization, and materials used in workshop.
Evaluate the quality of the presentations.
Rate the logistics, meals, facilities, etc.
How much would you pay for this workshop?

Participant KASA changes

KASA – Knowledge, Attitudes, Skills, Aspirations
KASA changes occur in participants.
Can be collected in a number of ways
How will information be used?
Short vs. long-term changes

Measuring KASA change

Pre/post testing often used in more formal programs.
Pre/post self-assessments often used in less formal programs.
Retrospective post-then-pre often more effective
Other means to measure KASA change – case studies, interviews, diaries, document review

Post-then-Pre evaluation / retrospective pre/post

Can be more accurate if participants have limited knowledge to respond accurately in pretest.
Administered at end of program, asks participants to assess specific knowledge, attitude, and skills prior to and after event.
Can be used to estimate future change

Measuring KASA change

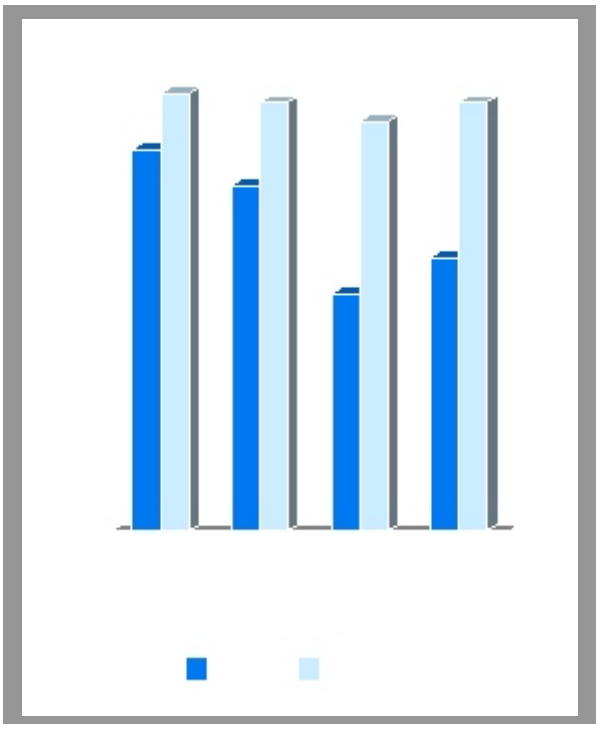
Critical to identify specific educational outcomes – changes in knowledge, attitudes, skills, and aspirations prior to the event.
KASA outcomes can be placed into content categories.
Include some mechanism for measuring unexpected KASA.

What to do with KASA information

Summarize changes in table
Graph using Excel
Test significance of difference using statistical paired sample t-test or Mann-Whitney test
Test at different times

Presenting KASA change

Knowledge area	Pre	Post
Sources of N	4.2	4.8
Factors associated with N availability	3.8	4.7
Calculating N loss	2.6	4.5
N balance equation	3.0	4.7



Behavioral outcomes

Behavior outcomes are changes that occur in the program participants.

Anticipated behavioral changes can be measured immediately after program, real changes require time.

Behavioral changes best measured by combining self-assessment with other forms of measurement

Examples of behavioral outcomes

Participants will:

Identify learning outcomes for at least one small farm educational program they conduct in next year.

Conduct a retrospective KASA test at 3 and 6 months after event to see whether learning outcomes were achieved by participants.

Analyze and present information to Advisory Group

Measuring behaviors

Identifying specific behavioral outcomes associated with project? Be specific – what will people do, when will they do it and how long will they do it?

Other ways to measure behavioral changes

Interviews

Case studies

Monitor use of resources

Changes in related measures – For instance, changes in demands for more information

Photos, videos, diaries

Observation

Evaluation resources

Ask other educators.

Work with stakeholders on evaluation.

Don't be afraid to ask new things in different ways.

Funding Opportunities

Bruce Pleasant
USDA Rural Development
Raleigh, NC

Rural Cooperative-Business Service Programs

- Business & Industry Loan Guarantees
- Intermediary Relending Program
- Specialty Lender programs
- Cooperative Services
- Value-Added Producer Grants
- Rural Cooperative Development Grants

Value-Added Producer Grants

Designed to help Agricultural Producers, including cooperatives, to enter into value-added activities to accelerate the pace of the transformation of the nation's agricultural economy into one focused on producer-owned, value-added business.

What is Value-Added?

- Incremental value realized by a producer as the result of:
- Change in physical state in a commodity
- Differentiated production or marketing
- Product segregation
- Production of farm-based or ranch-based renewable energy

Eligible Applicants

- Independent Producers
- Farmer or Rancher Cooperatives
- Agricultural Groups
- Majority-Controlled producer-based business ventures

Eligible Purposes

- Planning Activities (i.e. feasibility studies, business plans, marketing plans)
- Working Capital Expenses for processing and marketing value-added products (i.e. inventory, salaries, and office supplies)

What VAPG Grants <u>Cannot</u> Do

- Bricks and Mortar
- Purchase, rent or install fixed equipment
- Pay for production-related expenses
- Pay cost incurred prior to application
- Pay cost of preparing application

Grant Amount Maximums (FY 2005)

- Planning Grant: $100,000
- Working Capital: $150,000
- Requires cash/in-kind matches equal to requested amount

2004 NC VAPG Recipients

- Red Gate Farms: Obtained a $50,000 grant for working capital to market processed natural pork products
- Yadkin Valley Winegrowers Association: Awarded a $250,000 grant for working capital to operate a retail wine store at the Charlotte-Douglas Airport

2005 NC VAPG Recipients

- CL Henderson Produce: $29,600
- Old North State Winegrowers Co-op: $150,000

Old North State Winery

- 38 Charter members
- Sells Grapes to Cooperative owned winery
- Product is marketed through retail and wholesale outlets.
- Members are assured market for grapes
- Value-Added product increases returns to members

Rural Cooperative Development Grants

Rural Cooperative Development Grants are made for establishing operating centers for cooperative development for the primary purpose of improving the economic condition of rural areas through the development of new cooperatives and improving the operations of new cooperatives.

Eligible Applicants

Non-Profit Corporations
Institutions of Higher Education
Grants may not be made to public bodies

FY 2005 Funding for RCDG

$7.3 Million funded 27 applications in 22 states
Maximum Award : $300,000
25% matching requirement by applicant or third party in form of cash or in-kind

Eligible Uses of Funds

Applied Research, feasibility, environmental & other studies
Collection, interpretation & dissemination of principals, facts, and technical knowledge
Training and Instruction
Providing loans and grants for purpose of cooperative development
Providing technical assistance, research services and advisory services

Ineligible Uses of RCDG Funds

Bricks and Mortar
Purchase or installation of fixed equipment
Coat of preparing an application
Costs incurred prior to date of grant approval
Operating costs of cooperatives

Contact for More Information

USDA Rural Development
4405 Bland Road, Suite 260
Raleigh, NC 27609
Telephone: (919) 873-2031
Email: bruce.pleasant@nc.usda.gov

Formal Dinner Remarks

W. Thomas Phillips
Director, Community Investments
Pioneer HiBred International
Johnston, IA

I. Thank you for the opportunity to be here with such outstanding business people — leaders in their field and individuals who are committed to life-long learning.

A. Add anecdotal story here about what you may have experienced during the day.
B. I, too, am committed to a lifetime of learning. I finished my master's degree just a couple of years ago. It's never too late.

II. Pioneer Hi-Bred International is dedicated to providing custom, crop-based solutions that improve and sustain lifestyles for people around the world.

A. We bring value to our farmer customers as the world leader in the development and integration of advanced plant genetics and technologies.
B. Pioneer sells seed for corn, soybeans, sorghum, sunflower, alfalfa, wheat and canola
C. Pioneer also offers inoculants for corn and alfalfa silage, alfalfa hay, and high moisture grain.
D. We are committed to helping our customers be successful.
E. Pioneer understands that increasing populations, changing economies, and limited cultivatable land impact how farmers conduct their business.

III. Pioneer had a humble beginning as the Hi-Bred Corn Company, founded by Henry A. Wallace in 1926.

A. A young Henry Wallace had befriended George Washington Carver while Henry's father was enrolled at Iowa State. Wallace has credited Carver for instilling in him a curiosity about plant genetics and how genetics affect trait expression.
B. Pioneer named its Conference Center after George Washington Carver in honor of his world famous work as a botanist and agricultural chemist, and his amazing influence with Henry Wallace. Carver is well known for developing crop rotation methods and for discovering hundreds of innovative uses for the peanut. He was also the first African American to enroll at Iowa State College. Carver earned his B.S. (1894) and M.S. (1896) degrees from Iowa State and later became the school's first African American faculty member.
C. The passion for plant sciences that Carver initially fed continued to grow within Henry. He felt that it had the potential to change the lives and impact the farming practices of growers.
D. We were the first company anywhere to market hybrid seed corn. In 1935, the company changed its name to the Pioneer Hi-Bred Corn Company and was aggressively marketing its hybrid corn.
E. Wallace firmly believed that the only way to provide a steady and dependable stream of improved hybrids for farmers was to invest some of its profits into research to develop new products.
F. Pioneer's early leaders put a business philosophy to paper that captured Henry's spirit and intention when he first started the

business. We call it The Long Look. Simply, it is:

- Produce the best products on the market'
- Deal honestly and fairly with our employees, sales representatives, business associates, customers and stockholders
- Advertise and sell our products vigorously but without misrepresentation
- Give helpful management suggestions to our customers to assist them in making the greatest possible profit from our products

IV. The Long Look is still our compass that guides the business decisions we make today as a wholly owned subsidiary of DuPont.

A. Pioneer's mission remains unchanged from before DuPont acquired Pioneer in 1999. We are committed to creating new value for our customers. Funding our research projects is key to our customers' success and the viability of the Pioneer business.
B. In fact, Pioneer fits well into the DuPont family of businesses. In addition to Pioneer, DuPont, as you well know, offers a complete line of crop protection products for row crops, cereals, specialty crops, fruits and vegetables.
C. DuPont is focused on being the world's most dynamic science company, creating sustainable solutions essential to a better, safer, healthier life for people everywhere. And, reducing our environmental footprint.
D. This is another way we give back to our communities, our customers, and our world.

V. Pioneer also gives generously to develop, implement and provide charitable programs that support quality of life in the communities where our customers and employees live and work.

A. We invest in programs that:
   - Reflect the strategic interests of the business
   - Add economic or social value to communities
   - Support employees' philanthropic and volunteer interests
   - Build upon our commitment to be a good neighbor
   - Encourage, where possible, collaborative funding programs that specifically address rural social and economic issues
B. About 70 percent of the annual contributions we make are directed toward programs that have a strong, strategic relationship to Pioneer. Generally, these programs are in the areas of agriculture, education with an emphasis on science and farm safety.
C. For example,
   - Pioneer has helped support Farm Safety 4 Just Kids for many years. A Central Iowa mother who tragically lost her young son in a farm accident in 1986 founded this organization. With support from Pioneer, Farm Safety 4 Just Kids is forming additional chapters in communities throughout the United States. The group conducts local children's farm safety activities to educate youth and adults alike to help keep them safe.
   - Pioneer supports the Easter Seals AgriSafe Program to help disabled farmers return to the fields.
   - We have supported the National FFA Foundation for more than 40 years. Pioneer helps support the New Century Farmer program, the American FFA

Degree Program, the Grain Production Entrepreneurship Proficiency and Placement Proficiency, 2005 scholarships, the National Association of Agricultural Educators, and the Collegiate Convention.

- Pioneer also offers its support to several higher educational institutions such as Iowa State University, Tuskegee, 1980s Land Grant and historically black colleges and universities.
- We have support Minorities in Agriculture and Natural Resources, some of you may know this as MANRRS, and the Southeastern Consortium for Minorities in Engineering.
- And, many, many others.

VI. Pioneer is committed to creating an improved, sustainable lifestyle for people around the world.

A. We do this through volunteer and philanthropic investments as well as bringing value through agronomic solutions to our farmer customers.
B. Pioneer encourages and supports volunteer efforts by our employees
C. And, we set aside a percentage of revenue each year for investment in programs that add economic or social value to our communities

VII. Pioneer is focused on science, solutions and customer success.

I wish each of you the very best in your business. I hope you have enjoyed the conference so far. It has been my pleasure to join you tonight. Thank you

The Farm Bill Listening Session

The Farm Bill Listening Session was held at the Koury Convention Center, October 19, 2005.

Vernon Parker, Assistant Secretary of Agriculture for Civil Rights, and Floyd Gaibler, Deputy Under Secretary of Agriculture for Farm and Foreign Agricultural Services received comments of behalf of the U.S. Department of Agriculture from a wide range of participants on what was seen as the most important components the new Farm Bill, slated to be written in 2007.

Also present were:

Congressional representatives from G.K. Butterfield's office, North Carolina; Assistant Commissioner, Richard Reich, North Carolina Department of Agriculture and Consumer Services; Keith Weatherly, State Director of the Farm Service Agency in North Carolina; John Cooper, State Director of Rural Development in North Carolina, and Jacob Crandall, Assistant State Conservationist for NRCS in North Carolina.

The session was moderated by Marlin Bohling, farm director and broadcaster for the Southern Farm Network in Raleigh, North Carolina.

The session focused on six questions:

How should farm policy address any unintended consequences and ensure that such consequences do not discourage new farmers and the next generation of farmers from entering production agriculture?

How should farm policy be designed to maximize U.S. competitiveness and our country's ability to effectively compete in global markets?

How should farm policy be designed to effectively and fairly distribute assistance to producers?

How can farm policy best achieve conservation and environmental goals?

How can federal rural and farm programs provide effective assistance in rural areas?

How should agricultural product development, marketing, and research-related issues be addressed in the next farm bill?

350 conference participants attended the Listening Session.

The Farm Forum listening session was recorded, and a full transcript is on the USDA website, http://www.usda.gov Release No. 0470.05

Exhibit Abstracts

Small Farmers' Outreach and Technical Assistance Program

Since 1995, the Small Farmers Outreach and Technical Assistance Project at Alabama A&M University has had overwhelming success in assisting small and limited resource farmers in North Alabama's underserved communities remain in profitable farming business. The project offers a wide range of outreach services and technical assistance, including record keeping, farm financial analysis and planning, value-added agriculture, idebtifying markets and marketing.alternatives, etc. This display purports to showcase some of the project's many success stories and share our experiences with conference participants working with limited resource producers. This project is only one of the many projects within Alabama A&M University's Small Farms Research Center which offer assistance to small and socially disadvantaged farmers. It is funded by USDA/CSREES's 2501 program.

For more information:
Duncan M. Chembezi
E'licia L. Chaverst
Larry Dejarnett
James O. Bukenya
Alabama A&M University
P.O. Box 700
Normal, AL 35762-0700

The ATTRA National Sustainable Agriculture Information Service: A Free Resource for Farmers and Educators

The ATTRA National Sustainable Agriculture Information Service provides technical assistance to farmers and ranchers across the US on sustainable agriculture and marketing of sustainably produced products. We do this through an 800 tollfree telephone line (English and Spanish) for questions, a popular website (averaging 100,000 unique visitors per month), publications and presentations.

For more information:
Teresa Maurer
ATTRA, P.O. Box 3657
Fayetteville, AR 72702

Small Farm Project – University of Arkansas at Pine Bluff

This exhibit shows field and office activities associated with the Small Farm Project. These activities include training and technical assistance being provided in farm production, planning, land improvements, and diversification with alternative enterprises. The pictures show farm visits at and before harvest of soybeans; farm planning being conducted in the office using FINPACK Software to help a farmer analyze his operation; a farmer that improved his land by using EQIP to install irrigation and land leveling on his farm; and farmers who diversified their operation by adding goats and vegetables. Impact statements are also included.

For more information :
Henry English
Small Farm Project Director
University of Arkansas – Pine Bluff
Mail Slot 4906
1200 North University Drive
Pine Bluff, AR 71601

USDA - Economic Research Service

The Economic Research Service is the main source of economic information and research from the U.S. Department of Agriculture. ERS research and analysis help public and private decision makers conduct business or formulate policy related to agriculture, food, natural

resources, and rural economics. The ERS booth offered a variety of publications available as well as a demonstration of the ARMS Interactive Farm Data Resource Tool. This website is an interactive data query product that offers a "wealth of data that describe farming in America—who, where, how, and with what outcomes." Individuals can use this tool to learn about U.S. agriculture structure, agricultural production technology, and the viability of farm business.

ARMS is an annual survey and is USDA's primary source of information on the financial condition, production practices, resource use, and the economic well-being of America's farm households. Sponsored jointly by ERS and the National Agricultural Statistics Service (NASS), ARMS is the only national survey that provides observations of field-level farm practices, the economics of the farm business, and the characteristics of the American farm household—all collected in a representative sample. And now, for the first time, ARMS survey information about farm production, business, and households include data for 15 selected States and the whole nation.
Information available includes:

- Structure and financial status and performance of U.S. farm operators, their households, and farm businesses.
- Status and trends in crop production practices for several field crops.
- Annual production costs and returns and published accounts for major field crop and livestock commodities.
- First ever state-level estimates of farm financial status and performance (for 15 selected states).

For more information:
Doris J. Newton, Economist
USDA, Economic Research Service
1800 M Street, NW
Washington, DC 20036-5831

USDA – NASS: Fact Finders for U.S. Agriculture

The National Agricultural Statistics Service is a World leader in sampling, data collection, and estimation procedures for economic, environmental, and agricultural surveys and censuses. The Agency also creates a number of remote sensing and Geographic Information System statistical products and conducts ongoing applied research on statistical methodology and estimation approaches. Statistical information on acreage, production, stocks, prices, and income is essential for the smooth operation of Federal farm programs. It is also indispensable for planning and administering related Federal and State programs in such areas as consumer protection, conservation and environmental quality, trade, education, and recreation.

Reliable, timely, and detailed crop and livestock statistics help to maintain a stable economic climate and minimize the uncertainties and risks associated with the production, marketing, and distribution of commodities. Farmers and ranchers rely on NASS reports in making production and marketing decisions. The reports help them decide on specific production plans, such as how much corn to plant, how many cattle to raise, and when to sell.

NASS estimates and forecasts are greatly relied upon by the transportation sector, warehouse and storage companies, banks and other lending institutions, commodity traders, and food processors. Those in agribusiness who provide farmers with seeds, equipment, chemicals, and other goods and services study the reports when planning their marketing strategies.

Analysts transform the statistics into projections of coming trends, interpretations of the trends' economic implications, and evaluations of alternative courses of action for producers, agribusinesses, and policy makers. These

analyses multiply the usefulness of NASS statistics.

For more information:
Dale Hawks
Ray Garibay
USDA-National Agricultural Statistics Service
1400 Independence Ave., SW, Wash., D.C. 20250

USDA – Risk Management Agency: Working Together to Preserve Family Farms

Outreach Mission: To ensure that all farmers and ranchers, including women, limited resource, socially disadvantaged and other traditionally underserved producers consistently receive program information and technical assistance necessary to access and participate in all USDA/RMA programs and activities.

RMA's community outreach program funds and supports a wide range of innovate outreach and assistance activities in farm management, financial management, marketing contracts, crop insurance and other existing and emerging risk management tools.

Through partnerships and collaborations with land grant institutions, Hispanic Serving Institutions(HSIs), associations of farmers and ranchers, state departments of agriculture and other non-profit organizations, limited resource and traditionally underserved producers and ranchers receive risk management training, as well as information opportunities and assistance necessary to understand (1) The kind of risks addressed by existing and emerging risk management tools; (2) the features and appropriate use of existing and emerging risk management tools; and (3) How to make sound risk management decisions.

For more information:
Marie Buchanan, Program Outreach Manager
USDA/Risk Management Agency (RMA)
Community Outreach and Assistance Partnership Program
1400 Independence Ave SW, stop 0801
Washington, DC 20250-0801

USDA Small Farms Coordinators

Enhancing the viability and economic livelihood of America's small farmers and ranchers is one of USDA's top priorities. USDA has a Department-wide group of Small Farms Coordinators, representing each mission area; individual agencies; and the Offices of Outreach, Civil Rights, Budget and Program Analysis, Communications, Chief Economist, and the General Council. Small farms coordinators provides a focal point to coordinate small farm policy and programs within USDA. They are responsible for planning, recommending and coordinating the implementation of small farms polices and programs.

For more information:
Shirley E. Brown
Kathryn Hill
U.S. Department of Agriculture
Room 112-A Whitten Federal Building,
1400 Independence Avenue, SW,
Washington, DC 20250-3810

USDA - Agricultural Marketing Service

National Organic Program
USDA Farmers Market Program—AMS Marketing Services Branch
How to Direct Market Farm Products on the Internet
Locating a farmers market in your state

How Local Farmers and School Food Service Buyers are Building Alliances
Direct / niche marketing for farmers, and other publications

For more information:
Carmen Humphrey
USDA, AMS
phone: (202) 720-8317; fax: (202) 690-0031

USDA-Food Safety Inspection Service / Food Safety Animal Production

USDA's Food Safety and Inspection Service (FSIS) is a public health agency charged with ensuring that the United States' supply of meat, poultry, and egg products is safe, wholesome, and correctly labeled and packaged. FSIS undertook a large number of food safety and public health initiatives to strengthen and modernize the Federal inspection program, and adopted a farm-to-table strategy in pursuit of its broad public health mission.

FSIS does not have statutory authority with regard to on-farm operations. Rather, its role is to provide leadership and assistance for the development and adoption of animal production practices that will reduce residues and pathogen hazards in food animals. FSIS' Animal and Egg Production Food Safety Branch (AEPFSB) has developed a comprehensive voluntary approach to promote food safety practices at the production level. AEPFSB is responsible for research coordination, producer education, liaison, and outreach activities to help ensure that only the safest and best quality animals enter the food chain. For more information, contact the Animal and Egg Production Food Safety Branch, FSIS Small Farm Coordinator at 202-690-2683 or visit our website at http://www.fsis.usda.gov

For more information:
Bryan Surgeon
Sibyl Wright
Food Safety and Inspection Service
Phone: 202-720-4923 ; Fax: 202-720-8213 ; Email: sibyl.wright@fsis.usda.gov
USDA/FSIS/OPHS/AEPFSB 1400 Independence Ave., SW, Aerospace Center, Room 343, Washington, DC 20250

Rural Coalition / Coalicion Rural

For nearly 28 years the Rural Coalition has worked with our diverse members to enact more just food, farm and trade policies. We've listened closely as small and limited resource farmers and farmworkers described the kind of farm policies and trade relationships that are most beneficial to them. In response, The SuperMarket Coop, an online market, was formed to bring these principles of equity and fair trade to both farmers and consumers. The SuperMarket Coop (www.supermarketcoop.com) offers consumers home-grown food and handmade crafts that reflect the diversity of small farmers and rural communities across the continent while it guarantees them a fair price. We're pleased to display some of those items at this conference and also to share information on our advocacy work. Please stop by the Rural Coalition's Fair Trade SuperMarket to shop and learn more about bringing fair trade to farmers and to learn how you can participate in our electronic policy network in preparation for the upcoming Farm bill.

For more information :
The Rural Coalition
1012 14th Street, NW, Suite 1100
Washington, DC 20005
Phone : (202) 628-7160
ruralco@ruralco.org

Safe and Efficient Drug Use on Small Farms

Owners and managers of small farms face two major problems when considering the use of drugs in their animals – lack of available drugs for the species most of them are involved with and paucity of information on tactics they can use to avoid harmful drug residues in animals and their products going to market. The first affects their animals and their income directly while the latter can impact on the whole industry as the public loose trust in the US farmer's ability to produce safe food. The talk will explain how limited are the drug choices, how farmers can optimize the situation through the use of their veterinarian for both advice and using her/his ability to use drugs outside their label legally. Similarly, veterinarians have direct access to FARAD fir residues avoidance strategies and up-to-date enforcement policies.

For more information :
Alistair I. Webb
College of Veterinary Medicine
University of Florida
Gainesville, FL 32610
webb@ufl.edu

Establishing a Viable Organic Goldenseal Production System for Small Family Farms

Objective**:** Presentation of results of USDA SBIR funded projects.

This booth will be complementary to the oral presentation to be given by Randy Beavers entitled, "Agricultural Wildcatters, Have They Hit A Gusher With Medicinal Plants?". The booth will highlight our work to develop a USDA National Organic Program production system for the endangered medicinal plant *Hydrastis canadensis* (goldenseal) and our efforts to make medicinal plant production a viable alternative crop for small, family operated farms. Much of our effort has focused on the development and marketing of farm made value-added products. We will have a display of these products and offer them for sale to those attending the conference. In addition, we will offer a DVD recording of a hands-on medicinal plant production workshop held at Sleepy Hollow Farm. Randy and Cindi Beavers will man the booth and be available to discuss the projects. The information presented will be usable by extension agents, policy makers, researchers, and small farmers.

Outcomes: Attendees will be presented with a model for medicinal herb production usable by those wishing to enter agriculture on a part time basis or for diversification by existing farmers.

For more information:
Randy & Cindi Beavers
Sleepy Hollow Farm
1421 Boyles Mill Rd.
Dalton, Georgia 30721.

New Ventures / Purdue University

A three paneled display:
1. Three Rs of New Ventures; Do you:
    - Have an idea for a new agricultural or food business?
    - want to know if you have what it takes?
    - have a handle on the technology involved?
    - want to know if there's a market for your product or service?
    - want to expand your current business?

Through New Ventures, agricultural entrepreneurs tap into:
Research, Resources Relationships

2. Opportunities
    - Agri-Tourism
    - Alpaca
    - Aquaculture
    - Indiana Farm Fresh Beef
    - Biofuels

Bison
Commercial Kitchens
Organic Production
Pastured Pork
Free Range Poultry
Wineries

3. Three Who Succeeded

Clearspring Produce Auction

With the help of Purdue Extension, about 40 small farmers pooled ideas and resources to establish the Clearspring Produce Auction, which rang up about $430,000 in sales in 2003. They've increasingly turned to Purdue for technical and management advice.

Momentum Food Service, Inc.

After attending a Purdue workshop, Jose Morales forged ahead and turned an idea into a successful food products business. Morales put an empty facility back into production and people back to work in a rural community.

Windy Knoll Winery In 1994, Leser Winery & Vineyard – now known as Windy Knoll – started in southwestern Indiana with 1.5 acres. Today with 10.5 acres and plans to expand to 25, the business produces award-winning wines. Owner Rick Leser credits research and support from the Indiana Wind Grape Council, the Southwest-Purdue Agricultural Center, and other wine producers for his success.

For more information:
Steve Engleking
Purdue Cooperative Extension Service
114 West Michigan Street, Suite 10
LaGrange, IN 46761

Firing Your Customer and Other Tips to Ensure a Successful Business

Why are some value added agriculture businesses successful while others fail? This proposed session will delve into recent research examining this issue. Some of the points that will be covered include research indicating adequate capitalization and operating capital, focus of purpose, management execution and determining which customers to fire and which ones to keep are key issues for success. Based on case studies of more than 30 value added agriculture businesses, the presenter will provide checklist of how to make a business more successful and will explain a new tool, called the Agricultural Marketing Resource Center that can provide producers training and education to help improve their odds of success. The Web-based Center features more than 75 commodities, and has more than 6000 links of marketing resources. Included in the Website, located at www.agmrc.org are extensive case studies and educational tools and templates. The Center averages more than ½ million visitors each month.

For more information:
Mary Holz-Clause
Iowa State University
1111 NSRIC Building
Ames, IA 50011

Good Natured Family Farms Selling Your Local Farm Foods to Supermarkets

The Good Natured Family Farms exhibit will highlight the line of local farm foods sold at a 29 supermarket chain in Kansas City, Kansas. Good Natured Family Farms is an alliance of 40 small family farms within a 200 mile radius of the Kansas City metropolitan area. These small family farms produce all-natural beef, free-range chicken, farmhouse cheese, glass-bottle milk, free-range eggs, pasture-raised pork, grass fed bison, and several value-added products. The exhibit will showcase up-to-date marketing strategies including monthly newsletter mailed to customers through database mining, coupons printed on identified customers receipts, producer photos and bio's on check-out computer screens, Kansas City 'Buy Fresh Buy Local

promotion', lots of local free publicity, and our new supermarket electronic CSA. This will be an exhibit that will demonstrate how a group of small family farms can partner with local independent supermarkets and both can benefit and be successful.

For more information:
Diana Endicott
Rainbow Organic Farms d.b.a. Good Natured Family Farms
1976 55th Street Route 1
Bronson, Kansas 66716

Alternative Farming Systems Information Center

The Alternative Farming Systems Information Center (AFSIC) is a dynamic collection and distribution center specializing in information about sustainable food production systems and practices. AFSIC is a service-oriented team of librarians and subject specialists who facilitate rapid access to information resources on alternatives to conventional agriculture. AFSIC responds to reference and information inquiries on topics such as sustainable cropping systems, alternative crops and livestock, organic farming, and aquaculture. AFSIC also identifies, organizes and distributes information on alternative farming practices and markets, including topic specific information products. AFSIC serves a wide range of customers including governmental and academic researchers, growers, students/educators, policy makers, the private sector, and the general public.

Since 1985, AFSIC has been an integral part of the National Agricultural Library, serving both the U.S. Department of Agriculture (USDA) and the public, and is considered a critical element of the overall USDA effort to insure a sustainable future for agriculture and farmers worldwide. Services of the Alternative Farming Systems Information Center include: Answering questions on the telephone, in person, by mail or by email; Performing custom research and literature searches across many types of sources, including databases that may be unavailable on the Internet or to the general public; Making referrals to appropriate subject experts; Providing access to unbiased factual information and resources ; and, Sharing subject and technical expertise with other organizations that serve the sustainable agriculture community.

For more information:
William Thomas
Stephanie Boehmer
Mary Gold
USDA/REE/ARS/NAL/PSD/IRSB/AFSIC
Alternative Farming Systems Information Center, National Agricultural Library,
10301 Baltimore Avenue, Room 122
Beltsville, MD 20705-2351

Spray Drift Demonstration Table

The Spray Drift Demonstration table provides an opportunity for farmers to view drift. It varies wind speed, 0, 3, and 8 mph. Pressure can vary from 20-50psi. Tip selection is endless. Included will be the latest technology for A. Soybean Rust and choices of nozzles and how they affect drift because of increased pressure to penetrate foliage. Drift is quantified by the residue on water sensitive paper.

For more information:
Eddie Johnson
Univ. of Maryland
Wicomico Cooperative Extension
28647 Old Quantico Road
Salisbury, MD 21801

New England Small Farm Institute (NESFI)

First Prize for an exhibit by a non-profit organization was awarded to New England Small Farm Institute, a land-based educational organization in Massachusetts. NESFI's colorful exhibit informed attendees about three important aspects of its educational outreach program:

- *Exploring the Small Farm Dream:* a decision-making workbook and short course designed to help aspiring farmers decide if starting a commercial business is right for them. NESFI's *Explorer* project offers train-the-trainer opportunities to service providers who would like to offer the course to their new farmer constituents.
- "Linking Know with Do": a poster and hand-out describing NESFI's approach to self-directed, competency-based education for adult learners. A series of "Learning Guides" that provide both information and structured options for supervised practice offers students an opportunity to become informed and competent practitioners.
- *Cultivating a New Crop of Farmers:* a decision-making workbook and short course designed to help experienced farmers decide if they are ready to assume the important role of on-farm mentor. This workbook, along with a new *On-Farm Mentor's Guide,* supports NESFI's development of a Northeast On-Farm Mentors' Network, a group of farmers dedicated to improving on-farm training opportunities throughout the Northeast.

All these innovative programs have been developed with CSREES support, either through its IFAFS initiative, "Growing New Farmers," or through Northeast SARE.

For more information :
Judith Gillan
New England Small Farm Institute
275 Jackson St.
Belchertown, MA 01007

Land Stewardship Project's Farm BeginningsTM

Farm Beginnings™ is a comprehensive farmer-led mentorship and training program that helps beginning farmers get started farming. A combination of seminars addressing sustainable production, goal setting, business planning and management, including financial planning and alternative marketing practices as well as hands-on farm experience with established farmers through mentorships and farm tours provide the foundation for this 10-month course. Unique to other courses, experienced established farmers are the presenters and mentors as well as continuing to guide the program. To date, entering the ninth year in Minnesota, Farm Beginnings™ has trained 225 people; over 60% of whom are farming, over 6,000 acres in a diverse spectrum of enterprises: dairy (cow and goat), beef, hogs, meat goats, sheep, poultry, wholesale vegetables, Community Supported Agriculture, organic grains and specialty products such as flowers.

After seeing the successes in Minnesota, state collaborators in IL, MO, and NE are currently being trained to offer Farm Beginnings™ in their states. This will provide the possibilities for more beginning farmers to carefully think through a plan, develop networks with established farmers, and gain hands- on experience to set themselves up for success in their farming endeavors.

Information will be available about the nuts and bolts of the Farm BeginningsTM program, success stories of beginning farmers going through the program and the transferring of the Farm Beginnings™ model to other places.

For more information:
Cathy Twohig, Eric Klein
Land Stewardship Project
103 W. Nichols
Montevideo, MN 5626

American Indian Credit Outreach

We have credit liaisons do education, outreach and one-on-one work with Indian farmers, ranchers and youth on credit work, organizing and pursuing agricultural interests

For more information:
Lou Ann Kling
National American Indian Credit Outreach Project
National Tribal Development Association
691 8th Street
Box Elder, MT 59521

Silvopasture: integrating livestock and forest management

Farmers and ranchers can increase profit in livestock production through agroforestry practices such as silvopasture systems and windbreaks. Silvopasture systems in the southeast U.S. integrate intensive grazing systems and pine plantation management to increase profit, diversify income and provide environmental protection. Windbreaks can reduce stress on cattle, especially young calves, during cold weather and increase their feed efficiency.

For more information:
Richard Straight, Lead Agroforester
State & Private Forestry, USDA Forest Service
USDA National Agroforestry Center
38th & East Campus Loop East Campus, UNL
Lincoln, NE 68583-0822

Benchmarks for Small Greenhouses

Competition in the nursery and greenhouse industry has become fierce. The dominance of big box stores has put downward pressure on prices while costs are increasing. To stay competitive, it is essential to develop management and business analysis competency among greenhouse businesses. Comprehensive financial data and market analysis for the greenhouse industry are needed to enable managers to evaluate their businesses and make wise business decisions. These data will also allow us to investigate operating efficiency (including input resources, labor, land, marketing practices, etc.), assess profitability and financial risks of greenhouse businesses, and provide valuable information to researchers and government officials for program planning and evaluation purposes. We collected thorough financial data from Northeastern growers according to size and market channel to address these needs. From the data we have established production and financial benchmarks for the Northeastern greenhouse industry using the Rutgers Greenhouse Cost Accounting Program. We used the data to analyze input-output relationships and profitability of greenhouse businesses, to analyze the operation efficiency and dynamics of different types of greenhouse businesses, and assess risks related to different financial management strategies. In addition, we assisted individual participants in identifying strengths and weaknesses of their businesses by helping them evaluate the performance of their business against industry benchmarks, how to track their costs using the Greenhouse Cost Accounting Program, and assisting them in developing strategic planning skills. The analysis methods developed in this project will be applicable to other horticultural business sectors.

For more information:
Dr. Robin G. Brumfield
Rutgers, The State University of New Jersey
55 Dudley Road
New Brunswick, NJ 08901-8520

NRCS, North Carolina Activities working with Small Farmers

Display will highlight programs and activities NRCS conducts that are assistance to small farmers. Specific activities in North Carolina will be highlighted
Topic: The Sustainable Farming Program

For more information:
Andy Smith
USDA Natural Resources Conservation Service
4405 Bland Road, Suite 205
Raleigh, NC 27609

Planning for Agriculture

Planning for agriculture is as important as planning for development. It creates the framework for an economically and environmentally sustainable agricultural industry— an industry that creates job opportunities, preserves the rural character of communities, provides habitat for wildlife and more. Effective plans focus on keeping land available and affordable for farming or ranching, as well as ensuring it is economically viable.

The Exhibit will future the following key points: quantify the economic contributions of the agricultural industry, identify land that is the highest priority for protection, engage stakeholders and the community to assess the benefits and drawbacks of land use and economic development techniques, avoid policies and programs that create barriers to profitable farming or cause urban conflicts, be comprehensive by utilizing multiple tools, focus on techniques to ensure the long-term viability and environmental sustainability of agriculture, and develop a plan for agriculture that is either a component of the overall land use plan or a stand alone document.

For more information:
Gerry Cohn
American Farmland Trust
Southeast Regional Office
24 Court Square NW , Suite 203
Graham, NC 27253

Marketing Cooperatives: Successful Marketing of Fruits and Vegetables by Minority Farmers

Are you tired of growing produce you can't sell? Do you want to sell to buyers who pay premium prices for your produce? Operation Spring Plant, Inc. (OSP) provides training and technical assistance to farmers in finding new markets and reduction of surplus produce to reap bountiful cash profits. Learn about a community-based cooperative that assists minority and limited-resource farmers develop appropriate production, marketing and farm management skills. OSP will highlight impacts, partnerships and funding support from USDA, Golden Leaf, Z. Smith Foundation, and various private agencies. We collaborate with North Carolina A&T State University and NC State University Cooperative Extension System, NC Department of Agriculture and Consumer Services, county, state and federal government agencies, agribusinesses, community groups, and other entities in helping farmers in North Carolina, Virginia, South Carolina and selected Southern states.

For more information:
Dorathy Barker
Phillip Barker
Thomas Bullock
Operation Spring Plant, Inc.
Henderson, NC 27536

Practical Information Available for Small Farms

Small-scale farms make up nearly 94% of the farms in the United States. They contribute significantly to the nation's food supply and to local economies. They strengthen rural communities and contribute to a diverse and pleasing rural landscape. Animal and animal products account for more than $100 billion annually in agricultural products.

A series of fact sheets addressing the needs of smaller scale animal producers is being developed by an interdisciplinary team of experts from land grant universities around the country. Currently there are seven fact sheets available online at: http://www.cals.ncsu.edu/waste_mgt/smallfarms/factsheet.htm.

Current topics include: stewardship for small farm owners, pasture grazing, manure management, farm runoff, water quality, stewardship for horse owners and managing animal mortality. Additional topic are under development and include fact sheets on: livestock fencing, livestock watering systems, small scale swine production methods, grazing systems for swine and poultry, nutrient management, managing runoff with vegetative systems and livestock waste management in humid coastal regions.

These fact sheets are available in PDF format free of charge from the website. Versions that can be modified to reflect local needs are also available for a nominal charge.

For more information:
Mark Rice
North Carolina State University
Campus Box 7927
Raleigh, NC 27695

What can the Plant Materials Program do for Small Farms?

As a result of the 1930's Dust Bowl, the United States Department of Agriculture created Conservation Nurseries throughout the country to grow and distribute plants for the stabilization of severely eroding lands. Over the past 65 years these nurseries evolved into the Plant Materials Program of the Natural Resources Conservation Service. Today, the program includes 26 Plant Materials Centers (PMCs) located nationwide to service all 50 states and territories.

The PMCs and Plant Materials Specialists cooperate with an array of public and private conservation partners to select and produce improved plants for conservation. In addition, they develop technology to address resource issues on all land uses, particularly agricultural operations. The Plant Materials Program has developed practice standards, planting techniques and other technology to specifically address the conservation issues of small farms.

This exhibit will highlight the following products and services relevant to small farms:

Seed production as an Alternative Enterprise
PM Program distributes foundation seed free of charge to eligible participants as well as the appropriate propagation, seeding and management techniques

Vegetative Barriers for Soil & Water Conservation
Developed by Plant Materials Specialists, this practice slows runoff, traps sediment, reduces gully erosion and encourages terrace formation. It takes less land out of production and cost less to install than a terrace. Cost per foot of row for a vegetative

barrier planted with switchgrass is $.02 versus $2.00 for a terrace.

Culturally Significant Plants

The Plant Materials Program has worked with several groups and Tribal Nations in order to ensure that plants historically used by the group for food and or fiber are preserved.

For more information:

Livia Marqués, Regional Plant Materials Specialist
USDA-Natural Resources Conservation Service
East National Technology Support Center
200 E. Northwood St., Suite 410
Greensboro, NC 27401

Blue Ridge Women in Agriculture

Blue Ridge Women in Agriculture is dedicated to empowering women and their families with resources, education and skills related to farming to overcome economic and social disparities that create barriers and make their children a population at risk.

Blue Ridge Women in Agriculture is a grassroots project. BRWIA is seeking to create working partnerships with groups who have related goals in agricultural endeavors; present entrepreneurial and sustainable agriculture workshops; and create a working partnership newsletter. By linking organizations with similar goals, BRWIA can combine resources to expedite action toward making local agriculture opportunities profitable and sustainable.

For more information:
Sue Counts
Hollis Wild
Mary Mafuyai-Ekanem
Blue Ridge Women in Agriculture
971 West King Street
Boone, NC 28607

Pasture-based dairy farming - an alternative for family farms

Pasture is an increasingly important component of family-based dairy farms in the Mid-Atlantic region of the humid eastern U.S. Farmers themselves have been leaders in the growth and adoption of grazing as a competitive dairy management system. Existing knowledge of profitability and environmental impacts of dairy grazing systems is limited but suggests that pasture-based dairies can be profitable with fewer environmental problems than confinement dairy farming systems. Dairy graziers need research answers for questions about grazing systems in order to continue to be practical, profitable, and environmentally sound. Preliminary results from a SARE-funded research project provide insights into how stocking rate may influence production and health of cattle, nutrient flows within the system, and potential economic consequences. Leading dairy graziers are asking for new information to reduce current grazing system constraints, and they need reliable data and management tools to help them achieve their business goals. Questions relate to forage species combinations for optimal grazing in various environments, management strategies to cope with seasonal variations in pasture quality and quantity, stocking rates, supplementation strategies, crossbreeding, reproductive challenges, and other animal management issues. Some questions can be addressed in short-term trials but dairy graziers prefer the reliability of a systems approach to allow evaluation across entire lactations and multiple years. Within long-term studies of grazing systems, other research projects can be done, thereby increasing the effective output of information from the system.

For more information:
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Center for Environmental Farming Systems

The Center for Environmental Farming Systems (CEFS) is an internationally recognized Center of Excellence for Sustainable Agriculture supporting the growth of vibrant farms where healthy products are produced in ways that steward the land and its people. CEFS is a leader in research, innovation and service for the agricultural community. The Center provides support for new and transitioning farmers, contributes high quality research to the sustainable agriculture knowledge base, and offers educational programs to audiences within and beyond North Carolina. The 2000 acre CEFS facility is located in Goldsboro, North Carolina and is a joint program between NC State University, NC A&T State University, NC Department of Agriculture, stakeholder groups and farmers. The Center consists of a farming systems research unit, an organic unit, a small farm demonstration unit, pasture-based beef and dairy, units, and a new alternative swine production unit. .

For more information:
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NC State, NC A&T SU, NC Department of Agriculture
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City of the Bees

Honeybees are one of the most fascinating insects in the world. Honeybees have a society of their own, and in many respects each colony is like a small city.
The city of the bees have streets and alleys so its members can go where they need to go. The city is air-conditioned during the summer to make sure its residents do not get too hot, and heated in the winter to make sure they do not get too cold.

Bees gather nectar and pollen from flowers for food and for rearing their offspring. While bees are visiting flowers to collect nectar and pollen, they pollinate all different kinds of plants. They are an essential part of both our agricultural economy including home and wildlife. How important is Pollination to the crops? Dr. David Tarpy Entomologist with North Carolina State University says the value of bee pollinated crops varies, but studies indicate that about 90 crops in the United States depend on bees, for pollination. Overall colony loss in the winter of 2004 showed that 48% of colonies are where they are expected to be, while 24% are below normal. Bees will travel as far as 55,000 miles collect pollen and nectar, they will visit over 2.6 million flowers to produce one pound of honey. One out of every three mouthfuls of food we eat comes from bee pollinated plants. A Cornell University study says pollinated agricultural crops are valued at more than $14.6 billion per year to our economy.

For more information:
Martin Brewington
Larry Wright
North Carolina Cooperative Extension Program
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Food Safety Outreach Training for North Carolina's Small Meat and Poultry Producers

A cooperative agreement was signed between North Carolina A&T State University and The Food Safety and Inspection Service (FSIS) to develop outreach efforts on food safety practices for small animal producers in North Carolina. This outreach project initiative was designed to implement food safety practices that are Hazard Analysis Critical Control Point-compatible at the production level. The specific objectives of this project were to: 1) obtain assistance from FSIS in developing the expertise needed to participate in training delivery; 2)

conduct a train-the-trainer conference/workshop on food safety practices for Cooperative Extension Field Employees; 3) host a conference/workshop on food safety practices for small producers at A&T, and 4) conduct an on-site demonstration at North Carolina A&T's Annual Cooperative Extension Field Day, and provide a public display at the National Small Farm Conference showing the outreach collaboration efforts between North Carolina A&T and FSIS. Outreach activities for this project are geared toward underserved small producers with limited resources. Specific production activities for this targeted group include: sanitation, biosecurity, feed and water safety, vaccination and health, rodent and insect control, and others. Implementation of practices will assist small producers in reducing microbial, physical, and chemical hazards during production and pre-slaughter stages.

For more information:
Willie Willis
Ipek Goktepe
Jimo Ibrahim
North Carolina A&T State University
1601 East Market Street
Greensboro, North Carolina 27411

North Carolina's Specialty Crops Program

This exhibit will feature the North Carolina Specialty Crops Program (SCP), a cooperative program between the College of Agriculture and Life Sciences at NC State University and the Marketing Division of the NC Department of Agriculture and Consumer Services. The exhibit will highlight SCP's Medicinal Herbs for Commerce Project, which began in 2004, when seventeen farmers across North Carolina were selected to receive technical assistance, seed, and a small grant to produce at least one acre of California poppy, dandelion, purple coneflower, or valerian. Farmers kept records of their production methods and experiences as part of a research endeavor to assess the potential of medicinal herbs to be a viable crop for North Carolina. Thirty more farmers will participate in the program in 2005 and additional herbs will be produced. Many of the participants are current or former tobacco farmers looking for ways to diversify and increase the economic viability of their farms. Because of the growing demand for organic herbs, all the participating farmers are growing their herbs following the National Organic Program standards. Project staff work to develop markets for the herbs that are produced and help the farmers build lasting relationships with buyers from around the country. Websites: www.ncherb.org; www.ncspecialtycrops.org; www.ncmedicinalherbs.org; www.ncorganic.org

For more information:
Woody Woodward and Libby Hinsley
NC State University/NC Specialty Crops Program
Mountain Horticultural Crops Research and Extension Center
455 Research Dr.
Fletcher, NC 28732

The Sustainable Farming Program

The Sustainable Farming Program at Central Carolina Community College in Pittsboro, NC is a unique and innovative program that addresses the training and education needs of new farmers. This program is unique in that the program focus is on sustainable and organic production and the typical instructor is an experienced farmer.
http://www.cccc.edu/Programs/Sustainable_Agriculture.html

For more information:
Robin Kohanovich
Central Carolina Community College
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Sustainable Agriculture Research and Education

Since 1988, the Sustainable Agriculture Research and Education (SARE) program has helped advance farming systems that are profitable, environmentally sound and good for communities through a nationwide research and education grants program. The program is part of USDA's Cooperative State Research, Education, and Extension Service, is managed in partnership with regional land grant hosts, and funds projects and conducts outreach designed to improve agricultural systems.

For more information:
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Helping Small-scale and Part-time Farmers Evaluate Alternatives; the Agricultural Alternatives Project at Penn State

To meet the educational needs of small-scale and part-time farmers, Penn State's College of Agricultural Sciences, with support from the USDA-Extension Service, the USDA-Risk Management Agency, and the Pennsylvania Department of Agriculture, has developed a set of 58 publications called "Agricultural Alternatives". Most of the publications introduce various alternative enterprises, while others discuss important farm management and marketing topics. The enterprise publications help producers evaluate alternatives by providing unbiased information on marketing, production requirements, cost of production, and resource needs. Each four to eight page publication also has a list of references, trade and marketing association information, and mailing and web site addresses where more information can be obtained.

Over the past three years the project has issued several new and revised "Agricultural Alternatives" publications. They include farm risk management publications entitled *Starting or Diversifying an Agricultural Business, Developing a Business Plan, Agricultural Business Insurance, Cooperatives, and Financing Small and Part-time Farms.* New and revised enterprise publications include *Organic Vegetable Production, Boarding Horses, Introduction to Aquaculture, Apple Production, Peach Production, Partridge Production, Pheasant Production, Small-flock Turkey Production, Red Raspberry Production, Red Deer, and Watermelon Production.* Some "Agricultural Alternatives" publications now being developed or revised include enterprise leaflets on garlic, wine grapes, cantaloupe, rabbits, earthworms, elk, dairy goats, specialized lamb, feeder lamb, spring and fall lamb, accelerated lamb, and business management leaflets on enterprise budgeting, agritainment, and roadside marketing.

Over the years the project has also developed enterprise leaflets on accelerated lambing, asparagus, beef backgrounding, beef cattle feeding, beef cow-calf, beekeeping, bell peppers, bison, bobwhite quail, broccoli, cantaloupes, cucumbers, dairy beef, dairy goats, dairy heifers, earthworms, eggs, elk, emus, fallow deer, feeder lambs, highbush blueberries, holiday lambs, meat goats, milking sheep, onions, ostriches, partridges, pheasants, potatoes, pumpkins, rabbits, red deer, rheas, snap beans, spring lambs, strawberries, sweet corn, swine, tomatoes, and veal. There are also publications available on

enterprise budgeting, fruit and vegetable marketing, drip irrigation for vegetable production, and irrigation for fruit and vegetable production. Individual "Agricultural Alternatives" publications can be downloaded in Adobe Acrobat (pdf) format on-line at http://agalternatives.aers.psu.edu.

The Agricultural Alternatives Project is managed by Lynn F. Kime (extension associate in Agricultural Economics) and coordinated by Jayson K. Harper (professor of agricultural economics). If you have any questions about the Agricultural Alternatives Project, Lynn can be reached via e-mail at lfk4@psu.edu or telephone at (717) 334-6271, ext. 313.

For more information:
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Manager, Agricultural Alternatives Project
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The Grazing Lands Conservation Initiative

"The Grazing Lands Conservation Initiative's (GLCI) mission is to provide high quality technical assistance on privately owned grazing lands on a voluntary basis and to increase the awareness of the importance of grazing land resources.

Established in 1991, GLCI is carried out through coalitions of individuals and organizations functioning at the local, state, regional and national levels. The coalitions include livestock producer organizations, scientific and professional grazing resource organizations, conservation and environmental groups, and state and federal natural resource and agriculture agencies."

For more information:
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National GLCI Coordinator
USDA NRCS
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Ft. Worth, TX 76115

Perishable Agricultural Commodities Act - PACA

The Perishable Agricultural Commodities Act, or PACA for short, is a Federal Law that provides protection to growers, shippers, distributors, and retailers dealing in fresh and frozen fruits and vegetables by prohibiting unfair and fraudulent trade practices, and by providing a forum that growers and others can use to settle commercial contract disputes. PACA is administered by the Agricultural Marketing Service of the U.S. Department of Agriculture and is funded almost entirely by license and complaint fees that are paid by companies that buy, sell, or broker commercial quantities of fruits and vegetables. This exhibit will tie directly into Mr. Coale's proposed presentation as a speaker (solicitation has been submitted) and provide detailed information on the various services of the PACA Program and other Fruit and Vegetable Programs such as Market News and Inspection Services. We will have hand outs and fact sheets available as well as CD's covering information on all Fruit & Vegetable programs.

For more information:
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USDA-AMS PACA Branch
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Manassas, VA 20110

Washington State University's Small Farms Team; Putting the Land Grant to Work for Family Farms

Washington State University's Small Farms Team (SFT) engages in Extension, research, and teaching activities that benefit small- and mid-sized family-owned

farms. The 40 SFT members help our state's farmers and ranchers manage the new realities of small-scale agriculture. These producers face development pressure, increased costs, and competitive global markets, but also enjoy advantages that come with smaller scale production. They can more quickly adapt to emerging markets, tend to be viewed positively by their local communities, and are poised to benefit from increased demand for farm products that are sustainably grown. SFT members represent a wide variety of specialties, and are based in WSU programs, state agencies and non-profit organizations.

At the farm level, SFT members apply the latest research to enhance agricultural production and marketing options for profitable, environmentally sound farming. This includes traditional as well as new crop and livestock alternatives. At the community level, SFT members work with local partners to develop sustainable food projects, promote improved nutrition, and spur economic development through processing and marketing infrastructure. The team also helps to enhance farm viability by increasing consumer purchases of locally grown food.

To meet the needs of these growers, WSU's Small Farms Team has adopted the following goals:

- Build public support for agriculture
- Help farmers adopt practices that are sustainable—economically, socially and environmentally
- Unify farmers and consumers in developing local markets and community food access
- Preserve Washington farmland for food and fiber production

For more information:

Marcy Ostrom
Washington State University
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The Economics of Organic and Grazing Dairy Farms

Ten Land Grant Universities plus Ontario have standardized accounting rules and data collection procedures to gather, pool, and analyze actual whole farm financial performance from many sustainable, small farming systems which previously lacked credible financial data that producers need for decision-making.

Over 150 individual management intensive rotationally grazing (MIRG) dairy farms contributed data to this project from 2000 through 2004. This is the largest and most comprehensive set of data for grazing dairy farms on the continent (this may also be true for the organic dairy farms which are a subset of the grazing data). Graziers are economically competitive.

The up-to-date conclusions of this USDA IFAFS grant can be accessed at *http://cdp.wisc.edu*.

Financial data in this report has been widely distributed to participating farmers, county extension agents, vocational-agricultural instructors, lenders and agricultural professionals both in and outside of the cooperating states.

Procedures here can be expanded beyond dairy farms, creating a new paradigm by which Land Grant Universities and other institutions use farm financial data to help farm families in all future enterprises.

For more information:

Kriegl,T. Endress, J. Tranel, L., Tigner, R., Heckman,Ed, Bivens, B., Taylor, P., Rudstrom, M., Rickard, T., Grace, J., Noyes, T., Little, C., Kyle, J., Williams, J.C., Molenhius, J., Frank, G.

University of Wisconsin Center For Dairy Profitability
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Poster Abstracts

Animal Waste Management Practices at Limited Resource Farms in Alabama

Duncan M. Chembezi, Kilungu Nzaku, Elicia L. Chaverest
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Animal production is a major segment of the U.S. economy. In 2002, U.S. farmers produced nearly 86 billion pounds of meat and poultry products, more than 70 billion table eggs, and 170 billion pounds of milk products. But in supplying households with hamburgers, pork chops, and ice cream, livestock and poultry farms also generate more than 350 million tons of manure that must be disposed of. Improper management of this manure has been associated with the Total Maximum Daily Load of waste and nutrients found in our nation's waterways. Under current federal regulations, livestock operations containing more than 300 animal units will have to obtain a discharge permit and submit a proper manure management plan. Land application is currently the most common and usually most desirable method of utilizing manure because of the value of nutrients and organic matter. Thus, recent policies and programs for increasing the efficient use of nutrients and protecting water quality from nutrient runoff all emphasize the importance of properly handling animal manure.

Under the new regulations, however, "concentrated animal feeding operations" (CAFOs) would be required to meet nutrient application standards as defined in a nutrient management plan. Unfortunately, these rules will not affect small livestock operations with less than 300 animal units because they are, individually, considered not to be major pollutants. Even though these limited resource farms may individually not be major polluters or stream waste load contributors, the collective impact of several limited resource operations in some localities may be significant on a particular stream segment. Meeting the aforementioned standards or regulations by CAFOs may be difficult and costly if a farm has inadequate land and manure must be moved to other crop and pasture land. Also, most livestock operations, including limited resource farms in Alabama, may not have enough land in pasture or crop production to efficiently manage their farm-produced waste and manure. Thus, the main objective of this study is to contribute to the understanding of how waste management disposal practices by limited resource farmers in Alabama impact water quality in localities in which such small livestock and poultry operations exist. The results could have significant implications, especially in states where livestock and poultry are a significant part of their agricultural economy.

For more information:
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Developing Marketing Niches for Small Scale and Minority Producers

Etaferahu Takele, Peggy Mauk
University of California Cooperative Extension

Small farm ownership declines and under representation of Hispanic farmers have been the basis for the University of California Cooperative Extension (UCCE) risk management educational program since 2000. Through funding of the Western Region Risk Management Educational program, the agricultural economics farm advisors in cooperation with commodity advisors conducted educational and research programs that reached over 500 clientele. These programs provided risk management tools including production and marketing

diversification, venturing in new production and marketing, as well as labor and personnel management

In 2003, UCCE broadened its outreach program further and cooperated with California State University San Bernardino (CSUSB) for USDA funding which led to the formation of the Inland Empire Small Farm Initiative (IESFI). This program provided the medium for networking with local and community agencies and further funding towards the development of new marketing channels and opportunities for farmers in the Inland Empire (counties of Riverside and San Bernardino).

This poster will discuss the cooperative efforts that have led to new funding for the development of new marketing ventures. It will also present the educational programs conducted that provided tools and skills for the feasibility and sustainability of farmers in southern California.

For more information:
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The UC Small Farm Program Agricultural Tourism Project

Desmond Jolly, Eileen Eckert, Kira O'Donnell, Kristin Reynolds
University of California, Davis

In 1998, the University of California Small Farm Program, led by director Desmond Jolly, launched the Agricultural Tourism Project. Agritourism has long been a cottage industry in California, with organizations such as Sonoma Farm Trails and Apple Hill Growers' Association marketing farm visits and related tourism operations to boost farm profitability. The purpose of the Agricultural Tourism Project was to expand agritourism to new areas, increasing its potential to strengthen ties between urban and suburban consumers and the farmers who produce their food; educate citizens about the value and importance of protecting farmland; and preserve small farms and the cultural heritage and resource they represent. This poster presentation chronicles the development and impacts of the Agricultural Tourism Project, from agritourism enterprises and farm trails maps to media coverage to evidence of ways the project has achieved its purposes.

For more information:
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Outreach Methodologies for Minority Small Farmers -what works, what doesn't work

Richard H. Molinar
University of California

Many methodologies are used to disseminate information to small farmers, e.g. group meetings, breakfast meetings, hands-on classroom, hands-on field, radio, television, video, DVD, audio tapes, newsletters, publications etc. Which methodology is used may vary from group to group depending on ethnicities, available media in the area, resources available to the communicator, and recipient characteristics (age, gender, education). Employing a Hmong program assistant has contributed immensely to the success of the small farm program in Fresno County, California. Besides helping to establish trust with the community and being fluent in their languages, Michael Yang makes numerous trips out to their farms to assist them with problems. Radio has been the most effective method utilized by Cooperative Extension for ´Hmong´ small farmers. Establishing partners such as USDA-FSA and USDA-RMA with the radio broadcasts has contributed to the diversity in topics and

resulted in greater visibility for all of the organizations. Spanish radio has seen only moderate success. Written materials can be very useful but our experience has seen a greater response from the train-the-trainer and CBO´s rather than from the individual farmer. We have materials in Lao, Hmong, Cambodian, Spanish, etc. The bottom line is "get to know your clientele", and do not assume that the same method works equally well with all groups of people.

For more information:
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Soil Solarization as a Methyl Bromide Alternative for Small Family Farms

Richard H. Molinar
University of California

Small Family farms and limited resource growers, many of them ethnic minorities, and organic farmers in the San Joaquin Valley and other agricultural areas in California are at a disadvantage when it comes to economically viable options for pest management.
Research and implementation projects conducted at UC Kearney Agricultural Center, and on-farm in surrounding areas over the past 10 years have provided guidelines and technical support for growers wishing to implement solarization and related techniques to provide non-chemical soil disinfestation for a wide variety of specialty crops. The method utilizes the heat produced by the sun which is trapped under a clear plastic over a period of several weeks during the warm summer months. This non chemical method can be utilized very easily by the grower, requires no permits, is ecologically sound and environmentally friendly, and safe to the family and workers.

For more information:
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Fresno, CA 93702

Market Driven New & Specialty Crop Production in Southern California

Ramiro Lobo, Gary Bender, Mark Gaskell, Ben Faber
UC Cooperative Extension

Globalization of agriculture and the proliferation of free trade agreements has resulted in increased foreign competition and declining profit margins for agricultural producers in San Diego County. This situation, combined with escalating production costs (resulting from high land values, expensive water, increased regulations, urban sprawl, and high labor costs) paint a difficult picture for most small scale agricultural producers in Southern California.

The rapid decline in the profitability and acreage of Valencia oranges caused by year round availability of Navel oranges illustrates the devastating effects these factors can have on local agriculture. The current situation with the North American Free Trade Agreement, and the pending entry of Mexican avocados to California will have similar effects on the local avocado industry.

Research efforts by the University of California Cooperative Extension Farm Advisors in Southern California shows that new or alternative crops can provide suitable options for growers who cannot compete growing conventional agricultural commodities. However, the research also shows that growers must have a good marketing strategy and grow these new or specialty crops with specific market windows or market niches in mind if they are to be successful. Results and field observations focusing on blueberries,

lychees, longans, guavas and dragon fruit will be used as examples to highlight our approach to identifying and evaluating new or specialty crops for commercial production in Southern California.

For more information:
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Evaluation of Grass Clippings as a Feed Source for Sheep

Anthony Knight, Dennis Lamm, Thomas McBride, Galen Brunk
Colorado State University
Cooperative Extension

Tremendous quantities of grass clippings are hauled to landfills daily creating a burden to landfills and a missed opportunity for livestock producers. With ever-increasing urban development involving bluegrass turf there is an excellent potential in a sustainable environment for feeding livestock fresh or ensiled grass clippings. Although some lawn and turf pesticides state on the label that the clippings may not be used for livestock consumption, the three major herbicides used on turf (2, 4-dichlorophenoxyacetic acid (2, 4-D), 2-methyl-4-chlorophenoxy propionic acid (MCPP), and Dicamba) have no label restrictions for livestock. Consequently, appropriately handled grass clippings could be available for feeding to sheep and cattle.

Three studies were conducted with sheep to evaluate the suitability of grass clippings as a food source. The first trial involved a comparison of growth and carcass characteristics of feeding fresh grass clippings as compared to other feeds. The second trial involved determining which carbohydrate source would work best to make the best quality silage. The third trial compared the growth of sheep on dried bluegrass clippings. Urine and blood from the sheep were analyzed using GCMS to determine the duration of elimination of 2,-D and MCPP. The data demonstrated that sheep gain on both fresh and dry grass clippings with carcasses having acceptable quality. In addition, the bluegrass produced high value silage when mixed with other carbohydrates. (The herbicide residue data is currently being analyzed and will be completed by July 1, 2005.)

For more information:
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Production Systems to Improve the Efficiency and Profitability of Small Livestock Family Farms

Dr. Ray Mobley
Florida A&M University

Limited resource farmers in North Florida and Southern Georgia have often experienced difficulties in developing and sustaining their farms. The complexities of their production systems often result in inefficiency and low profitability.
In light of the aforementioned problem, Florida A&M University (FAMU) has collaborated with the University of Florida (UF) and Fort Valley State University (FVSU) to develop a program that will help to alleviate production complexities for small farmers in North Florida and Southern Georgia.

The program under development is entitled "Production Systems to Improve the Efficiency and Profitability of Small Livestock Family Farms".

The primary objective of this project is to provide a unique, innovative, and cost effective animal health and production system. Specifically, the system will be

geared toward reducing capital and production costs such that efficiency and profitability will be realized.

For more information:
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Developing Hot Pepper as an Alternative Crop Enterprise for Small Farmers

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Florida A&M University
Jesusa C. Legaspi
USDA-ARS

Small farmers need alternatives to traditional crops in order to remain competitive or fully engaged in agriculture. In 1994, FAMU/CESTA, identified hot pepper (*Capsicum spp*) production as a potential alternative crop for farmers. Selected varieties were the Scotch Bonnet, Caribbean Red and the orange Habanero. The project dubbed 'A Hot Row to Hoe' focused on field studies, market identification and value added products. Field studies were carried out both on-station and on-farm and included response to inorganic and organic nutrient source, spatial arrangement, and effects of disease and insect organisms. Market identification and value addition addressed fresh fruit sales and processing. Participating farmers were initially provided with input materials and technical advice. Farmers have shown a high level of interest in the project and have been constantly involved in the developments. To date approximately 10,000 seedlings have been distributed to over 70 farmers and three cooperatives in 12 Counties in Florida and Georgia. Fruit yields up to 6,000 kg ha^{-1} at selling price of up to \$5.00 kg^{-1} have been realized from these crops. Insects and pathogens are not prevalent on the crop, although *Colitotricum* was identified in a green house observational study. Evaluations are being continued to provide technical information for producing the crop.

For more information:
C.S. Gardener
College of Engineering Sciences
Technology and Agriculture
Research and Extension Program
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Cultivating Success - Sustainable Small Acreage Farming Education Program

Theresa Beaver
University of Idaho

Cultivating Success is a unique community-based education program offering courses that can be taken individually or in a series to earn a certificate in Sustainable Small Acreage Farming and Ranching. The courses are open to academic students at the University of Idaho and Washington State University, and are open to community members for Continuing Education Units. Courses are offered in many counties throughout Idaho and Washington.

The program was developed collaboratively between partners at the University of Idaho, Washington State University, and Rural Roots. The overall program coordinated is based at the University of Idaho.

The objective of the program is to create and implement new educational programs that will increase the number and foster the long-term success of small acreage sustainable farmers and ranchers in Washington and Idaho. The program was developed for students and community members interested in starting a small acreage enterprise, working in agricultural

service and support sectors or policy development.

Farmers and other community resource people are brought into the classroom, field trips taken to farms and other agricultural venues, and farmer-student mentoring relationships are encouraged.

A 15-18 unit certificate is available for students who complete two required courses and one from each of three modules:

Required courses:
Sustainable Small Acreage Farming and Ranching On-Farm Apprenticeship

Business Module:
Agricultural Entrepreneurship

Sustainable Food Systems Module:
Science, Society and Sustainable Food Systems Field Analysis of Sustainable Food Systems World Agricultural Systems

Sustainable Production Module:
Organic Gardening and Farming
Organic Farming Practicum
Sustainable Agriculture

For more information:
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Firing Your Customer and Other Tips to Ensure a Successful Business

Mary Holz-Clause
Iowa State University

Why are some value added agriculture businesses successful and others fail? This proposed session will delve into recent research examining this issue. Some of the points that will be covered include research indicating adequate capitalization and operating capital, focus of purpose, management execution and determining which customers to fire and which ones to keep are key issues for success. Based on case studies of more than 30 value added agriculture businesses, the presenter will provide checklist of how to make a business more successful and will explain a new tool, called the Agricultural Marketing Resource Center that can provide producers training and education to help improve their odds of success. The Web-based Center features more than 75 commodities, and has more than 6000 links of marketing resources. Included in the Website, located at www.agmrc.org are extensive case studies and educational tools and templates. The Center averages more than ½ million visitors each month.

For more information:
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Ames, IA 50011

The Growing Growers Training Program: An apprenticeship program for market gardeners serving Kansas City

Edward Carey
Kansas State University
Katherine Kelly
Kansas City Center for Urban Agriculture
Mary Hendrickson, James Quinn, Lala Kumar
University of Missouri
Dan Nagengast
Kansas Rural Center
Craig Volland
Kansas City Food Circle

The Growing Growers Training Program facilitates on-farm apprenticeships complemented by workshops on critical skills to train new growers and improve the skills of existing growers to meet large demand for local and organically grown produce in Kansas City. The program is a

collaborative effort of K-State Research and Extension, University of Missouri Extension, the Kansas City Food Circle, and the Kansas Rural Center, and was established in response to requests by area organic growers for a training program to increase numbers of local organic producers. In the fall of 2003, we developed the components of the program, including a curriculum designed to help apprentices gain a set of core competencies through practical and theoretical training activities, including one-on-one training by host farmers, reading, workshops and farm tours. During the 2004 growing season 11 apprentices worked part time or volunteered on 8 host farms, and participated in a series of 11 workshops and farm tours over the course of the year. Based on self-assessment, apprentices felt they gained considerable skill in most of the core competencies. Both apprentices and host farmers expressed high satisfaction with the program. At the start of the 2005 season, demand for the program increased, with 25 apprentices with diverse backgrounds placed on 12 host farms. Workshop participation was not restricted to apprentices, and over 200 trainees paid to attend workshops during 2004, helping to generate funds to cover program costs. It is still early to judge program success, but 9 of 11 of the 2004 apprentices are engaged in full- or part-time market gardening in 2005.

For more information:

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High Tunnels for the Central Great Plains: A progress report

Edward Carey, Rhonda Janke, Sorkel Kadir, Kim Williams
Kansas State University
Lewis Jett, James Quinn
University of Missouri
Laurie Hodges
University of Nebraska
Dan Nagengast
Kansas Rural Center

High tunnels for the Central Great Plains is a multi-state research, extension and education effort begun in 2001 to investigate and promote the use of high tunnels (unheated greenhouses) as a tool for market farmers in our region. Replicated research high tunnels were established at four sites and crop production studies are ongoing, each with differing emphasis as follows:

Warm season crops – Columbia, Missouri
Leafy greens under organic and conventional management – Olathe, Kansas
Cut flower crops – Lincoln, Nebraska
Strawberry production systems – Wichita, Kansas

Comparisons of high tunnel and field production, and collection of meteorological data are conducted to assess benefits of these structures. On-station research is complemented by on-farm trials with multiple cooperators.

Our research results and additional information on high tunnels are disseminated through multiple extension and outreach activities, including
Research reports and extension publications,
Field days and farm tours,
A day-long workshop at the annual regional vegetable growers conference

A website , www.hightunnels.org for growers and educators
An E-mail listserv

High tunnels have been well-received by growers in our region, and are becoming an increasingly important component of their production systems, providing season extension, and crop protection benefits that rapidly return the cost of investment. Since 2001, more than 100 growers report adopting these structures, and interest remains high, indicating the likelihood of continuing adoption.

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Retirement and Estate Planning for Small Farm Families

Marion Simon
Kentucky State University
Sharon DeVaney
Purdue University
Miessha Thomas, Heather Gray
The Federation of Southern Cooperatives
Janie Hipp
University of Arkansas
David Wiggins
USDA – RMA

The Retirement and Estate Planning for Small Farm Families website includes case studies and educational materials targeting Women farmers, Native American farmers, African American farmers, and Small Family farmers. Links include governmental, non-profit and educational websites that provide research-based information on estate planning, investment planning, planning for medical needs, and short-term, interim, and long-term retirement planning strategies. There is an emphasis on estate planning, property transfer, and multi-generational family decision-making. Information is currently being added to the website. The goals of the web-based information site is to provide a source of research-based information to county extension agents, service providers, and family farmers to assist farmers with their decision-making. The website can be accessed at http://www2.ces.purdue.edu/farmriskmgt or at http://sharepoint.agriculture.purdue.edu/ces/farmriskmgt/default.aspx

Educational programs to date have included the 2004 Kentucky Small, Limited-Resource/Minority Farmers Conference, the 2005 USDA-1890 Small Farm Education Conference in Nashville, TN, and the 2004 Kentucky Women in Agriculture Conference. The project is sponsored through a USDA Risk Management Agency Outreach Cooperative Agreement.

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The "Third Thursday Thing" - Sustainable Agriculture Education at Kentucky State University

Marion Simon
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The Kentucky State University Cooperative Extension program's "Third Thursday Thing" Sustainable Agriculture Monthly workshops are designed to transition Kentucky's small farmers from a tobacco based agriculture to practical, sustainable options. Kentucky's topography ranges from the mountainous, highly erodible Appalachian region, through the karst central Kentucky region, to the Mississippi River bottomlands in the west. Kentucky's small farms numbering some 80,000 contribute more to Kentucky's economy

than do small farms in any other state. As small farmers and agricultural professionals with Extension, Research, USDA, state, non-profit and local agencies seek answers and methodologies to help sustain Kentucky's small farm families as they transition into sustainable farming systems that efficiently and effectively utilize the family's resources and the farm's resource base. As they develop programs, they need to evaluate cropping, production, and marketing systems that not only consider profitability and economic sustainability, but also consider the quality of life, safety, stress management, community issues and environmental quality. These systems must also reflect the diversity of the farming population and include an economic mix of traditional, alternative, low input, and organic production and marketing systems.

"The Third Thursday Thing" was initiated in 1997 as a Southern SARE-PDP project to educate agricultural professionals about such issues and topics. Immediately after the program started, farmers, consumer groups, and the public clambered to be included. " Third Thursdays" then became shared learning experiences that emphasized hands-on learning experiences. As a result of the program, farmers not only receive educational training, but they become directly involved in Extension and Research activities and programming. This helps researchers to focus their applied research into needed topic areas. "Third Thursdays" provide a mechanism for KSU and other researchers to directly interact with farmers and to identify farmers who share their interests and are willing to support, and participate in, collaborative projects.

"Third Thursdays" have had participants from over 100 Kentucky counties, eight European nations, and twelve states ranging from the east to the west coasts. Success stories include the development and passage of Kentucky's H.B. 391to provide a system for home based processing and local marketing and the development of the Partners for Family Farms to influence and expand local food initiatives, local food marketing systems, and value-added local meat marketing. Partners include farmers, consumers, the League of Urban Cities, the Kentucky Departments of Agriculture and Health and Human Services, the University of Kentucky, Kentucky State University, Morehead State University, Berea College, and Heifer Project, Intl.

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Nutrition, Economics, and Field Demonstrations of Sunshine Bass

Carl D. Webster
Kentucky State University

The goals and objectives of this IFAFS project are to determine nutrient requirements and evaluate practical diets for hybrid striped bass (sunshine bass) to allow farmers to feed the most nutritious, yet least expensive diets, so as to reduce operating costs; determine enzyme activities of larval white and striped bass; analyze the economics of production for sunshine bass so that this segment of the U.S. aquaculture industry can remain profitable, while allowing small and limited-resource farmers to be competitive by reducing production costs and providing economic data for management decisions; implement regional, multi-state demonstrations (field trials) of sunshine bass with interested farmers so they can learn proper aquacultural techniques and to develop markets for sunshine bass to allow stakeholders the potential to diversify farm incomes and crops; and to hold a national, science-based, producer-oriented meeting on the data generated from this project. This project will utilize a

system-wide approach to assist small and limited-resource farmers who will integrate nutrition, economics, information transfer, and field trials which will create a unified and multi-faceted approach for research, extension, and teaching of sunshine bass aquaculture. It will also attempt to incorporate farmer input so that methods to improve efficiency and profitability of sunshine bass for these farmers so they may reduce capital and input costs and/or diversify farm income and crop production.

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Mini Experiment Stations in Small Farm Communities

Dawn Mellion-Patin, O. Bandele
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Commodity specific and community-based experiment stations in the state of Louisiana traditionally conduct research that supports large-scale producers. More often than not, these efforts do not benefit small farmers who, oftentimes, have limited access to capital and use different production practices. The Southern University Agricultural Research and Extension Center agricultural scientist and extension employees recruit small farmers, who serve as model farmers, and use their farms as demonstration sites for farm tours and cultural practice demonstrations, with other small and mostly limited resource farmers. The primary objective of this arrangement is to provide community-based results from on the farm research in climates similar to the producers. The Extension agents and 2501 Program staff work with researchers at the university and in some instances private companies, to design and plan the demonstration(s). The focus of this outreach activity is to demonstrate the use of recommended cultural practices identified by the university in farm communities, utilizing farmers, their situations and environments. Farm tours and demonstrations are conducted where the participating farmers share their experiences (results) with other farmers. Instruction and demonstrations as a part of this activity focused on livestock health and agronomic crop variety selection. As a result of participating in these farm demonstrations and tours, farmers are better able to make decisions concerning their production practices, selection of varieties to use and overall management of their enterprises.

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Professional Support for Beginning Farmers

Kathy Ruhf
New England Small Farm Institute

One of the biggest challenges facing US agriculture today is farm entry. People who want to farm or have started farm businesses face considerable barriers, and traditional support services are not adequate to meet the needs of these diverse new farmers. The Growing New Farmers (GNF) project was a four-year comprehensive effort to establish a responsive service infrastructure to provide new Northeast farmers with the support and expertise they need to succeed.

Funded by USDA, GNF created a service provider Consortium with nearly two hundred member organizations from Maine to West Virginia. Project participants created a comprehensive, interactive website, conducted research, launched programs and pilot projects,

trained professionals, educated policy makers, and produced dozens of tools and resources for beginning farmers and their service providers. As a consequence, the Northeast has the most far-reaching and well-established service network for beginning farmers in the country – one that will be sustained beyond the end of its USDA support. This poster session will describe the project, display resources and feature the website.

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Learning from the Lacerator: Experience of a Farmer Research Group

Sue Ellen Johnson, Arnie Voeringer, Matt Rulevich, Roy Bergeron
The University of Connecticut and the New England Small Farm Institute

We will outline the experience we have had developing one of five farmer-led research groups funded by NESARE. We will present the origination and formation of the group, the progress of developing topic and finding additional funds, the membership dynamics, and evolution of the group. Twelve farmers have been involved with this research group. We will present their comments on the research group process and discuss the overall outcome of the research group process on networking and program delivery.

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Positive Response to "New" Best Management Practice for Chicken Producers

Terry E. Heinard
USDA - NRCS

Overwhelming positive response by chicken producers is seen to the opportunity for cost share of Best Management Practice by USDA-Natural Resources Conservation Service (NRCS) Caroline County, located on the Eastern Shore of Maryland is a serious agricultural production county, with 75% of the farms in the USDA "small farm" category. Maryland NRCS offered for cost share through the Environmental Quality Incentives Program (EQIP), concrete heavy use area pads to be installed at the loading doors of broiler and roaster chicken houses. Chicken producers receive and deliver multiple flocks during the year, utilizing mechanical equipment that creates soil erosion and manure deposition at the ends of the chicken houses. The access doors to many of the chicken houses are located on soils with high water tables and are adjacent to drainage ditches, this practice allows farm management to affect a significant reduction in environmental impacts with a small out of pocket cost. The heavy use area pads provide a solid surface that reduces the erosion caused by loading unloading of chicken flocks. This surface also provides an impervious surface where any spilled organic material such as bedding and manure can be removed and stored in an animal waste storage facility. Since this practice was first offered in 2002 and for each successive year, the response has exceeded the available funds for assistance.
This practice has a simple design, can be installed by the producer at little out of pocket costs, and the EQIP program will reimburse producers for materials and labor at an established flat rate.

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Teaching Integrated Parasite Management (IPM) to Sheep and Goat Producers

Susan Schoenian
University Maryland Cooperative Extension

Most sheep and goat producers are small-scale, owning fewer than 30 females. An obstacle to profitable production is gastro-intestinal parasites (worms), the primary health problem affecting grazing small ruminants. Worms have become increasingly difficult to control because of widespread drug resistance. Maryland Cooperative Extension developed an educational program, "Integrated Parasite Management (IPM)" to teach sheep/goat producers modern, practical methods for effective worm control. IPM workshops are coordinated through county extension offices and producer groups. Teaching format is 2 hours lecture/discussion and 2 hours hands-on. Since 2004, seventeen workshops have been held in six states, attracting 334 participants from 10 states. 374 adults and youth participated in educational programs which did not include the hands-on part. Based on the results of pre- and post-tests, producers have increased their knowledge of internal parasites by 30 to 40 percent. 334 producers and extension agents have been certified in the use of the FAMACHA© system. Grant funds, which paid for equipment and travel, are also being used to develop educational materials and fund parasite-related research. As a result of the Maryland IPM program, over 200 producers are using the FAMACHA© eye anemia chart to make deworming decisions. Producers have implemented various other recommended IPM techniques (e.g. fecal egg counts).

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Mexican Farmers in Michigan: Preliminary Results

Juan Marinez,
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Javier Franco, Farmer

The tremendous growth of the Hispanic population in rural America presents new opportunities as well as challenges for agricultural agencies and rural communities. For example, in Michigan, the population of Hispanic farmers increased by 163% from 1997 to 2002. However, few research projects have attempted to explore how this new social phenomenon is developing in this area. The purpose of this exploratory study is to understand the motivations that Mexicans want to operate their own farms, how they are organizing the operation of these farms, and the barriers or problems that they face in this activity.

The research was developed between August 2004 and May 2005. Several reasons exist as to why the Mexicans want to operate their own farms in Michigan. First, for the Mexicans, the agriculture is part of their cultural background. For Mexican farmers, agriculture has a strong relationship with values traditionally maintained and affirmed within a family. The agriculture is part of a lifestyle that they love and prefer. There are strong relationships between the types of farming and organization that they operate in their home country, and now we see the same in Michigan. The organization of the farm is around the family nucleus. The

Mexicans organize their farms as a family business, where members of their families take some roles in the farm. Since the small holdings are not adequate to support the entire family, Mexican farmers hold off farm employment. Various types of barriers or problems were identified which were organized in two main categories: (a) barriers directly related to the farmer –inside-barrier- and (b) barriers not related directly to the producer –outside barrier.

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Targeting a New Audience: Acreage Owners Workshops - Scotts Bluff County, Nebraska

Tom Holman
University of Nebraska Extension

Based on numerous requests from a number of people who had recently moved into the area, faculty stationed at the Panhandle Research and Extension Center formed a committee to address the clientele's problems. The nature of these calls indicated that the recent immigrants were unfamiliar with Western Nebraska and the unique climate of the area. Developing the program required that we target this new audience. Ours was a unique and successful approach to audience identification.

The Scotts Bluff County Assessor was asked to develop a spread sheet that included: Assessor's number, name, address, acreage, valuation of improvements and date improvements were constructed. He queried this for all properties not within the city limits. This query created a list of over 1500 potential clientele. This list was reduced by eliminating known land owners, parcels over 40 acres, improvements less than $50,000.00 in value, and improvements older than 1985. The resulting list was 450 potential clients.

As a result of our efforts, we designed three workshops in the spring of 2004 averaging 36 participants, one in the summer of 2004 with 18 participants and two in the spring of 2005 averaging 12 participants. At each of these programs, participants were asked for their future program needs as part of the evaluation. The evaluations indicated knowledge gained by 65% of the participants and 46% indicated they would make operational changes.

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Enhancing Research and Extension Support for Small Farms: the Cornell Experience

Anu Rangarajan
Cornell Small Farms Program

In this poster we will summarize our experiences with fostering institutional change within a leading land grant university. In 2000, Cornell University established a Small Farms Task Group to identify small farm needs and to strengthen research and extension programs for small farms in New York State. Major programming gaps and barriers identified in 2000 included:

- Lack of research and education targeted specifically to small farms
- Lack of visibility for existing efforts that serve, or could serve, small farms
- Lack of CALS departmental support for, and appreciation of Cornell Cooperative Extension educators' work with small farms

- CALS/CCE focus on production efficiency and maximizing profits
- Lack of understanding of, interest in small farm needs

Since that time the Task Group, together with the Cornell Small Farms Program, has helped to produce a significant shift in attitudes and programming efforts within the Cornell Cooperative Extension (CCE) system. Successful efforts include:

- The Cornell Small Farms Website, www.smallfarms.cornell.edu
- Small Farm Quarterly magazine
- CCE Grants Program for Small Farm Education
- Professional development programs for CCE and other service providers
- Small farm discussion groups and mentoring programs
- "Accountability Meetings" to engage farmers in program planning and evaluation

As a result of these and other efforts, small farm operators in New York have a growing appreciation for Cornell, particularly for Cornell Cooperative Extension. Next frontier: Enhancing CALS research and teaching programs to better support small farms.

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Generations of Women in Agriculture and Economic Solutions

Mary Mafuyai-Ekanem, Sheilda Sutton
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Women play vital roles in agriculture, but face stiff challenges and limited opportunities in competing for resources in our society. North Carolina Cooperative Extension Program's Women in Agriculture Program (WAP) has empowered women access to a wider array of resources than historically available to them. The goal is to help women plan their preferred futures as they strive to overcome socioeconomic crises in times of change. WAP targets women who are farm/ranchland owners, operators, managers, laborers, wives, marketers and retirees with women organizations, leaders and others delivering education and technical support.

As a result of the partnership program, more women and beginning farmers/ ranchers are now becoming interested in acquiring capital, assets, investing in agriculture and managing crises. Many are making sound business decisions; financial practices; and new business ventures; product quality certification enabling them to meet market demands; while others modified production systems, established agro-tourism, and purchased product liability insurance coverage. In the past five years, the economic impact translates to approximately 1,700 women and their families increased their net farm income by $16,749,500. WAP societal benefits include well informed volunteers, improving quality of life for limited resources audiences and communities.

Poster presentation of organizational structures, selected cooperatives, businesses and other successful WAP initiatives.

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Women Willing Workers Change Agents in Agricultural Communities

Mary Mafuyai-Ekanem, Mary James, Patricia Shapard, Sherri Lee, Sennie Liasane, Nelson James
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With tobacco buy-out now final, farmers are dealing with great anxiety as they transition from tobacco dependency into a more uncertain future. It is difficult for small-scale producers to find investment capital and other resources to operate a profitable farm and maintain their families. Production inputs are expensive, energy (such as gas, heating, and cooling), labor, and other costs all have been steadily increasing. Farm prices received by growers have not kept up with production costs. Creative producers sell enough to cover their production costs while the rest operate at a loss year after year. Some producers are finding solutions in cooperatives, especially bulk purchasing of farm inputs and group marketing with multiple outlets. Many farmers are searching frantically for alternative crops and profitable enterprises to replace loss from tobacco crops. For these reasons and many more, area women organized the Willing Workers Small Farmer Cooperative (WWSFC), Inc to educate farmers in taking advantage of bargaining opportunities and resources that are traditional unavailable in the community.

The WWSFC display will show how the Women in Agriculture Program structures and strategies brought dynamic social changes with improvements to small family farms and communities in Southeastern North Carolina.

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Evaluation of Garlic's (*allium sativum*) Anthelmintic Properties to Control Internal Parasites

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Parasites are known to cause diminished health, growth rate and feed conversion. Producers wanting to treat this problem in accordance with organic standards are using natural materials. To date, however, there is limited scientific evidence regarding the potency and effectiveness of these substances. Consequently, there is a need for controlled experiments to support the use of these materials. One substance that is actively antibacterial and may have good antiparasitic properties is Garlic (*allium sativum L.*). The purpose of this study was to evaluate a commercial, organically approved garlic product (Gempler s) as a dewormer and to establish its dosing rates for goats. A team consisting of a researcher, an extension specialist and a graduate student assigned twenty female Boer goats, weighing 40 kg, to four groups (0, ½ tsp, 1 tsp, and 2 tsp), of five animals each. A comparison of fecal egg counts (FEC) (for roundworms and *coccidia* eggs), packed cell volume (PCV), FAMACHA scores, and body weight (BW) in GI parasite infected goats *vs* untreated animals was conducted. Data were analyzed using the SAS general linear model (GLM) analysis. The results of the FEC (roundworms and coccidian eggs), FAMACHA scores, PCV and BW are represented in Table 1. FEC for roundworms was found to be significantly positively correlated with FAMACHA scores ($r = 0.323$, $P \leq 0.0015$) and significantly negatively correlated with PCV ($r = -0.338$, $P \leq 0.0009$), but not with any other parameters. The FEC for *coccidia* eggs was significantly negatively correlated with PCV ($r = -0.207$, $P \leq 0.0475$): not other correlations were significant. High FECs for roundworm and *coccidia* eggs were observed when low PCV values were recorded. PCV's negative correlation with

FAMACHA scores indicates the presence of anemia ($r = -0.332$, $P \leq 0.0009$). The organically approved garlic extract did not reduce FEC or alleviate anemia at the concentrations tested.

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Evaluation of Three Compost Sources for Strawberry Production

Mary Helen Ferguson
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Strawberries are an important horticultural crop for the United States, accounting for over one billion dollars of income in 2004, and one that small farmers can find profitable. Compost is frequently utilized in organic production systems, and restrictions on methyl bromide use have contributed to increased interest in alternative disease management strategies. Previous work has found compost to be effective in suppressing a variety of soil-borne diseases, including black root rot of strawberries. However, the successfulness of compost incorporation as a component of disease management has varied according to the source of the compost, among other factors. Our experiment investigates the effects of three North Carolina compost sources on disease, plant growth, nutrient availability and uptake, and yield in a strawberry plasticulture system in Goldsboro, N.C.

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Plasticulture as an Alternative for Small Farmers

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Until recently, tobacco was the primary means of generating income on small farms in North Carolina. Tobacco demand has dropped in today's economy and with the tobacco buyout now a reality, efforts are needed to find alternative crops that current and former tobacco farmers could grow and market. The plasticulture system has helped an increasing number of farmers reach these goals. The Robeson, Columbus and Duplin County Centers of the North Carolina Cooperative Extension Service, NC A&T State University, and the Tobacco Trust Fund Commission are working with farmers in Southeastern North Carolina to plant acreage in specialty crops that provide relatively high per-acre returns. Today's vegetable growers are looking for new ways to achieve higher-quality produce, superior yields and early spring markets. A plastic laying machine and a water wheel transplanter was purchased for this region to help alleviate some of the cost farmers must incur. In 2004, ten farm families planted twenty-six acres of produce using plastic mulch and drip irrigation. A survey of these farm families indicated they generated over $50,000 in farm income. This year three new producers have been added. Over 180 small and part-time farmers have visited these on-farm demonstration sites during extension sponsored tours.

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Assessing Farm Safety Intervention among Youth and Rural Farmers in North Carolina|

John Paul Owens, Benjamin Gray, Anthony K.Yeboah
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The agricultural sector contributes significantly to the economies of Ashe and Alleghany Counties located in northwest, North Carolina. Because of their rural location, many of farms located in these counties rely on adolescents to provide a significant amount of farm labor. Agricultural work is both physically demanding and has one of the highest accident rates of any occupation. County Extension programs and researchers recognize the necessity of using youth labor but also the importance of working with farmers to decrease conditions that result in harm to younger workers. Consequently, Extension has implemented educational programs that target youth (14 to 17 years-of-age) to instruct them on taking precautions to avoid accidents and to share these lessons with their parents about general farm safety awareness. The objective of this research project was to assess Ashe and Alleghany Counties' Cooperative Extension "farm safety field day model" intervention program that targets rural youth and farm families. Data from a pre-test and post-test field day evaluation questionnaire and focus groups on safety awareness were analyzed. The results indicated a favorable evaluation of the field days and improved post-tests scores following the safety education intervention. The students' farm safety knowledge improved and families reported making farm safety a priority. The results also indicated that through youth involvement in the safety field education experience safety cautions were communicated to other family members. The evaluation also identified additional safety concerns that should be addressed in future farm safety educational programs.

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Metal Adsorption Efficiency of Granular Activated Carbon made from Peanut Shells with Phosphate Treatment

Hong Yang, Salam Ibrahim, Chung W. Seo
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Agricultural by-products, such as peanut shells, contribute large quantities of lignocellulosic waste to the environment each growing season, but few, if any, value-added uses exist for their disposal. North Carolina currently ranks 4th in peanut production, producing 165 metric tons or 9.3% of United States production. This represents a potential of 40,000-45,000 tons of peanut shells produced each year that have little value. This creates a need to convert these by-products into useful, value-added products. Metal contamination of wastewater is a serious and ongoing problem. Since contaminated wastewater can easily find its way into both surface water and ground water, this problem should be of great concern to anyone who drinks water obtained from these sources. This study was to attempt to solve two problems of considerable environmental significance to the United States in general and North Carolina in particular by converting peanut shells to activated carbons for use in adsorption of select metal ions. Milled peanut shells were pre-treated with 50% orthophosphoric acid by soaking the shells for 24 hours. The treated shells were pyrolyzed at different temperatures (350, 450, 550, and 650˚C) and times (1 and 2 hrs) with air or nitrogen. The resulting activated carbons

were washed with deionized water until no remaining phosphate acid and then dried at 110 ˚C for 24 hours. The prepared carbon was evaluated for adsorption efficiency of Cu, Pb, Zn, Cd and Ni in a laboratory prepared solution and was compared with commercial carbons (NORIT C GRAN with phosphate activation and DARCO 12 × 40 with steaming activation, North America, Atlanta, GA). The peanut shell-based carbon with excellent metal ion adsorption was prepared at 450 ˚C for 1 hr under air. Such carbon has much higher metal ion absorption than commercial carbons. This study demonstrates that a low-cost, high volume, renewable commodity by-products such as peanut shells could serve as a source for activated carbons with metal ion removing potential, and also shows that peanut based carbon has good commercial potential to be used for removing metal ions from wastewater treatment systems. It could also increase the income of peanut farmers, especially small-scale farmers.

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Affordable and Efficient Sanitizing Techniques for Washing Vegetables Produced by Small Farmers

Hong Yang, Maysoun Salameh, Salam Ibrahim, Chung W. Seo
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A major problem facing rural America today is the rapid disappearance of small farms. This trend is expected to continue due primarily to the lack of adequate income producing crops and low cost technologies to help small farms maintain sustainable incomes. This economic picture could be improved significantly if farmers had access to a low cost efficient processing system for washing and packaging vegetables. With such a system on-site vegetables processing farm operations would be cost productive enabling the small farmer to market directly to consumers, reduce marketing costs, and remain competitive with larger farming operations. Currently, there is no simple conventional sanitizing method to ensure microbial safety of produce. However, chlorine dioxide and ozone have shown to improve the microbiological safety of fresh fruits and vegetables and has potential as a sanitizing agent that would be affordable to limited income growers. The purpose of this study was to evaluate the efficacy of a simple wash method using oxine (chlorine dioxide) alone or in combination with warm water. Fresh vegetables obtained from local sources were submerged for 5 minutes in one of four conditions: (1) tap water, (2) 45 C warm water, (3) chloride dioxide, (4) warm water followed by chloride dioxide, and (5) ozone. Sample homogenates were analyzed for total bacterial counts, *Enterobacteriaceae,* and *Staphylococcus aureus*. The degree of disinfection was monitored for log microbial counts reductions versus type of treatment. Results indicated that tap water could remove 50% of the initial microbial loads. Warm water at 45 C was able to further reduce microbial loads. Ozonated water with 1 ppm showed 3 log reduction of microbial population with 5 min. This study demonstrated that oxine and ozone were very effective in reducing microorganisms including pathogenic bacteria in green leafy vegetables. These agents can be used as efficient sanitizers to simply and quickly wash self-produce on small farms.

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Benefits of Cover Cropping in Conventional and No Tillage Vegetable Production

Charles W. Raczkowski, Marsha McGraw, Keith Baldwin, G.B. Reddy
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Two major contributing factors that have been identified as major determinants of degradation of soil and loss of productivity in the southeastern Piedmont region are: (1) excessive soil losses from improper agricultural management, and (2) degraded soil properties from excessive tillage using conventional farming methods. This study is aimed at small-scale vegetable producers that are in need of improving the quality of their soil. The objective of this study is to assess the combined use of compost, cover crops and no tillage on the improvement in soil quality relative to conventional soil management practices. In particular, we would like to know how organic matter affects soil physical, chemical, and biological processes, and how improved processes can effect crop production over the short and long-term. The study began in the fall of 2003 and an overall soil quality assessment was conducted after the harvest of pumpkins in 2004 and during the growing season of butternut squash in 2005. Quantitative indicators of soil quality included soil aggregate stability, soil pore size distribution, plant available water holding capacity, infiltration, soil respiration, microbial biomass carbon and nitrogen, C:N ratio, and CEC. This poster will emphasize results relevant to the effects of cover cropping in conventional and no-tillage.

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Managing Woodlots for Supplemental Income

Godfrey Ejimakor, Erin Sills, Sarah Warren, Benny Gray
NC A&T State University and
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The need for alternative or supplemental sources of income will intensify among small farmers in North Carolina especially the tobacco buyout program and the consequent end of the tobacco program. Small woodlots, if properly managed, could serve as supplemental or alternative income sources. This uses survey data to assess the management practices of small woodlot owners in selected counties of North Carolina and Southern Virginia. Results from the survey of small woodlot owners are presented relative to the motives and management practices of the owners.

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Molecular Tools for Truffle Farmers: Rapid Identification of Tuber melanosporum on Tree Roots

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Black truffles (*Tuber melanosporum*) are prized edible mushrooms that form through a symbiotic mycorrhizal association between tree roots and the fungus. Truffles command a hefty price in the world market ($400-$2000 /lb), and due to a favorable regional climate truffle

production has the potential of becoming a significant cash crop for North Carolina farmers. Seedlings of oak (Quercus) and hazelnut (Corylus) infected with the Tuber fungus are produced and distributed by commercial nurseries for transplanting into prepared soils. However, the difficulty of identifying truffle fungi on tree roots and the long lag time (4-10 years) before the first truffles are harvested makes farming truffles risky business. Our laboratories have recently developed DNA-based tools for rapidly and inexpensively verifying the presence of T. melanosporum on nursery and field rootstock. These developments will favor the success of truffle cultivation in North Carolina by allowing farmers to verify root stock quality and to monitor the effectiveness of management strategies on truffle growth in their fields. Small farmers in North Carolina are already engaged in truffle cultivation. This technology will help them to determine the success of their cultivation practices, by knowing if the truffle fungus exists in the root stocks and plants in the fields prior to maturation and fructification of truffles. Successful production of truffles by small farmers in North Carolina will lead to huge financial benefits on the parts of the farmers. Therefore, a tool that will help the small farmer in the line of production of truffles should be welcome at this point in time.

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Business Plan Development for Shiitake Mushroom

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The state of North Carolina has experienced economic devastation in the furniture, textile, and tobacco industries triggered by globalization and the outsourcing of jobs. These economic setbacks have overwhelmed the tobacco industry with over $10 billion assessed over 10 years to growers and owners of quotas, which are licenses issued by the government to grow tobacco. Larger farmers are expected to survive; however, the small-scale, limited resource farmers will survive if there are no alternative enterprises suitable for adoption.

Therefore, through a continuing project to initiate training and assistance in edible and medicinal mushroom, we present a training module that can be utilized by rural communities in North Carolina, in particular, Halifax – Edgecombe - Wilson Presidential Enterprise Community and tobacco dependent counties. This module focuses on the business plan development in rural North Carolina with emphasis on shiitake mushroom. However, there is a significant need for micro-entrepreneurial training in counties outside of the study area. Therefore, this module can be used for various value-added enterprises.

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Value-added Marketing of Edible and Medicinal Mushroom

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The state of North Carolina has experienced economic devastation in the furniture, textile, and tobacco industries triggered by globalization and the outsourcing of jobs. These economical

setbacks have overwhelmed the tobacco industry with over $10 billion assessed over 10 years to growers and owners of quotas, which are licenses issued by the government to grow tobacco. Larger farmers are expected to survive; however, the small-scale, limited resource farms will survive if there are no alternative enterprises suitable for adoption.

Therefore, through a continuing project to initiate training and assistance in edible and medicinal mushroom, we present a training module that can be utilized by rural communities in North Carolina, in particular, Halifax – Edgecombe - Wilson Presidential Enterprise Community and tobacco dependent counties. This module focuses on the value-added marketing of shiitake mushroom encouraging mushroom growers to promote various outlets for fresh and dehydrated shiitake.

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Production of Specialty Cut Flowers in a Tobacco Transplant Greenhouse

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The recent passage of the tobacco quota buyout program is forcing many tobacco farmers to look for additional sources of income. Profits from additional and/or alternative crops grown in tobacco greenhouses could replace some of the lost income. A series of four greenhouse experiments are being conducted in a privately-owned tobacco transplant greenhouse near Ruffin, N.C. to determine the suitability and feasibility of several cut flower species and production systems. Production systems tested included float trays which closely duplicate the tobacco growing system; 10 inch bulb pots; plastic crates, and lay-flat bags. The production systems, except the float trays, worked well for most cut flower species tested. However, of the flower species tested, ageratum, gomphrena and sunflower did not perform well in summer production. Lisianthus grew too slowly in winter production. An economic analysis of the production systems is currently being conducted.

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Taking Rural Tourism to the Next Level

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During the last ten years, tourism development has exploded as a means of economic and community development in rural areas where traditional industry is waning. One of the biggest issues in developing the tourism product, however, is getting an entire community to work together. It is human nature to regard a neighbor in the same industry as competition, especially in rural areas because of the historic need for citizens to be independent and entrepreneurial to survive. But, in tourism, where visitors are attracted to an area because of the wealth of activities, community members must work as a team to attract and serve visitors successfully.

Madison County is one of the most tobacco-dependant counties in North Carolina. Increasingly, farmers in Madison County are trading their traditional crops for an alternative means of income. With its unparalleled natural beauty, rich

agricultural heritage, and proximity to Asheville, NC, the county is a prime visitor destination. However, the remarkable advantage is the inherent collaboration within the agricultural community.

This case study highlights the esprit de corps among Madison County farmers in their desire to develop value-added services on their property. In particular, there was a strong desire to expand their knowledge base, confidence and interactions with other community members by means of a thorough training series offered throughout the year. As well, an "internal familiarization tour" of the county was planned to afford farmers the means to visit and learn about the other tourism sites in the county.

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Knowledge and Attitudes of Producers and Consumers toward Ag Biotechnology

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This poster presents information collected as part of a bridge grant project awarded by the USDA, under the Initiative for Future Agricultural and Food Systems (IFAFS), to Tennessee State University (TSU). Research scientists and Extension professionals from North Carolina A&T State University, the University of Arkansas, Fayetteville, and the University of Arkansas at Pine Bluff collaborated with TSU on the project. Trained moderators and facilitators convened 1-hour to 1½ - hour focus groups meetings to gather answers to questions from focus group participants in states collaborating on the project. Using findings from the meetings, this poster presents information on farmer and consumer attitudes towards agricultural biotechnology. Group responses to targeted questions were used in assessing how consumers and producers perceived agricultural biotechnology. Four specific areas of inquiry were explored in the focus group meetings: knowledge of the science of biotechnology, key biotech issues, perceptions of risks and benefits of biotechnology and the role of government. A qualitative approach was used in analyzing data collected. Specific findings from the study and policy implications of findings are presented.

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Organic and Conventional Farming Systems Soil Quality Comparison

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In 2001, a replicated farming system experiment was established in Northwest Ohio to gain a better understanding of what occurs with crop production and soil changes when farmers transition from one management system to another. The treatments chosen for this experiment represent a range of conditions experienced by farmers transitioning either to organic or other more diversified crop management systems. Overall, the experiment is addressing ways to maintain production and economic viability while building soil quality. Five replicate blocks were established of each of five farming systems: #1 – No-till conventional corn, soybean, wheat rotation; #2 – Integrated reduced input tilled corn, soybean, wheat rotation; #3 – Organic corn, soybean, wheat rotation; #4 – Organic forage and

grain rotation; #5 – Organic multi-crop rotation. Four years of multiple site soil sampling 0-15cm deep were analyzed for the following soil quality properties: total soil organic matter, particulate organic matter, total nitrogen, microbial biomass nitrogen, nitrate nitrogen, and bulk density. After four years, total soil organic matter was 2.9% in farming system #1, compared to 3.7% organic matter in farming system #2 & #4, and 3.4% organic matter in farming system #3 & #5. Soil data indicate that the organic systems are shifting to greater biological control of the nitrogen cycle.

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Bringing Southern Ohio Farms to Life Through the "Small Farm College"

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The Ohio State University Extension

Increased clientele requests from new and small farm owners indicated a need for a comprehensive farm ownership and management program. The "Southern Ohio New and Small Farm College" was developed for landowners wanting to make the most of living on a small farm. Forty-two individuals from 11 counties participated in the eight-week program. Class topics included: *Getting Started in the Planning Process, Sources of Assistance, Agricultural Legal Issues, Inventory of Natural Resources, Financial and Production Record Keeping, Crops and Horticulture, Animal Production,* and *Marketing*. The course included a single day tour of successful alternative agricultural enterprises within the southern Ohio region. The clientele of the New and Small Farm College reported an average farm size of 86.2 acres with an average length of ownership of 6.15 years. According to a pre-program survey, only 35.5 percent had previously attended an Extension educational program. Participants were made aware of available resources through instructors representing OSU Extension, government agencies, elected officials, and private industry. Post-program surveys indicated 82.1 percent of the participants developed a plan or changed their existing plans for use of their property after attending the New and Small Farm College. Participants evaluated the overall program a 9.3 out of a 10.0 scale, with 100 percent stating they would recommend this program to other small farmland owners.

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Development of a Task Force to Provide Education and Leadership to the Emerging Meat Goat Industry

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Meat goats, as an enterprise, did not have supporting infrastructure relative to a commodity based organization, university sponsored education and research, or well known marketing channels. To address these needs, the *Ohio Meat Goat Industry Task Force* was formed with a mission to enhance meat goat production and marketing through education and practical experience. The objectives are: 1) identify and access emerging ethnic markets having a preference for goat meat in their diet, 2) develop producer networks,

alliances and/or cooperatives to meet demands of emerging markets, and 3) provide leadership for education and research.

Extension members of the task force have developed the *Ohio Meat Goat Production and Budgeting Fact Sheet* as a guide for establishing this enterprise. Extension Educators have designed and conducted regional workshops, seminars, and on-farm tours to transfer knowledge to 1200 participants. Education, production, and marketing topics are discussed in the *Buckeye Meat Goat Newsletter*.

Leadership development has been a primary objective of the Ohio Meat Goat Task Force. Producer members have been instrumental in the formation of the *Buckeye Meat Goat Association* for the purpose of promoting and marketing commercial goat meat. Three producer-driven marketing networks are developing relationships with ethnic and faith-based consumers as a social approach to building the meat goat industry. This foundation infrastructure will create value-added economic development for refugees in our urban centers and small farms in the rural/urban interface.

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The Ohio Ag Manager-A Team Approach to Providing Farm Management Information

David Marrison, Chris Bruynis
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Due to budget cutbacks, the number of State Specialists in the area of Farm Management in Ohio was reduced to two in July of 2004 and then to one by December 31, 2004. Recognizing the need to help maintain OSU Extension's farm and agribusiness management programming the Ohio Ag Manager Team was established in the summer of 2004.

The team has developed the Ohio Ag Manager website (http://ohioagmanager.osu.edu/) and published a monthly electronic newsletter for Ohio's Agriculture and Business Community since July, 2004. The specific goal of the monthly electronic newsletter is to deliver information relevant to the management of agricultural businesses in succinct articles. Each article is linked to full reports or websites providing the manager with more detailed information. Seven to ten articles are included each month. Some of the issues discussed include budgeting, labor management, ag lending, farm custom rates and estate planning.

The newsletter is currently emailed to the 88 County Extension offices in Ohio and to 259 farmers and agribusinesses who have subscribed to the Ohio Ag Manager electronic list serve. Many of these articles are utilized by County Extension Educators in their country newsletters and news columns. Other farm organizations and publications such as the Small Farmer Magazine, Ohio Farm Bureau, Ohio Farmers Union, The Ohio Farmer Magazine have utilized articles in their publications. In addition, national publications such as National Hay & Forage Growers Magazine have sought and received permission to utilize articles from the Ohio Ag Manager Newsletter.

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A Hands-on Approach to Teaching Pesticide Recertification

David Marrison, E. A. Draper, R.H. Zondag, S. J. Hudkins, L.C. Ober
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The State of Ohio has 17,500 farmers with private pesticide applicator's license to spray restricted chemicals in agricultural and horticultural operations. OSU Extension assists the Ohio Department of Agriculture by providing the mandated re-certification training. Each private applicator must receive three hours of re-certification credits every three years. Extension Educators transformed the teaching style for this mandated training from lecture oriented to a hands-on approach. We show how County Agricultural Agents can "think outside the box" to develop interactive teaching units for even the toughest agricultural subjects.

It was the goal of the teaching team to revamp the instructional format of the re-certification sessions for the counties of Ashtabula, Lake, Geauga, and Trumbull Counties in Northeast, Ohio. Eight sessions were taught in 2004-2005 with 371 private pesticide applicators participating. The teaching team incorporated hands-on diagnostic problems for weed identification, chemical selection, sprayer diagnostics, personal safety equipment, and nozzle selection. Changing the instructional format from a teacher centered to a student-centered approach has received many compliments. Anecdotal statements from the post-program questionnaire included comments like: "Great improvement over old format", "best Extension program I have attended" and "better than before-I really learned".

Attendees indicated that 99% (n=368) preferred the hands-on teaching approach. In addition, 100% indicated they understand personal protective safety equipment better, 99% indicated they plan to evaluate their sprayer for potential problems, 99% indicated they better understand the environmental concerns when applying pesticides, and 97% better understand the new herbicides as a result of the hands-on teaching method.

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Bridging Gaps in Programs and Services

Linda J. Brewer, Garry Stephenson, Anita Azarenko
Oregon State University Extension Service

The Extension Service's dominant pattern of directing programming toward large-scale, commodity agriculture leaves information gaps. Growers with highly specialized enterprises or cropping systems must sort through large volumes of university-generated information to find fragments relevant to their concerns. Oregon State University Extension Service has put new life into the old concept of grower guide by effectively assembling information focused on specific grower interests, bridging crucial information gaps. These "growers' guides" use market segmentation to reach highly specialized niche marketers and practitioners of emerging farming systems. Three new grower guides integrate widely dispersed information so growers with specialized interests may easily access pertinent university services, publications, and faculty expertise.

In addition to assembling targeted information, the guides have created new and valuable partnerships between O.S.U. and clientele groups. For instance, The Organic Farmers' Guide to Oregon State University was a collaborative effort between O.S.U. and Oregon Tilth, the major organic certification agency in the region; support from the clientele group came in terms of financial resources and review. Concept and content of the

Specialty Seed Growers' Guide has been driven by the community of interest.

These guides are, first of all, tools for their intended audiences. Their development also reflects participatory thinking in a variety of nominal and substantive ways. In subtle ways, these publications are symbolic of a paradigm shift and are reshaping the land-grant institution, enhancing the relevance of its mission, and sustainability of its methods.

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Designing a Management Skills Development Program: A Texas Example

William Thompson
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Tomorrow's Top Agricultural Producer (TTAP) is a program designed by Texas Cooperative Extension to develop business management skills of "Career Oriented" producers. Unique aspects of this program are the development of a complete, detailed business plan throughout the course of the program, and a mentoring team that was matched with each operation upon completion of the program. The first TTAP class began in the fall of 2002 and formal instruction concluded in January 2004. Mentoring activities were conducted throughout the remainder of 2004 and into 2005. Final evaluations are in the process of being concluded for the actual program and the mentoring experience.

The first TTAP class encompassed 115 hours of instruction during four sessions. Session I covered the basic business plans and the planning process. During this session participants also began an assessment of their operations through a resource inventory, SWOT analysis and an introduction to financial statements and financial analysis. Session II focused on financial planning and development of a managerial accounting system. Between sessions II and III class participants completed the transition to the new accounting system and completed a risk assessed financial analysis of their operations. Session III addressed the marketing components of the business plans. The business plans were completed in Session IV. Participants were introduced to their mentoring committee and made formal presentations of their plans.

Comments and suggestions from participants, educators and administrators were collected and revisions of course content and delivery for the second class beginning in November 2005 are underway.

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Integrated Small Scale Farms

Robert Godfrey
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A Model Integrated Small Farm for the U.S. Caribbean and Pacific Islands M. McGuire, R.W. Godfrey, J.W. Brown, M. Marutani and J.E. Rakocy, Agricultural Experiment Station, University of the Virgin Islands, St Croix, College of Natural and Applied Sciences, University of Guam.

Island agriculture faces challenges such as limited land and water, small local markets, competition from imported goods and high costs for inputs. This project was designed to evaluate a small scale, integrated farming system for use in the Caribbean and Pacific islands. In the USVI

a 2 ha farm was established to produce tilapia, fruits and vegetables.

The farm can collect and store rainwater in a 4200 m^2 catchment and a 500 m^3 storage pond. There are seven 80 m3 fish tanks, a150 m3 effluent storage pond, 1.2 ha of intensive crop production and a water and effluent distribution system. Early work has focused on evaluating crop varieties, establishing markets and increasing productivity. In Guam, the farm was established on 1.5 ha of land. The animal component consists of goats on rotational pasture, layer hens on sloping straw bedding and tilapia in a recirculating aquaponics system. The plant component consists of fruit and vegetable production with a vegetable-green manure rotation planted between rows of fruit and vegetable crops, the plant component of the aquaponics system and pastures. Effluent from the aquaponics system is transferred to the fruit/vegetable production unit. The layer bedding is composted and used as mulch along with the green manure in the fruit/vegetable unit. The primary problems that have been encountered have been in the areas of plant protection, labor efficiency and marketing. Financial analysis of both systems will allow us to establish design criteria in order to optimize the profit potential of the integrated system.

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Predicting Nutrient Availability from Organic Materials

Craig Cogger
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Organic and conventional farmers consistently rank nutrient management as a top priority informational need. A key concern is nutrient availability from organic materials.
With the Initiative for Future Agriculture and Food Systems, we initiated two projects to address organic nutrient management. The first is designed to improve our ability to predict nitrogen availability from organic soil amendments. The second evaluates nutrient management in the context of a holistic systems experiment, comparing effects of 12 organic management systems on vegetable crop production, soil quality, weed and pest pressure, and production economics.

Organic soil amendments: Composted and uncomposted forms of broiler litter, yard debris, dairy manure solids, and rabbit manure, along with other organic sources of nutrients, were assessed in field N uptake experiments at two locations. Each material was also evaluated using laboratory incubations and modeling. We found that we could predict N availability based on C:N ratio and degree of decomposition of the materials. Broiler litter supplied 20-25 lb available N per ton as-is, uncomposted rabbit manure supplied about 5 lb N/ton and yard trimmings supplied about 3 lb N/ton. Dairy solids and composted yard trimmings did not supply enough N to be used as fertilizers.

Organic systems: Treatments in the vegetable production experiment (12 combinations of amendment, cover crop, and tillage) were developed based on extensive input from local organic farmers. Preliminary results show that amendment affected soil organic matter, bulk density, potassium, infiltration rate, and crop yield but has not had a measurable effect on aggregate stability or compaction. Tillage affected compaction and infiltration. Analysis of weeds,

biological activity, and production economics, along with further analysis of soil physical properties is in progress. We plan to continue this experiment for at least 10 years.

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The Economics of Organic and Grazing Dairy Farms

Tom Kriegl
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Ten Land Grant Universities plus Ontario have standardized accounting rules and data collection procedures to gather, pool, and analyze actual whole farm financial performance from many sustainable, small farming systems which previously lacked credible financial data that producers need for decision-making.

Over 150 individual management intensive rotationally grazing (MIRG) dairy farms contributed data to this project from 2000 through 2004. This is the largest and most comprehensive set of data for grazing dairy farms on the continent (this may also be true for the organic dairy farms which are a subset of the grazing data). Graziers are economically competitive.

Because most organic producers experience a multi-year transition into organic production, the stages of progression of individual organic farms is being analyzed separately in this project, to better understand and fairly compare the financial performance of organic dairy farms. The average dairy farm that is receiving "organic prices" and has supplied data is economically successfull.

The up-to-date conclusions of this USDA IFAFS grant sponsored project #00-52501-9708 can be accessed at *http://cdp.wisc.edu*.

The financial data in this report have been widely distributed to participating farmers, county extension agents, vocational-agricultural instructors, lenders and agricultural professionals both in and outside of the cooperating states.

The procedures used here can be expanded beyond dairy farms, creating a new paradigm by which Land Grant Universities and other institutions use farm financial data to help farm families in all future enterprises.

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