Integrating Farmer-driven, Value-added Enterprises Into Sustainable Agricultural Systems

Abstract:
We developed and tested a model for providing information and training to sustainable family farmers who would like to create farm-based, value-added enterprises. In support of this service, we completed a report on the keys to creating successful enterprises and established an information bank of resources supportive of these enterprises. Among our findings, we discovered that assistance is best when provided to farmers in a whole systems way, yet facilitated individually. We also discovered that farmer-to-farmer networking is critical to the success of value-added enterprises, and organizational networking is critical in building a service support infrastructure.

Project Objectives:
1.) Lay a foundation of information and support that will help accelerate farmer-driven, value-added enterprise development for sustainably produced farm products in the Southern region.

2.) Gather base-line information on the systems and concepts that are keys to the successful development and marketing of farmer-driven, value-added agricultural products. Disseminate this information to farmers, agricultural information providers, researchers and educators in the region.

3.) Establish an information bank of programs, services, facilities, and other business and entrepreneurial resources supportive of farmer-driven, value-added enterprises. Make the information accessible to farmers, agricultural information providers, researchers and educators in the region.

4.) Develop and test a model incubator service designed to provide information and training to sustainable farmers and farm-based entrepreneurs about business and marketing in a one-stop setting when and where they need it. Provide information about this model to farmers, agricultural information providers, researchers and educators in the region.

Introduction:
Statement of Problem, Rationale and Significance
Although it is generally agreed that sustainable agricultural systems must be ecologically
sound, socially responsible and economically viable, many of the recent efforts towards building economic sustainability have been limited to reducing purchased input costs (4, 7). Little systematic attention has been applied to developing integrated processing and marketing systems that will increase the net earnings for farmers who are utilizing sustainable production practices.

Many farms and rural communities in the southern United States have been decimated by the changes in economics due to the increasing industrialization and globalization of agriculture. Prices for raw farm products have remained stagnant even as the costs of farm inputs have continued to rise. Much of the profitability in the agricultural economy has shifted from farm production to other sectors of the industry–processing, distributing, transporting and retailing (14).

Meanwhile, a growing number of farmers and ranchers throughout the southern United States are reversing the longtime trend of only producing raw products while letting someone else handle processing, packaging, labeling and marketing. They are incorporating entrepreneurial techniques into their sustainable farming systems by adding value to their products and services, and marketing them more directly to consumers who are hungry for “green” products. Instead of letting their profits be eaten up by high input costs and low wholesale prices, these farmers and ranchers have decided to take a bite out of the middlemen by bringing the dollars for those activities home (11).

Yet, most farmers work in isolation as they develop the systems and expertise needed to create and market value-added products. Many who attempt to add value struggle needlessly with research and development, while innumerable others don’t know where to turn for marketing and business expertise. To date, resources, training and opportunities for information exchange have lagged behind the growth of farmer interest in this arena (7, 9).

A survey of Cooperative Extension field staff in New York state concluded that although opportunities for alternative (and value-added) farm enterprises were great, “there is a large and under served population of farm and rural families in need of support and educational programs in the area of farm diversification, development of alternative enterprises, and innovative marketing strategies” (13).

Even where services and facilities are available, they often are under-utilized because they don’t reach entrepreneurs in farm-based communities. A survey on rural entrepreneurship in four states—Iowa, North Dakota, Maine and Arkansas—conducted by the Council of State Planning Agencies concluded that, although many programs are in place, more should be done to encourage business start-ups. Two of the strategies recommended by the study are to develop a program catalog of services available to entrepreneurs since information on services is difficult to obtain, and to expand entrepreneurship training into rural areas (2).

There is a clear need to build an integrated system of support for farmer-driven entrepreneurial innovations. Business, marketing and entrepreneurial training assistance for farm-based entrepreneurs is needed, as well as identification and creation of better access to resources and services when and where rural entrepreneurs need it.

Literature Review

There is a small but growing body of literature in the field of farm-based value-added processing and marketing. Edberg (5), Ikerd (8, 9), and Devore (4) point out the need for sustainable, innovative marketing to take a more prominent role in creating sustainable agricultural systems. These authors all agree that new marketing channels need to be pursued for sustainable systems to reach real economic viability. The Southern Region SARE/ACE program has also included an emphasis on locally-owned value-added marketing within the regional agricultural systems priority area for 1998 funding in recognition of its importance to sustainable agriculture.

Encouraging farmers to become participants in value-added processing and marketing of their products as a way to capture more economic activity on the farm is discussed in the literature of Smith (16), Worstell (19), Richards (13), Hassebrook (7), and Edberg (5). Worstell concludes that the creation of locally-owned, value-added enterprises offers the best opportunity for removing the key constraint — lack of marketing alternatives — to more sustainable agriculture in the southern U.S.

The importance of small business entrepreneurs to rural economic revitalization as well as farm sustainability is documented in the literature of the Texas Department of Agriculture (17) and the Western Entrepreneurial Network (18). They build a strong case for putting resources into small business entrepreneurs in rural areas instead of major corporations, concluding that the small businesses will create more jobs, production, sales and
innovations.

Many research studies have found the need for more business and entrepreneurial information and training to be focused on family farmers. A Cornell University study found that “there is a large and underserved population of farm and rural families in need of support and educational programs in the area of farm diversification, development of alternative enterprises, and innovative marketing strategies” (15). Following a survey of rural businesses built on sustainable agriculture, the Center for Rural Affairs recommended an increase in technical assistance for rural entrepreneurs with an emphasis on business training, market development, and recordkeeping (3).

Other studies have found a need for better access to resources that already exist. Surveys conducted by both the Council of State Planning Agencies (2) and the Texas Department of Agriculture (17) concluded that, although many programs to help farm-based entrepreneurs are in place, more should be done to encourage rural business start-ups.

Bibliography

Materials and methods:

This project had three main phases: 1) a survey of farm-based entrepreneurs to identify key principles to successful farmer-driven, value-added enterprises, 2) an inventory of resources available to farm-based entrepreneurs and information providers for assisting value-added enterprises and marketing, and 3) development and testing of a model service to deliver entrepreneurial training and assistance to sustainable family farmers wishing to develop value-added enterprises.

As we completed activities in each phase, we also carried out dissemination, training and other education throughout the course of the project.

Farmer Entrepreneur Survey

After identifying and compiling demographic information on nearly 60 farm-based enterprises in the Southern region that were adding value to sustainable agricultural products, we completed in-depth phone interviews with 14 farm owner/entrepreneurs. A project committee of successful farmers, marketing specialists and agricultural economists chose the 14 survey participants to create a representative diversity of products, scale, and location within our region.

A personal interview survey, with structured questions allowing for open-ended responses, was used. The survey focused on identifying the systems and underlying concepts—rather than particular products or market niches—that were keys to successful enterprises. It also was designed to identify barriers to success, opportunities for success, helpful resources, and possible training leaders. We agreed to publicize all survey results anonymously so participants would be encouraged to supply financial and other personal information.

Dr. Robert Jenkins at the University of Tennessee Department of Agricultural Economics took the lead on designing the survey instrument. Holly Born, an economic and marketing specialist with the National Center for Appropriate Technology (NCAT) implemented the survey along with other technical specialists at NCAT.

Combining information from this survey along with information from interviews with 24 farmer entrepreneurs done by Keith Richards of Southern SAWG in 1995, Holly Born wrote a report entitled “Keys to Success in Value-Added Agriculture.” The report contains sections on: a) “Sustainable profits” that stresses the economics of adding value to raw products and creating a unique market, b) “Translating uniqueness into a sustainable competitive advantage” that discusses how to maintain a competitive advantage in the marketplace, c) examples of farmers’ experiences with adding value, d) keys to success in both the short run and long run with many examples in farmer’s own words, and e) a list of resources.

NCAT published this report and made it available free of charge both in print form and electronically through the ATTRA sustainable agriculture information service. As of the end of 2002, over 750 copies of the publication had been distributed. Individual “hits” on the electronic version of the publication on ATTRA’s web page numbered over several hundred per month.

Inventory of Resources

In phase two, we compiled an inventory of marketing, business and entrepreneurial resources available to farm-based, value-added enterprises in the Southern region. We began with the resources that the farmers and ranchers from the enterprise survey actually identified as useful. Then, databases from ATTRA, the national SARE program, the Southern Rural Development Center, and the Southern SAWG were utilized to identify other possible resources. Finally, state agricultural marketing services, state Cooperative Extension Services, small business development centers, and other sustainable agriculture and entrepreneurial business organizations were queried for leads.
Holly Born with NCAT coordinated and implemented the inventory through phone calls and emails augmented by extensive research. The farmers, marketing specialists and agricultural economists on the project team reviewed the inventory design and process.

NCAT staff added the inventory information compiled through this project to compatible information from a joint project with Heifer International to produce a resource directory entitled “Adding Value Through Sustainable Agriculture Entrepreneurship: Overview and Resources.” The directory lists approximately 200 resource organizations, along with selected books and websites. Resources are indexed by states in the South, along with regional and national listings. National resources are indexed by categories such as technology, research & development, feasibility studies, business planning, working capital, management & expertise, marketing & sales, and business incubators. Each resource listing includes contact information and a description of service(s) provided.

The resource directory has been made available free of charge in print and electronic form by the ATTRA sustainable agriculture service. The directory has been publicized in the Summer 2002 Southern SAWG newsletter and will be publicized in a Spring 2003 ATTRA newsletter.

Model Service for Training and Assistance

In the third phase of the project, a model service for training and assistance—called an “incubator service” in the original proposal—was developed and tested with six clients.

The model service was designed to help farmers, farmer organizations and farm-based entrepreneurs hatch new businesses or expand current businesses that add value to sustainably produced farm products. The model service provided technical business support and training services tailored to each client’s need as requested. Using a whole-systems approach, the service was designed to nurture clients all the way through the business process from production to point-of-purchase. At every step along the way, the service assisted clients to be more sustainable in their practices and to capture a greater economic return from the marketplace.

A description of the model service and a call for applicants was distributed to nearly 100 leaders of farmer and sustainable agriculture organizations within the southern region. Follow up calls were made to key contact people in each southern state to make sure farmers in the sustainable agriculture community knew about this opportunity. Potential clients were asked to fill out a simple application form, and then interviewed by phone.

Thirteen farmers and farmer organizations applied for the training and assistance, and seven were chosen as the pilot candidates. (One farmer group later dropped out due to lack of production capacity.) The project committee selected the pilot clients based on the following criteria:

1.) The applicant must be a farmer, or a partnership headed up by farmers, or a farmer-owned cooperative or association. The project must be farm-based.

2.) The farm or farms involved must be using some sustainable production methods and have a commitment to becoming more sustainable.

3.) The project or desired work must fit under the definition of adding value. It must be some procedure or process that brings more economic return to the farm by adding value to the work or products or by-products of the farm.

4.) The project or desired work must be feasible — it must have a reasonable chance for success.

5.) The project or work must be based within the 13-state region of Southern SARE.

6.) The pilots chosen will need to have a range of diversity by level of operation (start-up to already running), resource level (a limited resource operation must be represented), and type of product if possible.

The six clients we worked with were:

1.) A family dairy in Mississippi that was already bottling some of their milk and processing some into a value-added product, but was experiencing expansion barriers.

2.) Two family farmers in Georgia who had formed a partnership to produce a flavored dried beef product, but had several production, packaging, and marketing barriers.

3.) A family farmer in Oklahoma who raised heritage turkeys for live poult sales, but was trying to expand into meat sales.

4.) A family farmer in Louisiana who raised heritage poultry and eggs for sale to New Orleans markets, but was experiencing major production and expansion barriers.

5.) A farmers’ cooperative in Louisiana that produced cut and packaged vegetables on a small scale for direct sales, but needed to increase their capacity.
6.) A farmland preservation group in Georgia who wanted to increase local sales of value-added products as a strategy for keeping farmers on the land.

Keith Richards of Southern SAWG conducted interviews with each client to gather further information about the general context of their operation, specific information about their value-added enterprises, what their barriers and needs were, and to discuss possible areas of assistance. Four of these interviews were done in person; two were done by phone. After this discussion, a memo of understanding was drafted that outlined the services Southern SAWG would provide and a timeline. In all cases, the outline was amended as services were delivered and needs changed.

Southern SAWG facilitated a range of services provided by consultants, other organizations, and farmer entrepreneurs. We did not attempt to duplicate services where adequate ones already existed. Instead we identified appropriate services for our clients, facilitated contacts and service delivery, monitored success, and acted as a guide to our clients.

Services facilitated included:
1) Identification of needs and goals in developing an enterprise.
2.) Whole farm planning.
3.) Financial analyses.
4.) Planning to restructure debt and ownership.
5.) Web page design and setting up internet marketing.
6.) Brochure and promotional material design.
7.) Scientific product analyses.
8.) Research on health benefits of products and allowable claims.
9.) Information on organic regulations.
10.) Travel assistance to conferences.
11.) Travel assistance to visit other farms.
12.) Farmer-to-farmer information exchanges.
13.) Identifying resources for professional education and networking.
14.) Identifying resources for technical production questions.
15.) Identifying resources for creating local food systems.
16.) Training on sustainable agriculture, value-adding, labeling and food networks.

Other Dissemination of Information and Trainings

During the course of this project, 14 workshops on value adding and entrepreneurship were conducted at Southern SAWG annual conferences. These educational sessions were chosen based on feedback about farmers' needs that was learned at least partially through this project. Many sessions included presenters who were partners and participants in this project. Over 400 people attended these workshop sessions.

In addition, Keith Richards conducted a training on value-added marketing and on-farm entrepreneurship at a workshop sponsored by Heifer International at Tuskegee University in June 2001. Approximately 50 people attended this workshop.

We also conducted a specific training on developing producer networks and local markets by adding value and profitability to products at Carrollton, GA in November, 2002. This workshop was jointly sponsored by the Carroll County Farmland and Rural Preservation Partnership’s Sustainable Agriculture Committee, the Carroll County Cooperative Extension, and the Rolling Hills Resource Conservation and Development Council. Approximately 50 people attended this workshop.

We ran a feature article on the findings from our farmer entrepreneur survey in the Fall 2000 issue of Southern Sustainable Farming, Southern SAWG’s periodical newsletter. We also ran three articles on entrepreneurial family farms that were adding value to their products over the course of this project. These articles were chosen specifically to compliment the work of this project. Each issue of Southern Sustainable Farming was mailed free to over 5,400 farmers, researchers, Cooperative Extension personnel and sustainable agriculture organizations within the Southern SARE region.

Appropriate sections from this final report will be mailed to all participants in the project, and to our growing network of individuals and organizations interested in increasing farm-based value-added enterprises. It will also be posted on the Southern SAWG website.

**Research results and discussion:**

Farmer Entrepreneur Survey

In the first phase of our project we wanted to identify systems and underlying concepts that were keys to successful farm-based enterprises. Several themes emerged from our interviews with the 14 farmer entrepreneurs in 2000 that were supported by data from earlier
interviews with 24 farmer entrepreneurs in 1995. We grouped these themes into keys to success for the short run and keys to success for the long run.

Keys to Success in the Short Run:
1.) Start small and grow naturally.
2.) Make decisions based on good records.
3.) Create a high-quality product.
4.) Follow demand-driven production.
5.) Get the whole family or partners involved.
6.) Keep informed about regulations, the industry and the marketplace.
7.) Plan for the future.
8.) Do continuous evaluation.
9.) Have perseverance.
10.) Obtain adequate capitalization.

Keys to Success in the Long Run:
1.) Focus on what you do best and where you have a competitive advantage.
2.) Establish a loyal customer base and serve them first.
3.) Choose something you love to do — and something that fits your personality and goals.

We also asked the successful farmer entrepreneurs to tell us which resources were helpful for them and which were not. In general, they responded that no one resource was extremely helpful, but they got little pieces of information from several sources. Helpful sources mentioned included other producers and producer associations, technical manuals, trade publications, state departments of agriculture, economic development agencies, local health inspectors, lenders, universities, other businesspeople involved in their industry, and the internet. Unfortunately, Cooperative Extension, universities, and small business development agencies were also listed by many as least helpful.

A full discussion of these keys to success and other findings from our interviews can be found in the publication “Keys to Success in Value-Added Agriculture” available free from ATTRA; 800-346-9140 or on the internet at: www.attra.org.

Inventory of Resources

Through the process of compiling the resource directory, numerous contacts were made with other organizations providing marketing, business and entrepreneurial services. This step gave us a lay of the landscape and an opportunity to network with several experts in the field. In particular, technical specialists at the ATTRA sustainable agriculture information service were able to add several valuable contacts to their network of resources they use when answering questions regarding sustainable agriculture.

While approximately 200 organizations were listed in the final directory, most of the resources were not directly focused on our goal of supporting sustainable farm-based, value-added enterprises. We found that many of the organizations supporting general small business and entrepreneurship development did not have expertise in agriculture. And many of the organizations that support sustainable farming didn’t offer business and entrepreneurship services. Even when agricultural organizations did have this focus, many of the better-funded resources and services were geared toward larger manufacturers or agri-businesses, while a number of the smaller non-governmental agencies only offered peripheral services, such as education on direct marketing.

This points out a basic challenge inherent in developing such services. Funders—whether public or private—push for big impacts, so organizations are forced to either gear their services toward large processors and large projects, or provide broad services that reach hundreds of farmers with more general information. Neither of these approaches adequately assist individual family farmers in becoming successful entrepreneurs. Additionally, the whole concept of assisting farm-based value-added enterprises and farm-based entrepreneurship is so new that few full service models have been developed.

The inventory of resources did help us identify a handful of agencies and organizations with services directly geared toward farm-based, value-added enterprises. A particularly good agency is the Center for Profitable Agriculture (formerly the Agricultural Development Center) jointly supported by the University of Tennessee and the Tennessee Farm Bureau. Since 1998, this agency has evaluated over 70 farm-based, value-added projects, and published over 70 informational guides to value-added enterprises. Although they only operate in the state of Tennessee, this agency could be used as a model for other states that are thinking of supporting value-added enterprise development. The Center for Profitable Agriculture, P.O. Box 1819, Spring Hill, TN 37174; 931-486-2777; www.cpa.utk.edu.
Other agencies that are pioneering this work include the Oklahoma Food and Agricultural Products Research and Technology Center, the Texas Coastal Plains Agri-Business Incubator System, and several cooperating programs at Kentucky State University and the University of Kentucky that are focused on small farms and sustainable agriculture. We also found a few private consultants who offered services geared toward value-added enterprise development, including Frazier, Barnes & Associates in Memphis, TN.

Model Service for Training and Assistance

Testing a model service delivery was perhaps the most important aspect of our project. By actually working with the farmers and farm organizations, we received immediate feedback about what worked and what didn’t work. We quickly found out what assistance farmers needed to create viable value-added operations, and we learned if other providers had services that really met our client farmer’s needs.

Although we only worked with six different farmers and farm groups, we feel that many lessons learned will be applicable to other service providers. The diversity of our clients’ needs provided a good test for model services.

In general, Southern SAWG received positive feedback on the content and delivery of assistance provided. Most of the farmers, in anonymous evaluations, rated the information and technical assistance they received as having been applicable to their needs and helpful. Overall, they felt like they were provided with good sound advice. As one client stated, the assistance opened doors to get them on the right path.

In a few instances, clients felt that assistance could have been better. For the most part, criticism centered around the inability for Southern SAWG to follow-through as completely as desired on assistance requests and commitments. This view is shared by Keith Richards, who coordinated the service delivery. We realized over the course of the project that we sometimes tried to do more than we had adequate personnel and funding capacity to achieve.

Clients had several recommendations for the future. They noted the importance of continuing with and expanding the work of this program, including the focus on providing financial assistance (especially for travel), information, planning guidance and network development. They also called for bringing more people with expertise into this work, and for providing more written resources to local farmer organizations on marketing and business.

Ten Most Important Lessons Learned

1.) The development of better services to help farmers, farmer organizations and farm-based entrepreneurs hatch new businesses or expand current businesses that add value to sustainably produced farm products is greatly needed. Even when people differed slightly on how to provide the service or how to finance such a service, everyone involved with this project felt that it was urgently needed.

2.) Even though the focus of the project was on adding value, farmers need assistance in a whole systems, whole farm manner. Assistance needs to be delivered in a whole systems way or at least coordinated by someone who helps the farmer keep whole farm goals in mind. For instance, assistance solely on processing and market development will not be adequate for a farm that also has enterprise barriers related to production, business management, or even planning.

3.) Providing assistance in a whole systems manner must also include an aspect of personal counseling or coaching. Often thinking patterns and emotional patterns of the farm manager are as big of barriers as technical know-how. Some of the most important assistance a consultant can provide is more interpersonal than technical.

4.) Assistance is much more useful if it is delivered in a “one stop” system. Most farmers don’t have the time or skills to hunt and peck through numerous resources, hoping to find information on value-added enterprise development one kernel at a time. If one agency or one consultant can facilitate the complete service delivery, farmers are much more likely to stick with the process until they get what they need.

5.) When farmers are matched with consultants who can talk through problems with them and help them create a plan, the farmers are more motivated to take calculated business risks and create value-added operations. One-on-one attention is crucial both for developing new ideas and overcoming fears.

6.) The most valuable sources of information are producer entrepreneurs who have gone through several trials and errors already, and created successful enterprises. Yet these producers may not have the time or teaching skills to train others. Assistance providers can
take advantage of these practicing experts by facilitating a visit to their farms, facilitating a
discussion between the experienced entrepreneurs and farmers needing assistance, paying
the producer entrepreneurs for their time, and following up the visit with further analysis and
information.

7.) Even though we can identify general principles for success in creating value-added
enterprises, there is rarely one learning and development approach that works for everyone.
Assistance must be tailored to each client, along with numerous opportunities and channels
for clients to provide feedback on the assistance, the quality of help being provided, and
reassessment of future goals.

8.) Consultants or organizations that facilitate value-added enterprise development need to
know how to access other appropriate experts, including business planners, accountants,
bankers, legal experts, and marketing professionals. If some sort of database or network of
possible consultants and organizations could be developed and maintained, it would provide
an important tool for service providers.

9.) Organizations and agencies that focus on sustainable agriculture need more expertise in
small business management and entrepreneurship, and organizations that focus on small
business management and entrepreneurship need more expertise in on-farm applications.
There is a need for networking and collaboration between organizations with good business
and entrepreneurship information and organizations that work with family farmers and the
sustainable agriculture community.

10.) Prospective farmer clients, consultants, facilitators, organizational directors, and
evaluators all need to be involved in planning, implementing, and evaluating program efforts.
Dedicated participation will help ensure that the services are farmer-friendly, organizationally
sound, and contain appropriate training procedures.

Participation Summary

Educational & Outreach Activities

Participation Summary

Education/outreach description:

Publications generated by this project:

1.) Born, Holly. 2001. Keys to Success in Value-Added Agriculture. ATTRA and Southern
SAWG. Fayetteville, AR.

2.) Born, Holly. 2003. Adding Value Through Sustainable Agriculture Entrepreneurship:
Overview and Resources. ATTRA, Southern SAWG, and Heifer International. Fayetteville,
AR.

Publications that contain information generated by this project:

Richards, Keith. 2000. Farm-Based, Value-Added Enterprises: Updating the Keys to

Education and outreach programs and events:

Southern SAWG Annual Conference, Jekyll Island, GA, January 1999 –
1.) “Adding Value to Your Products, Adding Profit to Your Farm” by Duncan Hilchey, Luke
Green, Alyce Birchenough, and Stephen Carpenter.

Southern SAWG Annual Conference, Jekyll Island, GA, January 2000 –
2.) “Getting Started in Dairy Processing” by Leonard Bergey, Fleming Pfann, and Vicki
Dunaway
3.) “Adding Value at Every Step” by Peggy & Richard Sechrist
4.) “Creating a Farmer-Consumer Partnership for a Sustainable Food System” by Betsy
Lydon

Southern SAWG Annual Conference, Chattanooga, TN, January 2001 –
5.) “Making It On the Farm: Why Add Value?” by Jennifer Gleason
6.) “Eco-Labeling, Value-Added Marketing, and On-Farm Entrepreneurship” by Keith
Richards
7.) “Increase the Value of Your Flowers” by Mark Cain

Heifer International Marketing Workshop, Tuskegee, AL, June 2001 –
8.) “Alternative Methods of Marketing Incorporating Value-Added Marketing and On-Farm
Entrepreneurship” by Keith Richards.

Southern SAWG Annual Conference, Chattanooga, TN, January 2002 –

Project Outcomes

This project, along with other on-going efforts by Southern SAWG and other organizations, has already helped to heighten the awareness of the need for more resources and successful strategies focused on helping family farmers add value to their raw products and market them effectively. In the five years since this project started, the concepts of “value-added” and “entrepreneurship” have been picked up and featured at numerous conferences and in publications throughout the sustainable agriculture community. The strategies of adding value to products and becoming more entrepreneurial in farm management are being taught to many more farmers desiring to create sustainable agriculture systems on their farms.

This project began to tease out the principles common to successful farm-based, value-added enterprises. Over 6,000 farmers, researchers, and agricultural information providers have already received publications discussing these keys to success or attended educational sessions on them. We expect many of these principles have already informed the thinking of family farmers and been incorporated into farm operations. We also expect that researchers will examine these principles, challenge them with new data, and continually refine the thinking about what makes farm-based value-added enterprises successful.

This project also introduced many individuals and organizations working on aspects of sustainable agriculture, entrepreneurship, and value-added enterprise development to one another. Personal contacts were made and working relationships developed between individuals from at least seven government agencies, at least 15 non-governmental sustainable agriculture organizations, and four farmers groups. As the resource directory is publicized more and used by both farmers and service providers, we expect many more of the organizations listed to communicate with one another.

In addition, technical specialists at the ATTRA sustainable agriculture information service were able to add several valuable contacts to their network of resources they use when answering questions regarding sustainable agriculture. According to Holly Born, with NCAT/ATTRA, they added at least five new useful contacts per Southern state and at least 20 new useful national/regional contacts. ATTRA plans to maintain the resource directory jointly with Southern SAWG as a dynamic tool for reference.

The results of this project have already informed the planning of a collaborative project between Southern SAWG, two governmental agencies, and three non-governmental organizations to create a learning network around sustainable farmer-driven, value-added enterprise development. When funded, the learning network will build on the lessons learned from this project and put several recommendations into practice.

We believe our ultimate goal of increasing the economic return to more farmers using sustainable methods will still be a long-term impact of our work. This project has begun...
laying the foundation for programs and research that will give farmers and rural community leaders the business tools and resources for adding value to agricultural products and developing innovative entrepreneurial activities on family farms. By increasing the general expertise about farmer-driven, value-added enterprise development in our region, we are increasing the likelihood of success. As more successful enterprises are created, economic activity on family farms will increase and the quality of life will be enhanced for farm residents.

**Farmer Adoption**

Over 750 printed copies of the publication “Keys to Success in Value-Added Agriculture” have been distributed so far and several hundred people have looked at this publication on the ATTRA website. Over 5,400 copies of the Southern SAWG newsletter containing information from our project were also distributed. Our best estimates are that at least half of the people who received these publications or looked at them on the internet were farmers, possibly as many as 75 percent.

Another 500 people attended at least one of the 16 educational sessions generated by this project. We conservatively estimate that 75 percent of the attendees were farmers. In addition, 12 farmers received intensive training and assistance through the model assistance program.

While we did not build in a tracking device to measure changes on the farms of the people who received publications or attended workshops, we did interview the farmers in the model assistance program. All clients noted that they had or were planning to make several changes to their respective agricultural enterprises as a result of the assistance they received. Changes consisted of altering production and processing activities, including many who were increasing production levels or developing greater product diversity. Some farmers also mentioned changes they were making in marketing their products. Some were marketing to new outlets as a result of the assistance.

As a result of this project, we recommend that family farmers consider taking the following steps:

1.) Consider several options for added value to the raw products they produce.
2.) Develop a whole farm plan that includes a business plan and an economic analysis of their enterprise(s).
3.) Gather as much information as possible before investing too much time or money. Talk to other farmer entrepreneurs who have tried similar enterprises.
4.) If a value-added enterprise is begun, network with other farmer entrepreneurs and with assistance providers who have a proven track record of reliable service.

**Recommendations:**

**Areas needing additional study**

1.) The keys to successful farm-based, value-added enterprises that we developed should be explored with other entrepreneurs around the country, refined by additional research, and updated when appropriate.

2.) There is a need for information or models that will help a farmer entrepreneur decide when it is advantageous to add value to an item themselves, when it is better to partner with someone else to add value, and when it is better to not add value. Research comparing management, labor, investment, and net return under each condition is needed to help farmers make more informed decisions.

3.) We need to create innovative ways to deliver training and services—including providing expert consultants—to farmers in an individualized way that is also cost effective.

4.) There is a need to create more effective ways to have farmer entrepreneurs network with one another. We need to find ways to overcome barriers of long distance, lack of time, and the reticence to disclose proprietary information.

5.) A system of compiling and sharing names of local experts who can act as consultants to farmer entrepreneurs is needed.
This Final Report presents the results of the 2007 Annual Poverty Indicators Survey (APIS). The results presented in this report are weighted to ensure that the data are representative of the population of the Philippines and its regions. Sampling weights, or expansion factors, were applied to the data obtained from sample households in order to derive estimates for the larger population from which the sample households were selected for the purpose of survey interviewing.

Final Report: Assessment of Antimicrobial Activity Using a Time-Kill Procedure

Order Number: 551713520
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Sample B (concentration 5.0 ppm) caused a 99.98% reduction on C.difficile with 15 minutes exposure. Sample B also proved to be more effective for the 30 seconds exposure time compared to Sample A for the same time point. Sneha Panchal, MSc., RMCCM Microbiology Lab Manager. EMSL Canada Inc., Mississauga Laboratory. EMSL Canada, Inc. 2756 Slough Street Mississauga Phone: (289) 997-4602 Fax: (289) 997-4607.

Final Report: LS-98-TSULE
3D concepting armored personnel carriers AKA troops transports specifically multi-purpose and multi-role vehicles. Posted 2 months ago. If a user is being abusive, please also submit an abuse report for our moderation team to review. Note that you will still see this person's artwork on the public community gallery. Do you want to continue? The second report, Evaluation of LS-DYNA Wood Material Model 143 (FHWA-HRT-04-096), completely documents the model’s performance and the accuracy of the results. This performance evaluation was a collaboration between the model developer and the model evaluator. Regarding the model’s performance evaluation, the developer and the evaluator were unable to come to a final agreement regarding the model’s performance and accuracy. These disagreements are itemized and thoroughly discussed in chapter 17 of the second report. Figure 28. Less final hourglass energy is calculated with type 4 stiffness control than with type 3 viscous control. Figure 29. Final Report. NASA Study on Flight Software Complexity. Commissioned by the NASA Office of Chief Engineer Technical Excellence Program Adam West, Program Manager. “The demand for complex hardware/software systems has increased more rapidly than the ability to design, implement, test, and maintain them. … Dan was the lead for this study and the editor of this report. • Lorraine Fesq is a Principal Engineer within the Engineering Development Office at JPL. She has over 30 years of aerospace experience that spans industry, government, and academia, and has worked all mission phases of spacecraft development including technology research, requirements definition, systems design, hardware/software integration and test, launch and mission operations.