

# Organic Farms' Credit Access and Farm Lenders' Assessment of Organic Farms' Credit Risks

## Final Report for LS11-240

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Region: Southern

State: Georgia

Principal Investigator:

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## Project Information

### Abstract:

This project analyzed issues related to the organic farms' access to regular farm credit needed to respond to pressures to expand business scale and scope due to an expanding organic consumer demand. The study also compiled the farm lenders' perspective on such issues raised by the farmers. Certain areas of disagreement between farmer borrowers and farm lenders were identified. These include the lenders' implementation of more appropriate credit risk assessment models, valuation of farmers' soil enhancement investments, and the mutual need for a better knowledge and understanding of each other's operating framework to improve borrower-lender relationships.

### Project Objectives:

- 1). To provide a better understanding of the sources of credit risks peculiar to organic farming systems and compile a representative collection of issues perceived by organic farms as significantly affecting their access to credit;
- 2). To determine lenders' perceptions of organic farming risks, identifying whether any preconceived notions define their attitudes towards organic farm loan requests vis-à-vis their regular farm borrowers, analyze the relevance of their existing credit risk assessment models to the organic farms' peculiar operating environments, and elicit their opinions and perspectives in improving credit access of potential organic farm borrowers.
- 3). To reconcile the farmers' and agricultural lenders' perspectives on credit risk assessment and credit access as collected in (1) and (2), and use such findings to formulate suggested strategies to resolve any credit access issues as well as any lenders' divergent issues in credit risk assessment not properly attuned to organic farms' business conditions.
- 4). To implement a two-pronged outreach program directed towards lenders for the

sake of clarifying credit risk assessment approaches more attuned to organic farms' conditions and towards farmers for the sake of helping them understand lenders' credit risk assessment methods, consider strategies to improve their credit risk ratings, and realize the role of external debt in promoting business growth and expansion.

#### Introduction:

The purpose of this project is to determine lenders' perceptions of the relative credit riskiness of organic farms vis-à-vis conventional farms, reconcile these perceptions with the organic farmers' self-assessment of their own business and credit risks, and analyze any probable impediments to organic farms' access to credit, including those relating to lenders' attitudes towards organic farms and any possible incongruence between lenders' and farmers' perceptions of organic farming (credit) risks. The collection and (widespread) dissemination of important credit-related information in this project should be able to address three important issues:

- a) The identification of the need for lenders to redefine their credit risk assessment models to be more suitably attuned to the peculiar operating structures and risk profiles of organic farming systems;
- b) As a consequence of (a), the increased credit access for prospective organic farm borrowers; and
- c) As a consequence of (a) and (b), the organic farm operators' consideration of credit as a tool for expansion and growth.

Credit access is a critical issue for organic farmers as funding constraints can restrict business survival and growth opportunities. One way of enhancing credit access is through a better understanding of lender expectations, standards and criteria in assessing credit risks, and their evaluation of farm loan applications. The following sections discuss the credit access issue from the farmers' and lenders' perspectives.

#### *A. Organic Farms' Operating Structures and Risk Profiles*

As a background, the booming organic farming sector registered an accelerated pace of growth in recent years (Dimitri and Greene, 2002; Greene and Kremen, 2003). In 2005, all 50 states for the first time officially registered the existence of certified organic farm operations covering a total of over 4.0 million acres of farmland (USDA-ERS). The rapid growth of organic markets, however, has overwhelmed organic farmers who were unable to match the pace of market expansion with increases in their farm production (Dimitri and Oberholtzer, 2009). Such supply gap thus requires the industry to stimulate more business expansions and start-ups. However, the following probable impediments are identified that may slow down growth and expansion in the farming industry.

##### *A.1. Farm Size and Debt Aversion*

Organic farms are usually significantly smaller than conventional counterparts. In 2003 the USDA recognized 8,035 certified organic farm operations in the U.S.,

comprised of cropland, pasture, and livestock productions. These operations included over two million acres and 8.9 million head of livestock and poultry. As such, organic agriculture is one of the fastest growing agricultural industries with certified cropland and livestock production more than quadrupling over the past decade (USDA). Even with organic demand rising, there are still noteworthy differences in farmland management of conventional and organic systems. Average conventional acreage for the 2003 growing season was 441 acres while the average for organic was 273 acres. Further, data indicate that 40% of organic operations were 100 acres or less and 68% were 300 acres or less directly implying that a majority were small farms while a limited number were large-scale operations. Survey data also showed the prevalence of family-based organic operations with between 83% and 87% of organic farms listing their business structure as either single family or family partnerships (OFRF 2003).

The survival and growth of small businesses, a category where most organic farms belong to, however, are hindered by a number of factors. A capital constraint is considered as one of these major obstacles. Finance theory suggests a pecking order model of capital sourcing, which was developed by Myers (1984) and Myers and Majluf (1984), that suggests a hierarchical ordering of sources of capital based on adverse selection issues that arise when a firm has more information about its value than the providers of funds. According to such a prioritization scheme, internally generated funds are usually first in the hierarchy. When such funding sources are depleted, the firm resorts to external borrowing (debt). Raising equity capital is considered as the last funding resort.

For small businesses like most organic farms, especially those in the early stages of operation, liquidity issues limit the availability of internal funds and hence limit the ability to be self-sufficient in financing capital and operating requirements. As a result, debt becomes the more practical option for raising capital. The problem, however, is that organic farm operators seem to be “highly risk averse.” For instance, a 2004 survey conducted by the nonprofit Center for Community Self-Help revealed that 56% of organic farmer respondents considered debt as not compatible with their sustainability principle while 45% suspected that lenders do not really understand their farms.

## *A.2. Organic Farming Risks*

Risk perceptions may differ among organic and conventional farmers, considering the differences in their operating and production environments. The 2001 national survey of the OFRF, for instance, reveal that about 30% of the responding organic farmers are most worried about the risk of getting their organically grown farm products contaminated by genetically modified organisms (GMOs) through pollen drift and other ways of contamination. This risk can translate to probable serious losses in revenues and eventual loss of organic certification.

Moreover, the availability of the organic farms' specialized inputs can further aggravate production risks. These farms use certified organic seeds, farm

equipment adapted to their organic cultural practices and biological pesticides, among others, that may not be easily procured as producers or manufacturers may not be easily accessible and abundantly available.

Changing farm structures and scales in the organic farm industry can also bring about less favorable changes in market conditions. The average size of organic farms in the country increased significantly as favorable returns in previous years allowed existing operations to expand their business size and scale, while new large-scale entrants acquire their own organic certifications (Greene and Kremen, 2003). As the market is dominated by larger players, price premiums are at risk of deteriorating if higher production is unmatched by adequate increases in consumer demand.

Such production and market risks are just among several sources of risk that need to be addressed and factored into lenders' credit risk assessment models. This project will elucidate linkages between these risk factors and the determinants of the lenders' "canned" risk assessment and loan evaluation models.

#### *B. Farm Lenders' Credit Risk Assessment and Lending Attitudes*

Generally, regular commercial lenders look at business profitability records, credit histories, collateral arrangements, historical financial conditions, repayment capability, and enterprise viability, among other considerations, in making loan approval decisions. Lenders often use credit risk assessment formulas that are developed using either (or both) experiential and statistical models (Splett et al., 1994). Small businesses, especially newly-established firms, often do not rate high with these credit risk models resulting in difficulty obtaining approval of loan applications.

Agricultural lending institutions are not exceptions to this rule as they too have traditionally tailored their financial services after the needs of large conventional farming systems. Regular lenders often make loans primarily to established farmers, thus excluding right away new businesses (usually by younger farmers, of which the organic farming movement is associated with) lacking adequate credit histories and track records.

The lenders' rigid credit risk assessment formulas sometimes do not completely understand the business potentials of innovative systems, like organic farms. For example, organic farm business plans may hinge on anticipated commodity prices higher than conventional prices, but some lenders may take a more conservative stance and insist on still using standard commodity prices. When the small farm sizes of organic farm borrowers are factored along with such prices, the borrowing farms' repayment potentials and business viability are grossly understated that lenders could deny the loan applications.

Moreover, it is possible that lenders could be inclined to shun away from accommodating (relatively "too retail" or "small") business of smaller or new farmers (to save on transaction costs), a category that includes most organic farms (Blank, 1998; USDA-ERS; Walz, 2004). As organic farms operate smaller operations,

their credit requirements could be relatively smaller than the average loan requests of conventional farm businesses. When lenders factor in transaction costs that are incurred regardless of loan size, they prioritize the servicing of larger loan requests, rather than squander time and resources on smaller loan requests of some organic farmers.

### *Project's Research and Outreach Benefits*

This proposed project will undertake a research program that will validate presumptions on lenders' perceptions of organic farms' credit risks and loan requirements. Presumptive anecdotes and perceptions on farmer-lender relationships and inherent business risks will be collected from the farmers themselves during focus group discussions. A lenders' survey will collect the lenders' attitudes in evaluating organic farmers' credit risks and loan applications. The farmers' and lenders' perspectives will then be reconciled to determine whether a credit access issue for organic farms is evident and, if so, this project will help develop remedial strategies.

This project is more than just a research program. A two-sided outreach and educational program is also proposed that will, on one hand, educate organic farmers about such lender credit risk assessment systems as applied to the peculiar farming situations of organic farmers. This educational program will offer organic farmers insights on strategies to improve their credit risk ratings and thus enhance their access to loan funds needed to realize operating and business expansion goals.

On the other hand, the flipside of such educational program is directed to open lenders' eyes to the untapped businesses of prospective organic farm borrowers. A better understanding of the organic farmers' operating structures and business potentials should motivate lenders to evaluate such borrowers' credit risks using more appropriate assessment models.

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## Research

### Materials and methods:

The first objective that seeks to compile issues and concerns from the organic farmers' perspective was undertaken using two approaches: a statewide survey and two focus group discussions. The survey approach provided more extensive coverage in terms of geographical and commodity representation. On the other hand, the focus group discussions allowed farmers to articulate their concerns and opinions. Such venues for more extensive discussions allowed the project investigators to develop more accurate representation of the farmers' perspective.

The Fort Valley and UGA team worked on organizing focus group discussions among organic farmers. A database of organic farms' contact information and their geographic proximity to the proposed locations of the focus group discussions was developed. After several e-mails sent and phone calls made, a final list of about 10 farmers for each of the two sessions was developed.

The first focus group discussion was held at the Pettigrew Center in Fort Valley State University (FVSU) on March 7. This session was attended by eight organic farmers. A couple of FVSU university officials also graced the occasion. The one-day session featured presentations by the major project proponents from UGA and FVSU to provide backgrounds on the farm borrowing process, the current credit risk assessment models, and overview of sources of farming risks for the organic farm systems. The rest of the time was spent on eliciting ideas and information from farmer participants on the borrowing issues. The morning discussions focused on farm credit access issues while the afternoon discussions dealt with credit risk measurement issues.

A second focus group discussion was held at Conner Hall in the Department of Agricultural and Applied Economics of the University of Georgia. This session is a replication of the first FVSU session in terms of agenda and structure. Six farmers attended the UGA session as some last minute withdrawals were received from those that earlier committed to attend. Nonetheless, the discussions were as productive, stimulating and enthusiastic as the FVSU discussions have been.

The collection of the lenders' perceptions and attitudes towards lending to organic farm borrowers vis-à-vis conventional farm borrowers was then undertaken subsequently. After gathering the organic farmers' perspectives on credit access and risk measurement issues from focus group discussions conducted, a survey instrument was developed to obtain the lenders' perspectives on such issues. The survey instrument was at first cleared with the Institutional Review Board (IRB) for compliance with established guidelines for research involving human subjects.

A graduate student developed databases of lenders from different lending groups (commercial banks, farm credit associations, Farm Service Agency, among others) containing postal and electronic mailing contact information. Several survey approaches were considered and used. The graduate student developed an online survey site through Survey Monkey as an initial attempt to elicit responses from lenders. Several email announcements and invitations were sent to the lenders in the contact information database leading them to the online survey site.

After this approach yielded only about 30 responses, hard copies of the survey were sent by postal mail. Follow-up phone calls were also made to certain prospective survey respondents. This survey method produced about 45 responses. The online and mail-in survey responses were then compiled and summarized.

Towards the end of the project, a follow-up survey was conducted among organic farmers to obtain an update on the farmers' loan reliance, borrowing experiences, and other issues in their relationship with their lenders.

## Research results and discussion:

### *A). Issues and Concerns Collected from Organic Farmers' Focus Group Discussion*

The two focus group discussions with organic farmers produced a number of very interesting, useful and significant issues related to their credit access and the assessment of their credit risks. The following is a summary of the major ideas contributed by the farmer participants:

#### 1). Production Diversity

Organic farms have more diversified operations usually involving a wide array of farm commodities. While product diversity is a challenge for farmer borrowers in preparing their business projections and plans to present as support for their loan applications, it is an important and desirable business trait, especially in terms of its risk mitigating benefit. The following arguments have been made about business diversity of organic farms:

- a). Lenders do not seem to put a premium on the risk mitigating aspect of business or product diversity of organic farms; some lenders even perceive it as a negative business trait.
- b). Product diversity should be an argument for the relaxation of the usual insurance

requirement in a borrowing transaction. The risk minimization aspect of diversification should be considered by lenders and relax the insurance requirement for organic farm borrowers.

## 2). Size of Business or Operations

Most organic farm businesses are significantly smaller than conventional farms. The business size issue puts forth the following arguments:

a). Lenders must have separate business size considerations or standards when evaluating organic and conventional farm borrowers. A small organic farm is never equal or comparable to a small conventional farm considering the returns structures (including price premium advantages and financial efficiency differences between organic and conventional farms).

b). Organic farms usually try to keep their operation size smaller and do not aggressively consider expansion plans. This is a result of the principles that guide their business decisions. Organic farms do not necessarily farm for profit. They value sustainability more so that they want to maintain their small farm size in order to achieve sustainability. They are always aiming to operate a business of the “right size in order to do the right thing.” Lenders must realize this important motivation and should not penalize an organic farmer’s loan application for its business size (small in conventional farming standards) and lack of expansion plans.

c). Small business operations of organic farms also result in relatively smaller loan amounts required from lenders. In the past, lenders have been wary of smaller loan applications because of transaction and opportunity costs related to the resources they allocate for the processing of loan applications. However, with the success of microfinance institutions and the banks’ renewed interest in these formerly ignored (by banks) business transactions, organic farms should be considered for the banks’ microfinance programs.

## 3). The Hobby Farming Stereotype and the Real Nature of Farming Goals and Principles

Organic farmers have shown frustration and disappointment with the usual label others, including lenders, would ascribe to them. They do not want to be called “hobby” or “lifestyle” farmers. They want lenders to realize that they are serious farmers who do not take their businesses lightly. This also calls for lenders to be more aware of the proper labels they should ascribe to organic farmers. Organic farmers are in business for entirely different reasons that motivate conventional farmers. Organic farmers are socially responsible farmers that are bent on providing their communities with healthy food and their practices are environmentally friendly.

## 4). Asset Appraisal and Measurement of Equity Investments

The organic farming model involves less investment in tangible farm assets, such as machineries and large tracts of land. Organic farm operations involve more intangible assets. For instance, they spend a great deal of money on soil enhancement inputs. The soil improvement process also has a longer gestation period. Enhancing the soil cannot be done overnight. For conventional farms,

however, soil enhancement is done differently with chemicals and possibly overnight. This basic difference will have repercussions on the following issues that should be addressed by lenders:

a). Land Appraisal issues - Existing methods for the appraisal of land do not consider intangible investments. Land is assessed at face value, calculated the conventional way without any regard on the real quality of the soil. Lenders should take the intangible soil enhancement investments of organic farmers into consideration when appraising land properties, especially those offered as collateral properties. A small piece of organic land is definitely worth way more than the same size of conventional farm land.

b). Existing lenders' credit scoring models include measures on solvency (Equity-Asset Ratio) and profitability (Return on Equity). Given the intangible investments of organic farms on their farmlands, "equity" measurement should be modified for these borrowers to factor in their intangible investments that would definitely differentiate their farmland from conventional farmland.

#### 5). Nature of Farm Operations

Organic farmers would want to clarify if lenders have discriminating treatments of different types of farms. Are certified organic farms treated the same way as uncertified organic farms? Are transitioning farms regarded the same way as conventional farms? These important clarifications should be made.

#### *B). Major Findings from Farm Lenders' Survey*

Results of the lenders' survey present useful results that provide interesting contrasts with the organic farms' views on credit access and credit risk measurement issues. In this survey, 57% of the respondents are commercial banks and the rest is composed of Farm Service Agency and farm credit system lenders. The following are the highlights of the survey results:

##### 1). Lending Exposure:

a). 34% of the respondents report that over 50% of their loan portfolio is devoted to agricultural lending;

b). 82% reported lending less than 1% of their farm loan portfolio to organic farms

c). 84% reported no growth in the number of their organic farm borrowing clients during the last two years.

##### 2). Lenders' General Perceptions of Organic Farms

a). The most popular perceptions among the lenders are that organic farms have too small loan requests.

b). Three negative perceptions rank in the top 4 responses: Organic farmers are fussy (making big deal of trivial stuff), operating stagnant operations with very limited expansion plans, and businesses that make less optimal decisions.

c). The positive traits of organic farms, i.e. sustainable, environmentally conscious, and health conscious farm businesses rank 5<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup>, respectively, out of 10 suggested traits.

### 3). Credit Scoring Models

a). 78% of the respondents declared that they do not differentiate or modify their credit scoring models for small and large borrowers as well as for small- and long-term loan requests. But 95% of the respondents do not make any distinction in their credit scoring models for organic and conventional farms.

b). The credit scoring variables that have the largest weights in the lenders' models for conventional farms are repayment ratio, collateral coverage ratio and profitability measures. In contrast, the top three credit scoring variables for organic farms (in terms of weights) are repayment ratio, collateral coverage ratio and credit scores.

### 4). Organic Farms' Product Diversification as a risk mitigating factor

a). 48% of the respondents reported that such diversification does not at all affect organic farms' credit risk rating. However, 31% thought that diversification could have some effect.

b). 41% of the respondents reported that such diversification does not at all affect organic farms' commodity insurance requirement in their loan applications. However, 26% thought that diversification could have some effect while 21% indicated significant effect of diversification on organic farms' insurance requirement.

### 5). Organic Farms' Soil Enhancement Investments in Farmland

a). 64% of the respondents indicated that soil enhancement investments of organic farms will not at all be taken into consideration in the appraisal of farm real estate properties.

b). 73% of the respondents think that organic farms' soil enhancement investments will not at all affect the calculation of equity-asset ratios in credit scoring models.

These comments and opinions from the lenders present some interesting contrasts with those shared by organic farmers in earlier focus group discussions.

### *C). Major Findings of Three Masters' Theses Completed*

The three Master's theses produced during the last year have explored the issues of credit access and credit risk measurement more extensively from different perspectives and using different analytical methods. Ghangela Jones focused on the microloan issue and also presents the results of the farmer evaluation survey conducted to verify any behavioral, attitudinal and/or situational changes experienced by organic farmers more recently. Adenola Osinubi looked at the credit access and risk measurement issues as one of several obstacles faced by a specific minority group, African American female farmers struggling with the double-edged

sword of minority status caused by their gender and racial statuses. Hofner Rusiana's thesis provides further evidence on the financial struggles and successes of young, beginning and small farms (that characterize most organic farms) before, during and after the latest economic recession using their financial performance data and credit dealings with the Farm Service Agency. The following will provide more details on these thesis research projects:

*C.1 Ghangela Jones' MS Thesis "Do Farm Lenders' Attitudes and Credit Risk Assessment Models Encourage Organic Farmers' Demand for Microloans?"*

Ghangela Jones' thesis analyzed the results of the project's follow-up survey conducted among organic farmers in Georgia two years after this study commenced. Even with the low response rate (34 responses out of 550 survey requests made), the data collected offer many important trends and implications. In terms of loan reliance (preferring to use loans as a financing recourse), respondents that are involved in non-single proprietorships, more educated, and farming full-time tend to rely a little more on loans than the other respondents in their respective categories. Male respondents farm more acres of land, earn higher farm income and tend to rely more on loans. White farmer respondents generate higher farm income and asset values in addition to higher reliance on loans than non-white respondents. Interestingly, even with such statements on stronger loan reliance, the overall loan reliance figure is actually only about 20%.

The follow-up survey also looked into the farmers' frustration levels, which are indicated by the number of times loan requests were not approved. For example, respondents were asked to record the number of times they applied for a loan followed by the number of times the loan applications were approved. Results indicate that those belonging to non-single proprietorship businesses have applied for a loan about 4 times while requesting an average amount of \$72,000. Part-time farming respondents appear to have slightly more loan rejections than full-time, requesting a smaller average amount of \$20,000.

Non-white operators appear to have experienced more loan frustrations than white operators. Non-white operators indicated they have requested an average of 6 loans, all resulting in disapprovals. Their disapproved amount requests have accumulated to about \$116,666.67.

On the other hand, some farmer respondents experienced success in their loan requests. For these successful farm borrowers, the loan packaging terms (loan amount, maturity rate and interest rate) were further scrutinized.

Although single-proprietorships requested a higher loan amount, they were assigned a lower loan maturity of about 3 years. Respondents that farm part-time applied for approximately \$17,000, but repayment was expected within 2 years. Female farm operators requested loans for nearly \$100,000 while repayment was anticipated within 2 years; compared to male operators who requested a smaller loan amount, but with a 7 year repayment plan.

With the launching of the new microloan program in January 2013, the follow-up survey fielded questions related to this new program. Overall, most farmers were not aware of the program considering it was a fairly new financing option to farmers from the Farm Service Agency. Among the new microloan program's features, financing options and a lower interest rate appear to be the most attractive features for most farmers.

Specific preferences of certain categories of respondents indicate that those with

higher education (at least college degree) consider financing options, less paperwork and lower interest rates as the most attractive features of the program. Full-time farm operators are the most unaware of the microloan program, but they feel that financing options and lower interest rate are the striking features of the loan program. Financing of operating capital, minor farm improvements, and farm supplies (financing options) and low interest rate appear to be the most appealing component of the microloan program to both female and male operators. Non-white farmers consider low interest rate and credit-scoring sufficiency as the most favorable facets of the program.

### *C.2 Adenola Osinubi's MS Thesis "Farm Business Challenges and Survival of Socially Disadvantaged Farmers: The Case Study of Georgia's African American Female Farmers"*

Adenola Osinubi's thesis research focused more on African American female farmers operating organic or naturally grown farm operations in Georgia. Using the case study method, her research found that African American female farmers are more involved in alternative and sustainable agricultural practices like organic or naturally grown methods. For some this may be because of the difficulties they have experienced entering the conventional farming industry. These difficulties can be attributed to historical and structural inequities in farm organizations and federal and state laws. Moreover, she also identified some barriers that may have hindered many African American female farmers from running more successful farm business operations. These barriers include access to credit and land, marketing, awareness and understanding of the different types of credit programs available for them, loan qualifications, and access to Farm Service Agency loan service centers, among others. Since many of them have small scale farm operations, they find it difficult to assert themselves as legitimate farm business operations.

In addition to the case studies, Osinubi also worked with secondary data provided by the Farm Service Agency consisting of approved farm loan application information from 1999 and 2013. Osinubi focused her analyses on the differences in loan packaging terms among different racial and gender classes. Her results indicate that female African American farmers with approved FSA loans have usually been charged higher interest rates, have lower loan maturity terms, but provided with larger loan amounts relative to those given to other racial and gender groups.

### *C.3 Hofner Rusiana's MS Thesis "A Credit Migration Approach in the Evaluation of the Relative Financial Strength and Endurance of Beginning Small Business of Young Farm Operators under Recessionary Conditions"*

This study examines the relative financial strength and endurance of several paired classes of farmers according to business maturity (beginning versus mature farm businesses), farm operators' age/experience (young versus older, more experienced farm operators), and farm size (small versus large farm businesses) by utilizing the credit migration framework (transition probability approach) and random-effects ordered logistic regression techniques. The backdrop of this study is the late 2000s recession. Results indicate that most farms showed better credit scores after the recession, which shows resiliency of farm sector in general. While the farm sector shows resiliency during the economic recession, there is no wonder that sector was affected by the changing economic conditions as reflected by higher distance metrics of each farm type during recession compared to other periods. This means that in general, there was high level of credit movements compared to pre- and post - recessionary period. In addition, the regression analysis shows that

macroeconomic variables suggest that the economic activities have significant roles in credit risk movements of farms. As such the government should consider the nature and magnitude of their support for the sector especially for beginning small young farms in order for them to withstand volatile, more challenging economic conditions.

The results suggest that financial strength of small farms, young farm operators, and beginning farms during the recessionary period remained at favorable level. Although their counterpart classes were in better credit classes during and post-recession period, these farms show resiliency with a higher upgrade rate, and better or almost the same retention rates for the higher classes. This suggests that lenders should still cater to these kinds of farms during recession as they can still manage to withstand changing economic conditions.

Regression results show that larger farm size and older farm operators have higher probabilities of credit upgrades, which is in line with the results from the migration matrices. This suggests that these kinds of farms have will most likely succeed in obtaining loans from lending institutions. Small young farms, meanwhile, may have difficulty meeting lender's requirements. Financing capital is needed by these small young farms to supplement existing funds to finance their operating infrastructure and working capital requirements. As such, these results underscore the need for lenders' better understanding of the small young farmers' operating structures and business potentials and consider the adoption of more appropriate credit risk assessment models that should more accurately capture their credit risk conditions.

## **Participation Summary**

### Educational & Outreach Activities

#### **PARTICIPATION SUMMARY:**

Education/outreach description:

##### A). BULLETINS AND POPULAR PRESS

- 1). Rusiana, H.D. and C.L. Escalante. "Credit Access of Organic Farms: A Survey on Agricultural Lending Institutions in the Southeast Region." Department of Agricultural and Applied Economics, University of Georgia (UGA), June 2014.
- 2). Rusiana, H.D. and C.L. Escalante. "Agricultural Lenders' Survey on Organic Farms' Credit Risk Perceptions and Measurement." Department of Agricultural and Applied Economics. UGA. June 2014.
- 3). C.L. Escalante. "Factors Constraining the Organic Farmers' Access to Borrowed Capital." in Sustainable Agriculture at UGA Newsletter, Summer 2015 Issue.
- 4). C.L. Escalante. "The Farm Lenders' Attitudes and Perceptions of Organic Farmers and their Businesses." in Sustainable Agriculture at UGA Newsletter, Fall 2015 Issue (*forthcoming, being finalized*).

## B). ACADEMIC AND PROFESSIONAL OUTREACH ACTIVITIES

### B.1). CONFERENCE PRESENTATIONS (PAPERS AND POSTERS)

- 1). Selected Poster, 2015 Annual Meeting of Agricultural and Applied Economics Association, San Francisco, CA. Li, X. and C.L. Escalante. "A Credit Migration Analysis of the Financial Vitality of Female and Racial Minority Borrowers of the Farm Service Agency under Recessionary Conditions." July 2015.
- 2). Selected Poster, 2015 Annual Meeting of Agricultural and Applied Economics Association, San Francisco, CA. Rusiana, H. and C.L. Escalante. "The Effects of Business Maturity, Experience and Size on the Farms' Economic Resiliency during Recessionary Periods: A Credit Migration Analysis of Farm Service Agency Borrowers." July 2015.
- 3). Selected Poster, AAEA 2014 Annual Meeting, Minneapolis, MN. Rusiana, H., G. Jones, and C. L. Escalante. "Do Farm Lenders Attitudes and Risk Assessment Models Encourage Organic Farms' Debt Aversion?" July 2014.
- 4). Selected Poster, 2014 Sustainability Science Symposium and Workshop, University of Georgia. H. Rusiana and C.L. Escalante. "Issues in Organic Farmers' Access to Credit and Credit Risk Measurement." February 2014.
- 5). Selected Poster, 2014 Sustainability Science Symposium and Workshop, UGA. G. Jones and C.L. Escalante. "The Farmers' Demand for Microloans." Feb. 2014.
- 6). Selected Poster, 2014 Sustainability Science Symposium & Workshop, UGA. A. Osinubi and C.L. Escalante. "Contributions to a Sustainable Community & the Challenges in Attaining Sustainability of Farm Operations: The African American Female Farmer's Perspective." Feb. 2014.
- 7). Selected Poster, Southern Sustainable Agriculture Working Group (SSAWG) 2014 Conference, Mobile, AL. H. Rusiana and C.L. Escalante. "Organic Farmers' Access to Credit: Reconciling Lenders' and Farmers' Perspectives." January 2014.

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### B.2). INDUSTRY AND PROFESSIONAL RESENTATIONS

- 1). Contributed Paper, Joint Meeting of the National Agricultural Credit Committee (NACC) and the NC1177 Agricultural Finance Regional Research Hatch Group. "Organic Farms' Debt Aversion and Farm Lenders' Attitudes." Federal Reserve Bank, Kansas City, October 16-17, 2014.
- 2). Panelist, 2014 Symposium on the Consolidation in the Farm Credit System, Farm Credit Administration, Maclean, VA, January 17, 2014.
- 3). Financial and Institutional Risk Policy Committee, Southern Risk Management Education Center, 2013
- 4). Team Agriculture Georgia (TAG) Workshop for Small, Beginning and Limited Resource (SBLR) Farmers, "Financing Small Farms and Microloans." Two Sessions, March 14, 2013, Fort Valley State University

- 5). Certus Bank's Agricultural Lending Workshop, Feb. 25, 2013 Distance Learning (via Adobe Presenter)
- 6). Sustainable Agriculture Conference for New and Beginning Farmers, Watkinsville, GA, October 3, 2013.
- 7). Sunbelt Agriculture Exposition, Moultrie, GA, October 16, 2013
- 8). West Broad Farmers Market, Athens, GA, 1<sup>st</sup> Saturday of September and October 2013
- 9). National Women in Agriculture Association Meeting, Athens, GA, October 19, 2013

C). PEER-REVIEWED JOURNAL ARTICLES

- 1). Jones, G., C.L. Escalante, and H. Rusiana. "Reconciling Information Gaps in Organic Farm Borrowers' Dealings with Farm Lenders." *Agricultural Finance Review*. Accepted for publication and forthcoming in 2015.
- 2). Escalante, C.L., M. C. Ferrer, and B. Wang. "USDA Microloans and Small Organic Farms: Filling a Lending Niche." *Choices*, 28(1). Available at <http://www.choicesmagazine.org>.
- 3). Escalante, C.L. "Opportunities for Expanding Demand for Farm Credit System's Loan Programs." Report submitted to the Farm Credit Administration, October 2012.
- 4). Rusiana, H., B. Brewer, and C.L. Escalante. "The Financial Vitality of Small Farm Businesses of Beginning and Young Farmers During and After the Late 2000s Economic Recession." For submission to the *Journal of the American Society of Farm Managers and Rural Appraisers*. (A copy will be sent in a separate batch to SARE when this article is finalized.)
- 5). Rusiana, H., and B. Brewer, and C.L. Escalante. "A Credit Migration Analysis of Farm Service Agency Borrower Categories According to Business Maturity, Experience, and Size." For submission to the 2015 special issue of *Agricultural Finance Review*. (A copy will be sent in a separate batch to SARE when this article is finalized.)
- 6). Osinubi, A., C.L. Escalante, and C.E. Taylor. "Revisiting the Plight of African American Female Farmers." For submission to *Choices*. (A copy will be sent in a separate batch to SARE when this article is finalized.)

## D). MASTERS' THESES AND OTHER STUDENT-RELATED ACTIVITIES

- 1). Ghangela Jones, M.S. Agricultural Economics, Summer 2014, *“Do Farm Lenders’ Attitudes and Credit Risk Assessment Models Encourage Organic Farmers’ Demand for Microloans?”*
- 2). Adenola Osinubi, M.S. Agricultural Economics, Summer 2014, *“Farm Business Challenges and Survival of Socially Disadvantaged Farmers: The Case Study of Georgia’s African American Female Farmers”*
- 3). Hofner Rusiana, M.S. Agricultural Economics, Summer 2015, *“A Credit Migration Approach in the Evaluation of the Relative Financial Strength and Endurance of Beginning Small Business of Young Farm Operators under Recessionary Conditions”*
- 4). Ghangela Jones (Technical Paper/Article), M.S. Agricultural Leadership, Spring 2014, *“Support Programs for Organic Farmers.”*
- 5). Mentor, Emerging Scholars Program, (Tesia Sneed, Fort Valley State University - Advisee), Summer 2012.
  - [Bulletin 1](#)
  - [Bulletin 2](#)

## Project Outcomes

Project outcomes:

This project has validated a number of issues affecting the relationship of organic farm borrowers and regular farm lenders. First, from the organic farmers’ perspective, it has become clearer that their reluctance to utilize debt in financing their operating requirements is not necessarily influenced by sustainability principles, as often cited in some studies. The important clarification made by this study is that organic farmers have pressing issues about the way farm lenders perceive their farming businesses that have become more evident in the farmers’ previous efforts to apply for farm loans. In other words, this study confirms that there is indeed a “gap” in the relationship between organic farmers and farm lenders. That “gap” is substantiated by discrepancies or mismatching of opinions between these two parties that have been uncovered in this study. The farmers have defined in clear terms the issues they have affecting their access to credit and the manner their loan applications have been handled under existing lender credit risk appraisal models, in addition to lenders’ attitudes or biases against some inherent traits of organic farming systems.

On one hand, the farmers’ inputs in focus group discussions and an informal survey confirm the relatively lower reliance of organic farms on external loans in supplying business financing requirements. These farms declared that about 80% of their funding needs are supplied by equity funds. Majority of the farmer respondents have either completely avoided the loan option or have been persistently unsuccessful in

their numerous attempts to obtain credit from regular farm lenders. Farmers have articulated in focus group discussions their concerns on lenders' ignorance of the real nature of organic farming operations and the application of credit risk appraisal methods that are more attuned to conventional farming situations but remotely applicable to organic farming conditions. Among the major risk assessment issues are the farmers' contention that lenders do not give fair consideration to the risk mitigating benefits of highly diversified organic operations and the real estate value-enhancing effect of extensive soil improvement investments that organic farmers typically engage in.

The lenders' perspective reinforces the same arguments laid out by the farmers. Lenders' interest in accommodating the loan requests of organic farm borrowers is heavily influenced by structural attributes and their perceptions of organic farms. Interest in organic farm lending is high among non-commercial bank lenders that are smaller, younger in business age and not too concentrated in farm lending. The dominant lender perceptions that encourage greater interest in organic farms maintain that such borrowers are not really small businesses preoccupied with environmental and health principles. In other words, organic farms can stand a chance at being accommodated by farm lenders only if they are regarded as business-like entities that do not necessarily espouse the core organic farming principles of sustainability and social benefit maximization.

In terms of credit risk appraisal, even while lenders acknowledge that organic and conventional farming systems are inherently and significantly differentiated, a uniform credit risk appraisal model is still applied to both sets of farm borrowers. This suggests that organic farms must compete with conventional farms for the lenders' loanable funds without any special consideration. Organic farms can at least expect lenders to acknowledge the risk mitigating benefit of enterprise diversification, which may not actually be an unusual concession for organic farms as such principle has usually been a typical component of credit risk appraisal models of lenders. An area of disagreement between farmers and lenders that remains is on the valuation of soil enhancement investments. Organic farmers can always fully disclose such expenditures in their financial statements. The difficulty lies in the lenders' probable tendency to recognize only the short-term nature of such balance sheet entries, while organic farmers insist otherwise. Available scientific (agronomic) evidence would, however, support the lenders' contention.

The credit relationships between organic farm borrowers and farm lenders may be improved if at least one sector will mend its ways. Specifically, organic farmers may want to accept the challenge of competitively vying for farm credit without expecting special concessions from lenders owing to their peculiar farming principles, structures and operations. Or farm lenders may at least refrain from using a generic credit scoring model for all borrowers and instead apply separate models for different size categories and/or types of loan accommodations requested (term versus operating).

This project's outreach efforts have so far attempted to foster some understanding or compromise between these two groups. Two outreach presentations for lenders

stand out as having captured a sizable audience of important administrative personnel in the lending industry. Presentations at the national symposium of the Farm Credit System (FCS) in January 2014 and at the meeting of the National Agricultural Credit Committee in October 2014 were attended by lending officers and executive personnel from the largest lender institutional groups in the farm lending industry (commercial banks, FCS and Farm Service Agency). The feedback received during both occasions was encouraging as intent was expressed to look into the issues presented.

Educating the farmers about credit sense and greater grasp of the lenders' credit risk appraisal systems to enhance their competitiveness and success rate of their loan applications is a more challenging task. Some efforts were already made with presentations at several farmers' meetings and numerous one-on-one consultation services made available to the farmers. The effectiveness of these efforts cannot be immediately apparent in the shorter term. More patient and persistent outreach efforts need to be undertaken even beyond the expiry of this project. In the long-run, organic farmers may eventually realize the inherent financial and economic strengths of their businesses. When that happens, they can then assert their cases more effectively and increase their loan reliance to levels that could ideally allow them to expand their businesses and meet the accelerating consumer demand for their products.

## Economic Analysis

### *A. Economic Model for Lenders' Attitudes and Perceptions*

One study reported in a published journal article in the *Agricultural Finance Review* employed some regression techniques to analyze lenders' attitudes and credit risk measurement practices. This analysis used the results of a regional farm lenders' survey conducted by the University of Georgia in 2012 among lending officers of commercial banks, the Farm Credit System, and the Farm Service Agency in Georgia, Florida, Alabama, South Carolina, North Carolina, Mississippi, Louisiana, Kentucky, Arkansas, and Tennessee). The survey instrument contained questions on issues compiled from two focus group discussions with organic farmers from different parts of Georgia held at Fort Valley State University and University of Georgia in 2012.

This study analyzed a system of equations revolving around farm lenders' attitudes and lending patterns towards organic farming clients. The Heckman approach was employed in this analysis, which is designed to consider the separability of two decisions made by a farm lender: the decision to accommodate organic farmers' loan requests in the future and the average amount of loan exposure that the lender may be willing to extend to their prospective organic farmer-borrowers.

In the first stage, a probit estimation technique generates the selection equation. In this analysis, the dichotomous dependent variable ( $z_i$ ) takes a value of 1 for farm lenders that express interest in lending to organic farms and 0, if otherwise. In the second stage, the regression or outcome equation is applied to the selected observations (i.e. farm lenders who are interested in lending to organic farmers) to estimate the determinants of the average amount of loan exposure ( $y_i$ ) that the lenders are willing to extend to organic farmers.

The selection and outcome equations include the following variable categories: ST that is a set of lenders' structural characteristics (such as measures of size of operations, years of lending experience, type of institution); ATT are dummy

variables accounting for lenders' qualitative perceptions of organic farmers collected in the survey; and POL variables capture lending policies such as the differentiation of credit scoring models for different types of borrowers, property appraisal approaches that affect valuation of organic farmland, and other specific credit risk assessment benchmarks.

The results indicate the lenders' perspective as reinforcing the same arguments laid out by the farmers. Lenders' interest in accommodating the loan requests of organic farm borrowers is heavily influenced by structural attributes and their perceptions of organic farms. Interest in organic farm lending is high among non-commercial bank lenders that are smaller, younger in business age and not too concentrated in farm lending. The dominant lender perceptions that encourage greater interest in organic farms maintain that such borrowers are not really small businesses preoccupied with environmental and health principles. In other words, organic farms can stand a chance at being accommodated by farm lenders only if they are regarded as business-like entities that do not necessarily espouse the core organic farming principles of sustainability and social benefit maximization.

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### *B. Economic Models Capturing the Farmers' Perspectives - Evidence from the 3 Masters' Theses*

Adenola Osinubi's thesis examines the challenges faced by African American female farmers in their business operations in Georgia and throughout the United States. Farm Service Agency (FSA) lending terms on loans granted 1999-2013 are scrutinized for possible trends and indications of unfair lending practices towards African American female farmers, and other minority farmers at the national level. This study incorporates both qualitative and quantitative approaches. A case study is conducted focusing on African American female farmers in the state of Georgia. A seemingly unrelated regression (SUR) is used to analyze the FSA loan data. The case study confirmed that these farmers still experienced sexism and discrimination, and also helped to build a profile of female African American farmers.

The SUR approach is suitable for this study because multiple dependent variables are assessed using shared independent variables, to see if there are indications of unfair lending practices. The independent variables used for this model all influence lending practices and outcomes, and with this particular model, they can be measured jointly. The SUR model was developed to analyze the FSA borrowers' data to see if there were any trends or indications of unfair lending practices towards

African American female farmers and other minority farmers. Three equations are used to estimate the presence of possible discriminatory trends using the FSA data in the form of different packaging scenarios (loan amount, interest rate and loan maturity decisions of the lenders).

Results from the SUR analysis show that although on the front end discrimination may not be obvious, unfair practices within loan packaging may still be present. The SUR model that looked at three loan packaging situations produced results with important implications. Although African American farmers were granted loans, they seemed to have experienced higher interest rates, shorter maturity terms, and in the case of women, lower granted loan amounts.

Ghangela Jones' study investigated capital constraints as one of major obstacles hindering the organic farms' plans to expand their businesses to meet increasing consumer demand. Specifically, the goal of this research was to provide empirical evidence on the predicament of organic farmers in their efforts to access credit from regular farm lenders. Primary data collected from the lenders' survey were used to identify the significant determinants of farm lenders' attitudes towards their organic farming clients and the extent of their loan exposure to organic farm borrowers. It is suspected that lenders use uniform credit risk assessment models to determine the accessibility of loans to farmers with disregard to the nature of their farm operations. This study uses two regression models to discern the significant determinants of lenders' interest in and extent of credit accommodation to organic farm borrowers.

One approach employed PROBIT estimation whereby the binary choice model is used to empirically identify the determinants of agricultural lenders' attitudes towards organic farming clients. As for the other approach, the lenders' extent of loan exposure has been analyzed using backward stepwise regression that initially considered all probable independent variables. Using a 20% variable significance retention rate, the model has been reduced to a version that involves only the important (relatively more significant) regressors.

This study produced important evidence that specific credit risk assessment benchmarks have an impact on the chances of organic farm operators having their loan applications accommodated and subsequently approved by lenders. This study's results have underscored the need for lenders' better understanding of organic farms' operating structures and business potentials. Lenders should consider the adoption of more appropriate credit risk assessment model that should more accurately capture organic farms' credit risk conditions. Furthermore, organic operators should consider the Microloan Program to better suit their business situations.

Hofner Rusiana's thesis examined the relative financial strength and endurance of several paired classes of farmers according to business maturity (beginning versus mature farm businesses), farm operators' age and experience (young versus older, more experienced farm operators), and farm size (small versus large farm

businesses) by utilizing transition probability approach and random-effects ordered logistic regression techniques.

Transition probabilities were estimated using annual credit scores from 2005 to 2012. An average one-period transition matrix (1x1) was created in order to analyze the overall credit score movements. The values along diagonals represent retention rate, while the off-diagonal values represent upgrades and downgrades in credit score classification.

The dataset was split into several groupings in order to compare farms by farm type and period. First, farms will be divided in terms of three criteria – by farm size (small versus large), by business maturity (beginning versus mature), and by operator's age (young versus old). These categories will be useful in understanding comparative changes in credit quality among pairs of farm types.

Credit score data were also divided by periods. Migration matrices were created for pre-recession period (2005 – 2007), during the recession (2008 – 2009), and post-recession (2009 – 2012). This way, the overall credit score movements of farms for each period can be analyzed.

Random-effects ordered logistic techniques for panel data were also employed to identify factors that significantly influence the probability of farm credit migration rates. The farm's credit score was evaluated using Year-to-Year Transition ( $1 \times 1$ ), which measures movements in credit risk ratings from one year ( $n$ ) to the next ( $n + 1$ ). The explanatory variables consist of three groups of independent variables representing structural/demographic, financial and macroeconomic factors that could influence the probability of class migrations.

Results show that the financial stress resulting from the late 2000s recession did not significantly influence the financial vitality of farms in general, regardless of the farm types. The financial strength of small farms, young farm operators, and beginning farms during the recessionary period remained at favorable levels, although their performances were lower to their counterparts. In addition, increasing farm size will lead to a higher probability of class upgrades. Being a young farm operator meanwhile decreases this probability. Positive changes in money supply and farm real estate values were found to increase the likelihood of credit upgrades. Results also show trend reversal of credit risk movement, where upgrades (downgrades) are more likely to be followed by downgrades (upgrades).

## Farmer Adoption

This project's adoption issues do not involve adoption of new technologies or production methods. Instead, this study is aimed at achieving some behavioral changes among organic farmers and lenders. On one hand, organic farmers are being encouraged to consider debt financing as an alternative for procuring business. Outreach efforts directed towards organic farmers during the last three years have somehow shown some changes in loan reliance of farmers. The

evaluation survey results indicate that certain groups of farmers with specific attributes (non-single proprietorship businesses, more educated and full-time farm operators) have shown higher loan reliance rates compared to the other farms in their respective categories. Loan frustration rates (as related to the total number of times they filed loan applications) has been less for full-time and white farm operators as well as non-single proprietorship businesses. More favorable loan terms (amount approved, loan maturity, and loan pricing issues) have also been reported by most farmer categories, except for certain racial classes. All told, farmer adoption of the prescribed greater loan reliance attitude may have worked in certain cases, but the other results of this study emphasize the need to focus more outreach efforts and assistance to some farmer categories that may be experiencing higher rates of loan frustration and offered less favorable loan terms. More targeted outreach programs should follow-up and strengthen previous efforts in this area.

On the lender side, the adoption issues require for lenders to make necessary adjustments in their operating policies (such as revamping their credit risk assessment systems to account for differentiated models applying to farmer groups with specific business traits and conditions). As such suggested institutional changes may not be easily implemented given the resource and technological requirements, this project's outreach efforts have communicated this need to those with authorities to make such decisions.

Recommendations:

## Areas needing additional study

One area of research that might need further attention is asset valuation as raised by organic farmers with regards to their soil enhancement investments that they claimed should increase their farm land values. More research efforts should be undertaken to validate the contention that such soil improvement investments of organic farmers have short-lived effects hence should not be factored into land appraisal at all. If proven otherwise, the lenders should be convinced to consider changes in their asset valuation and financial ratio measurement methods.

As attitudinal or behavioral changes suggested by this study may require a significant amount of time before they are realized, the recommendations of this study should be revisited a few years from now to obtain more realistic validation of this study's effectiveness. A continued information campaign should be pursued even after this project is concluded. Such sustained outreach efforts should emphasize the lenders' positive regard for the merits of organic farming, such as its growth potentials and diversification benefits, among others. On the other hand, organic farms should be constantly be educated for them to gain a better understanding of credit principles and processes while lenders will be urged to refine their existing credit risk appraisal methods to increase their accuracy, fairness, and dependability.



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