

## **Factors Influencing Successful Small-Farm Operations in North Carolina**

Anthony K. Yeboah  
North Carolina A&T State University  
*yeboaha@ncat.edu*

John Paul Owens  
North Carolina A&T State University  
*owensj@ncat.edu*

Jarvetta S. Bynum,  
North Carolina A&T State University  
*jsbynum@ncat.edu*

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## **A) Objectives**

The overall goal of this research project is to identify and refine factors influencing successful small farm operations in North Carolina.

## **B) Background**

Small farms account for 91 percent of all farms. Given the importance of small farm viability, this research project focuses on identifying ways to further enhance successful small farming in North Carolina.

Fewer people are working on farms today and this phenomenon has affected North Carolina agriculture. During the past thirty years, the number of farms has decreased from 91,000 to only 53,000. The North Carolina Department of Agriculture reports that 45,200 farms have sales less than \$100,000. Following the national trend, the size of the average farm in North Carolina grew steadily in the second half of the 20<sup>th</sup> century from an average of 123 acres in 1974 to 170 acres today.

There is a great deal of uncertainty about the preservation of small farms, the questions pertaining to this preservation range from the philosophical: *If large farms are efficiently supplying our needs, is it right to worry about small ones?* To the basic: *What is a small farm?* and the practical: *What can be done to help small farms?* (Mayerfeld, 2004).

North Carolina farms vary widely in size and other characteristics, ranging from very small retirement and residential farms to establishments with sales in the millions of dollars. Farming continues to be a distinctive industry in part because most production, even among very large farms, is carried out on family-operated farms whose operators often balance farm and off-farm employment and investment decisions.

The North Carolina Department of Agriculture reports that 45,200 farms have sales less than \$100,000 (USDA, 2009). In describing types of small farm operations, classification needs to include not only the size of the farm in terms of sales but also the basic structure of the operation. These basic structures are delineated in Table 1. How the farm is organized can affect the efficiency and competitiveness of the farm, the well-being of farm households, the design and impact of public policies, and the nature of rural areas.

In an effort to further explain the factors that affect successful small-scale farming, researchers have identified factors that have underpinnings in 1) small-farm educational programming; 2) small-scale agricultural enterprises and production practices; 3) alternative marketing; and 4) risk management.

**Table 1**

<b>Farm Typology Group Definitions</b>	
<b>Small Family Farms</b> (sales less than \$250,000)	<b>Other Family Farms</b>
<b>1. Limited-resource farms:</b> Small farms with sales less than \$100,000, farm assets less than \$150,000, and total operator household income less than \$20,000. Operators may report any major occupation except hired manager.	<b>1. Large family farms:</b> Sales between \$250,000 and \$499,999
<b>2. Retirement farms:</b> Small farms whose operators report they are retired. This excludes limited-resource farms whose operators report this occupation.	<b>2. Very large family farms:</b> Sales of \$500,000 or more
<b>3. Residential/lifestyle farms:</b> Small farms whose operators report a major occupation other than farming. Again this excludes limited resource farms whose operators report this occupation.	
<b>4. Farming-occupation farms:</b> Small family farms whose operators report farming as their major occupation. This excludes limited-resource farms whose operators report this occupation. <b>Low-sales farms:</b> Sales less than \$100,000 <b>High-sales farms:</b> Sales between \$100,000 and \$249,999	

SOURCE: NC Department of Agriculture, 2005

Furthermore, marketing, value added processes, enterprises that generate income in several ways (e.g. tourism plus direct sales etc.) as well as many of the “sustainable community” or “smart growth” issues address economic viability directly (Perry, J. & J. Johnson, 1999).

Specialty crops can be economically viable, particularly for smaller producers. For specialty crops, profitability is based on: 1) management of ecological capital and efficient use of on-farm natural resources, 2) diverse and specialized marketing opportunities, and 3) price premiums available from buyers for many specialty and value-added specialty crops. Diversifying farming operations creates a greater opportunity for year-round income and can contribute to the success of the business. An example of how farmers can diversify their crop mixes includes using trees for a windbreak with marketable crops to produce small amounts of very labor-intensive-but-high-value crops such as European melons, figs, or herbs (Humphrey and Mussen, 1995).

Effective marketing of North Carolina specialty crops requires a correct assessment of consumer food and shopping preferences, development of successful production practices, research in production economies, and creation of new distribution channels.

Finding ways for North Carolina farmers to switch to other high value crops and environmentally sensitive management practices may give them the needed income and confidence to continue to produce and diversify on small acreage and keep larger family farming enterprises viable and successful. As commodity programs are eliminated, more farmers will need to consider the potential that specialty crops offer as an economically viable alternative to tobacco and other row crops.

Even though we live in an age of technology where computers are prevalent in the larger businesses, this is not the case with small farmers. Although many small farmers use computers, manual record keeping remains a key component for these farmers (Doye, D., Jolly, R., Hornbaker, R., Cross, T., King, R., Lazarus, W., and Yeboah, A., 2000). Muhammad, S., Tegegne, F. Ekanem, E. (2004) found that computer technology does not play a vital role in small farm operations.

Key to the continuation of small farms is the ability to effectively market and operationalize factors and maintain a manageable debt to income ratio. Each farm represents an individual business enterprise that has to deal with its own unique set of these factors. The success of a small farm is likely to be based on having characteristics that enable the farm to overcome bottom line changes in market demand, operating costs and to manage risk.

According to North Carolina A&T State University's Cooperative Extension Program, small farms are alive and well across the United States and across North Carolina (North Carolina A&T State University, 1998 – 2002). Most of the farms in the United States and the vast majority of the farms in North Carolina are small farms. Successful small-scale farmers know what success means to them, however, success means different things to different people. While income from the farm is important, it usually is not the only goal of the small-scale farmer. Protecting the environment, being active in the community, a rural lifestyle, and investments for future family expenses, all can be important goals. Although, all small-scale operators face challenges, they can all be successful (North Carolina A&T State University, 1998 – 2002).

### **C) Data and Methods**

Although this research project includes several surveys, for this phase of the project the survey instrument solicited production and financial data, attitudes and beliefs about farming, as well as demographic questions.

The research instrument was distributed to a sampling frame that also included small farmers not identified as being successful. This enabled testing of the predictive value of the “success” domains and their constituent variables/factors for differentiating “successful” and “less successful” small farmers. This sample represented small farmers considered by County Extension agents to either not be successful or uncertain about their success status and will address minorities. This “less successful” group represented a comparison group for determining the relative value of the success characteristics variable set.

The survey instrument was designed to solicit production and financial data, as well as farm organization, use of labor, marketing strategies, attitudes and beliefs about

farming. The instrument also solicited demographic data. The instrument consisted of a mix of short answer, yes/no, and Likert scale responses. To encourage the farmers to accurately complete the financial sections, the instrument did not request names, addresses nor telephone numbers. For this research, a small farmer is identified using the USDA definition as a farmer with total gross income less than \$250,000 for last calendar year.

Based on a conceptual model as part of this ongoing research, the following variables are expected to be viable predictors of success: Technology, Education, Marketing, Enterprise Diversity and Environment Impact.

## **D) Results**

Results of the analysis indicate that recurring indicators among the successful farmers were the “love of farming,” “manageable debt” and “workshop participation.” Other strong indicators of successful farmers included a combination of marketing strategies and a diverse mix of enterprises and specialty crops.

Additional enumerated indicators of success included: 1) the existence of clearly defined goals; 2) years of farming experience of the farm operator, 3) existence of specialty crops; 4) diversification of farming operations; 5) existence of financial management tools; 6) access to educational programs; and 7) existence of cost management.

Outcomes of this project yielded possible ways to further enhance the success of small farms in North Carolina. Based on case study and questionnaire results, income was not found to be as important as believed and the overall, “love of farming,” seemed to be the driving force behind the farmer’s view of success and not profit (Table 2). The questionnaire showed differences in a lot of areas, for example, successful case study participants had little to no debt and the questionnaire participants stated that they did have debt. However, both groups agreed that their success was not measured by whether or not they made a profit.

Seventy-seven percent of the surveyed farmers were male and twenty-three percent were female (n=28). Forty percents of the participating farmers were Caucasian, forty-five percent were African American and fifteen percent were Native American. Forty-one percent of these farmers had a high school education, twenty-five percent had “some college,” 12.5 percent had an “associate degree,” and 16.7 percent had a “bachelor degree.”

More than 93% of the farmers either agree or strongly agree” that they regularly attend farming workshops and training programs. Fifty-seven percent of the farmers list their business organization as “sole proprietorship” while four percent listed “partnership.” Seven percent of the participating farmers listed their business as “corporation” and thirty-two of the farmers listed their business type as “other” or

“unknown” (Table 3). The largest percentage of farmers had been farming from 10 to 20 years (Table 4).

**Table 2**

Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The main reason why I farm is because I love it.		3.6%	14.3%	17.9%	64.3%
My farm has been in my family for more than one generation.		3.6%		39.3%	57.1%
I plan to keep my farm in the family.			3.6%	28.6%	67.9%
I do not expect my farm to turn a large profit.	3.6%	10.7%	32.1%	17.9%	28.6%
Computers help me with record keeping and finances.		7.1%	10.7%	60.7%	21.4%
I have very little debt.	21.4%	17.9%	28.6%	14.3%	7.1%

n=28

**Table 3**

Form of Business	Percentage
Sole proprietorship	57%
Partnership	4%
Corporation	7%
Other or unknown	32%

n=28

**Table 4**

Years of Farming	Percentages
<10	11.1%
10 - 20	33.3%
21 - 30	18.5%
31 - 40	14.8%
>40	22.2%

n=28

## **E) Discussion**

Each farm represents an individual business enterprise that has to deal with its own unique set of factors. The success of a small farm is likely to be based on having characteristics that enable the farm to overcome changes in market demand and operating costs as well as to manage risk. Knowledge about the successful small farm is likely to provide valuable information about how to evaluate the “successfulness” of small farm operations and produce best practices models for small scale farm operations. However, overall results showed that most farmers farm because they love it, the farm has been in their family for more than one generation and they plan to keep the farm in the family. Unlike the case study findings, most of the farmers surveyed do use computers to assist them with their record keeping and finances. The small farm may represent an individual business enterprise but in reality represents a family business whose success is often measured in qualitative indicators rather than business quantifiers.

## F) References

- Environmental Systems Research Institute (ESRI). 2002 US Census of Agriculture, 2003.
- Doye, D., Jolly, R., Hornbaker, R., Cross, T., King, R., Lazarus, W., and Yeboah, A. (2000`R). "Case Studies of Farmers' Use of Information Systems." Review of Agricultural Economics. Volume 22, No. 2, Pages 566-685.
- Hilmer, M.J. (2001). A comparison of alternative specifications of the college attendance equation with an extension to two-stage selectivity-correction models Economics of Education Review, 20, 260-278.
- Humphrey, S. & E. Mussen (1995). In. S. Humphrey, E. Mussen, C. Myers, R.E. Voss, and C. Wyman (Eds.). Small Farm Handbook: (pp 7-8), University of California. Division of Agriculture and Natural Resources Publication SFP001, Oakland, CA.
- Mayerfeld, Diane Bell, "A Matter of Scale: Small Farms in the North Central Region," University of Wisconsin-Madison Center for Integrated Agricultural Systems, February, 2004.
- Mulholland, M.E. (1993). CIPP Evaluation Model Monitoring and Evaluating Agricultural Research, A Sourcebook. CAB International 53-57.
- Perry, J. & J. Johnson. "What Makes a Small Farm Successful?" Agricultural Outlook, Economic Research Service/USDA, November, 1999. Pages 7 – 10.
- Muhammad, S., Tegegne, F. Ekanem, E., (2004). Factors Contributing to Success of Small Farm Operators in Tennessee. Journal of Extension. Volume 42 Number 4. August 2004.
- National Commission on Small Farms. A Time to Act. A Report of the USDA Commission on Small Farms USDA, 1998.
- North Carolina A&T State University (1998 – 2002). Successful Small Farming.. Available at: <http://www.ag.ncat.edu/successfulsmallfarming/Default.htm>
- North Carolina Department of Agriculture and Consumer Sciences. 2005 North Carolina Agricultural Statistics, 2005.
- Peterson, W.L. (1980). The farm size issue: a new perspective. Staff paper P. University of Minnesota. Dept. of Agricultural and Applied Economics. February, 1980. (Pages 80-86).
- St. John, E.P., Kline, K.A., & Asker, E.H. (2001), "The call for public accountability: Rethinking the linkages to student outcomes." In D.E. Heller (Ed.), *The states and public higher education policy: Affordability, access, and accountability.* (pp.219-242). Baltimore, Maryland: The John Hopkins University Press.
- Strange, Marty (1998), "Family Farming: A New Economic Vision." Chapter 5 Lincoln: University of Nebraska Press.
- United States Department of Agriculture National Agricultural Statistics Service. 2009. "2007 Census of Agricultural." AC-07-51. US Government Printing Office. Washington DC.



University of Illinois Extension (2003). "Farm Business Management, May 31, 2003 Vol FEFO 03-10. University of Illinois at Urbana-Champaign. Available at: [http://www.farmdoc.uiuc.edu/manage/newsletters/fefo03\\_10/fefo03\\_10\\_size\\_economies.PDF](http://www.farmdoc.uiuc.edu/manage/newsletters/fefo03_10/fefo03_10_size_economies.PDF)

Walden, Mike (2006), NC State University Economic Perspective, July 20. NC State University, Raleigh, NC.