

## WHO ARE TODAY'S FARMERS AND WHAT ARE THEIR EDUCATIONAL NEEDS?

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### Abstract

*Farmers are changing! According to the U.S. Census of Agriculture, almost 78 percent of farms in 2002 had annual sales of less than \$50,000 – down significantly from previous years. Farmers have less time available for day-time workshops and are becoming more adept at obtaining information and participating in educational opportunities via the internet and private providers. Extension educators had only anecdotal evidence on the information desired and educational methodologies preferred by farmers. A statistically valid survey was conducted in 2006 of farmers in Arizona, Colorado, and Wyoming. The questionnaire was designed to discover the demographics, preferences for learning methodologies, greatest threats, and information demands of today's farmers. Survey results will aid in the identification of new Extension clientele and their education methodology preferences and perceived risks. Educators will be better able to develop risk management programs demanded by a far broader audience and to more efficiently use scarce resources.*

*Key Words: rural family, clientele, education, risk management, farming*

### Introduction

The rural West has experienced dramatic demographic and economic transformations over the past decade. The make-up of farm operators has altered significantly and enterprises are increasingly at greater production, financial, marketing, human, and institutional risks. Therefore, the role of Extension has become rather critical in economic sustainability of farm operations in the West.

Passage of the 1914 Smith-Lever Act launched Extension education in the United States with the stated basic purpose: “to aid the diffusion among the people of the United States useful and practical information on the subjects relating to agriculture and home economics and to encourage the application of the same.” In the earlier years of Extension the transfer of knowledge occurred primarily through face-to-face education. While face-to-face education continues to be an effective method, other delivery mechanisms have been used to keep pace with the emerging communication technologies, increased time constraints of both the producers and Extension personnel, and the structural change in the U.S. agricultural sector in general. These changing methods in education delivery include public radio in the 1930's, television in the 1950's and more recently Satellites in the 80's and the internet in the 90's.

The U.S. Census of Agriculture defines a farm as “any place from which \$1,000 or more of agricultural products were produced and sold, or normally would have been sold, during the census year.” Federal farm program payments are regarded as sales for the purpose of definitional eligibility.

According to the 2002 Census of Agriculture, there were 48,085 farms in Arizona, Colorado, and Wyoming. A total of 22,797 farms across the three states reported harvested cropland, which constituted a total of 6.533 million acres (2.644 million hectares). Farms reporting 1 to 49 acres (0.4 to 19.8 hectares) of harvested cropland totaled 10,204, or 45 percent of farms across the three-state region. As for animal producers, 21,431 farms reported cattle and calves for a total of 4.794 million head of cattle with 23 percent of those farms reporting 1 to 9 head of cattle and 12,228 (57 percent) having fewer than 50 head of cattle (NASS, 2002).

A comparison of census data for 1997 and 2002 shows several demographic shifts in Arizona, Colorado, and Wyoming farm and ranch populations. While the overall number of farms in the three states stayed consistent during that time, there was significant growth in the number of small farms.

Data show that 78 percent of all farms have annual gross sales of less than \$50,000. Most farm operators own and live on their own properties and operate them as sole proprietorships. Farms and ranches are increasingly being operated by females, and most farm operators have off-farm employment, many working off-farm 200 or more days per year. The average age of farm operators in Arizona and Wyoming declined from 1997 to 2002, while the average age of farm operators in Colorado increased during the same period.

Clearly, smaller operations constitute a sizable portion of those involved in crop and livestock production across the three states. And while the current census data does not provide details about the type or scale of smaller agricultural enterprises, it seems likely that smaller operators might engage in a wider diversity of animal and crop enterprises than larger operators. Smaller operators also may manage those enterprise activities in a manner unlike commercial operators.

Thus, a better understanding of the make-up of farm operators and their perceived threats is required in order to design effective risk management education. Anecdotal evidence and U.S. Census of Agriculture data support the thesis of a changing profile of traditional farm operators. However, more in depth information is necessary to answer the following questions:

- Who are today's farmers and ranchers?
- What are their preferences for learning?
- What do they perceive as the greatest threats to their operations?
- What information do they believe would be helpful to them as they manage their agricultural enterprises?

In order to expand upon data available from the U.S. Census of Agriculture and to obtain a more current picture of today's small farmers, a statistically valid survey was conducted in 2006 of farmers and ranchers in Arizona, Colorado, and Wyoming by university Extension educators and researchers (the authors) in cooperation with the National Agricultural Statistics Service of the U.S. Department of Agriculture. The survey targeted those farm operations with annual sales of less than \$50,000. To ensure a representative sample from each state, the numbers of survey instruments were allocated based on the population of small farm operators in each state. A total of 2,645 surveys were completed for a total response rate of 53.6 percent. Data were collected on small operator's demographics, sources of risks, information sources and preferences, resource management, and income status. Analysis of survey results provide insights to the characteristics of small farmers and ranchers in the states of Arizona, Colorado, and Wyoming.

Preliminary findings indicate that farmers within the targeted population are highly heterogeneous with respect to their social and demographic attributes. A potential new clientele has been identified as those operators who have never received information from Cooperative Extension, those who are at financial or production risk, and those whose farm income accounts for more than 50 percent of household income. However, the survey results also identified a gap between what respondents believe they need in the way of helpful information and educator curriculum.

### ***Farm Location***

The average distance between the property and nearest metro area for the sample of small farms is approximately 25 miles (40.23 kilometers), while the median distance is 12 miles (19.3 kilometers). Survey responses indicate that 71 percent of operator households have off-property jobs. The average distance traveled by an individual holding an off-property job is approximately 29 miles (46.7 kilometers), while most travel only 10 miles (16 kilometers). Careful inspection of the data reveals that there are some operators who have off-property jobs but do not travel any distance at all implying that there are some small farms where non-farm income activities are in practice.

### ***Demographics***

A great majority of small farm operators have lived many years within their communities and on their farms and ranches. Small farm operators are typically male, older than 54 years of age, and Caucasian. These operators' spouses help manage the business. About one-half of the two primary farm operators have at least a two-year college degree.

The survey found that 77 percent of the first operators (operator 1) are male, and the remaining 23 percent are female. On the other hand, 68 percent of the second primary operator (operator 2) are female. This suggests that if a farm is managed by two operators, it is mostly likely being managed by a couple. It should be noted that most of farms included in the sample are managed by only one operator (operator 1), and this in conjunction with the fact that 77 percent of operator 1 are male, suggest that small scale farming in the West are male-dominated agricultural enterprise.

More than 45 percent of both operators (operator 1 and operator 2) are in the age group 55 years and over. Summary statistics indicate that on average operator 1 have lived for 19 years on their properties. However, there are some operators who have not lived on their properties for any duration. At the same time there are farmers who have lived on their properties for 94 years. Similar inferences can be drawn for operator 2.

### ***Education***

In the development and delivery of educational programs, it is important to know the educational attainments of farm operators. Here educational attainment refers to the highest level education obtained by the operators. Approximately 50 percent of the operator 1 reported having at least a two years college degree, while an additional 33 percent have a high school education and one percent claim no formal schooling. A similar picture emerges for operator 2.

On the surface it appears that small farm operators in the West are educated. But a careful inspection of the survey data reveals that facts are not as rosy as they appear to be at a tangential look. In particular, a significant percentage of both operators (42 percent for operator 1 and 42 percent for operator 2) reported either trade school or high school as their highest level of education.

### ***Attitudes***

Just as there is no single type of family business, the reasons people are involved in rural family businesses vary. When asked to indicate why they engaged in their particular enterprise, respondents indicated that "working close to nature" was the most frequently stated reason for engaging in their particular enterprise. Survey respondents corroborated the assumption that a prime reason for family businesses is to earn money and support the family income. . Though it was hypothesized that factors such as rural isolation, lifestyle changes, and inheritance would be significant reasons for

owning/operating a rural family business; “limited alternatives”, “change in career”, and “inherited” were not seen by the respondents as major reasons for engaging in their rural family business.

For many, living and working in a rural family business is more than being in business. Some would say it is almost like a calling. The general impression is that family business owners are totally committed to the family business. The researchers wanted to know if this held true for survey respondents; or would certain developmental or lifestyle conditions lead rural family business operators to leave their business? But, the results of this survey clearly illustrate that respondents overwhelmingly expect to manage their property, “until I can no longer do the work”.

When asked about their sources of risk, survey respondents ranked financial risk as the most important source of risk in the agricultural operation. In addition, more respondents ranked financial risk either first or second than any other area of risk. Overall, production risk ranked as the second most important source of risk to financial risk as over 1100 respondents ranked it either first or second. Marketing risk was ranked as their third highest risk, although survey respondents were less definite in this area of risk than any of the sources of risk. Respondents ranked legal risk management the least important. In addition, fewer respondents ranked this area as the most important source of risk in their operation. Next to legal risk, more respondents ranked human risk the least important. More respondents did, however, give human risk a most important ranking than respondents did for marketing or legal risk.

Farmers and ranchers are the original entrepreneurs. From this study, a picture of the operators of rural family enterprises emerges.

- They appear very comfortable in handling uncertainty in the family business environment. Many factors that will help determine the ultimate success are outside of one’s control. To be successful, the family business operator must accept (some say relish) uncertainty and be willing to take risks.
- They strongly believe in their ability to create success for their business. A rural family business operator must have confidence in him or herself and their ability to run a successful operation. There may be plenty of people offering help and advice but the final decision is the operator’s.
- They consider themselves successful operators. A farmer or rancher in a family business is responsible for achieving his or her business success. The operator must have an attitude that “I will succeed”. If this attitude is not present, operators may not be inclined to put forth the effort needed to succeed.
- They have will power. Will power is the ability of an individual to control and direct behavior in accordance with chosen goals and values. It involves determination, resourcefulness, and responsibility for achieving goals. Overall, the respondents to this survey appear to have the attitude that they are achieving the goals they set for themselves and their business.
- They are fairly optimistic about the future of their business. To be successful in family businesses, one needs to be optimistic; have hope and a positive expectation for the future of the business. Though respondents were strongly confident in their own abilities, they were somewhat less optimistic about the future of their business.
- They are mostly confident in their ability to deal with changes taking place in their business environment. It is unusual for all plans and goals to come together as envisioned. Changes in the business environment, market place, interrelations with employees and family members require the business operator to be flexible and persistent.

Smaller operators are engaged in their particular family businesses to support their lifestyles and their families, to utilize their skills and knowledge, and to make money. They perceive financial risk to be their greatest challenge, followed by risks associated with the production of their commodity or product.

Overall, western producers are confident in their abilities to manage their family businesses and to achieve their goals; however, they are somewhat less confident in dealing with changes in the business environment. They appear optimistic about the future of the business, but they are not very comfortable balancing work and family demands. These individuals enjoy what they do and strive for quality in the family business. For the most part, they do not envision themselves doing anything else.

### *Operational*

Operators of smaller acreages constitute a sizable percentage of the total number of operators across the three states in the study area. These rural property owners typically own 40 acres (16.2 hectares) and do not lease additional land. Wells are the most common source of water, but surface water on or bordering such properties is also typical. Less than half of these property owners use some type of irrigation on their pastures. Many of the operators surveyed use agricultural chemicals, but only about 56 percent reported holding chemical applicator licenses.

Beef cattle, hay, and sheep and goats are the primary livestock enterprises on small farms. However, enterprise type for small operations is just as diverse as for larger operations. Just over half the animal producers indicated they have beef cattle, and the average herd size is 39 head. About 20 percent indicated owning horses, regardless of purpose. Approximately one-third of livestock owners raise their own feed, while the other two-thirds purchase their feed within a short distance of their farms.

Respondents also tend to heavily graze their own property. They reported typically grazing pastures 7.5 months a year and leave none or almost none of the forage. Their pastures have a 50/50 chance of being managed with a pasture management system. If they have a grazing management plan, respondents are likely to have a 4-pasture rotation. Very few have public land leases to supplement production from their own land.

The small acreage managers who reported crop production tend to be irrigated crop producers, with a majority of the acres in alfalfa or hay production. The typical alfalfa producer grows about 60 acres, and the typical hay (not pure alfalfa) producer grows about 51 acres. Small operators usually do not participate in government programs such as the Conservation Reserve Program.

### *Income*

Many respondents from small agricultural operations do not see themselves as farm and ranch operators. Of those who understand they are involved in agriculture, a large majority operate as a sole proprietorship. Two-thirds of the operators have less than \$10,000 in annual farm sales, and their revenues and expenses are reported on the Schedule F income tax form. For more than 80 percent of the operators surveyed, the income generated on-farm accounts for less than 20 percent of total household income. Paid employees, including family members, are not typical for small operations in Arizona, Colorado, and Wyoming.

### *Information Sources*

Small farmers and ranchers highly value personal or one-on-one interaction as a means of acquiring new information. Peer/support groups or networks are the most preferred mode of one-on-one interaction. Additionally, information is preferred in print format whether it comes from Internet web sites, trade magazines, or Cooperative Extension. Small producers are not likely to belong to commodity groups, to pay consultants, or to seek agriculturally related information from community colleges. The overwhelming preference for print media was followed by two other forms of printed information: newsletters and direct mailings. Email and video/DVD ranked last, aside from the two write-in categories.

Extension plays an important part in a producer's acquisition of knowledge. A large majority of smaller producers reported receiving information from Extension but not participating in an Extension program in the last 12 months. Understandably, given the average age of producers, most small farm families have not had any family members participate in 4-H for at least two years.

### **Implications for Extension**

From the 2002 Census of Agriculture it can be seen that 78 percent of all farms and ranches in Arizona, Colorado, and Wyoming have annual sales less than \$50,000. However, many people operating small agricultural operations do not see themselves as farm and ranch operators. Generally, the income generated by these smaller farming and ranching operations accounts for less than 20 percent of total household income for more than 80 percent of the operations.

A great majority of small farm operators have lived many years within their communities and on their farms and ranches. The properties tend to be about 25 miles from the nearest metro area. While some operators have off-farm jobs, they do not commute very far from their homes. Small farm operators are typically male and older than 54 years of age. Survey data suggests that such farm and ranch operators consider their spouses to help manage the business. About one half of the two primary operators of the farm have at least a two year college degree.

They are engaged in their particular family business to support their lifestyle and their family; to utilize their skill and knowledge; and to make money. With that, they believe that financial risk is their greatest challenge followed by risks associated with the production of their commodity/product. Overall, they are confident of their ability to manage their family business and achieve their goals; though somewhat less confident to deal with changes in the business environment. They appear optimistic about their ability and the future of the business. However, they appear less comfortable in balancing work and family demands. They enjoy what they do and strive for quality in the family business. For the most part, they do not envision themselves doing anything else.

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Extension should use significant resources to address the educational needs of smaller farmers. Topics should focus on the financial risks associated with beef cattle, hay, and sheep and goat production. Expanding their knowledge of irrigation, other water issues, and chemical application would not only allow small producers to better manage such resources but would enhance safe water supplies on each farm within a water system.

Extension administrators have, in recent years, encouraged faculty to decrease one-on-one interactions with clientele and expand the use of video and group education methodologies with the intentions of improving efficiency of program delivery. However, new educational methodologies may not appeal to smaller farm operators. Small farm operators may choose to seek out other, non-Extension sources which provide information in the format of their choosing.

Yet, Extension has adapted to new technologies, changing issues faced by farmers, and limited resources throughout the years. Extension administrators and faculty must develop relationships with small farm and ranch operators, study their needs and choices for education, and deliver high quality programs

addressing specific clientele needs. Delivery may have to occur in atypical settings and times and using formats desired by an aging, educated, and increasing female audience.

From this study comes a better understanding of western producers' educational needs and the threats facing their operations. Researchers are cautiously optimistic that the end result may be twofold: a more efficient use of already scarce Extension resources and an enhanced adoption of risk management strategies by agricultural producers across the three states. University and Extension administrators across the West may want to revisit the relationship Extension has with its clientele. Survey responses to questions pertaining to the value of extension as a source of information have far reaching implications for Extension's ability to fulfil its mission and for the long-term sustainability of small farms and ranches. Unfortunately, it is difficult to predict how Cooperative Extension may respond to meet the educational and informational needs of today's small operators.