

Learning Pathways of Non-Traditional Farmers in Agricultural Niche Markets

by

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Abstract

Farmers have turned to the University Extension system since its beginnings in the United States with the establishment of the land-grant institutions and extension services. This study focuses on niche market non-traditional farmers and their information needs. In the course of reviewing literature for this study it became apparent that very little if any study of the learning pathways of non-traditional niche market had been done. The case study approach is the appropriate method for gathering information on such farmers, their learning pathways, and how various educational resources such as extension have or have not helped. The farming niches studied here were bison farming, ornamental wild-type fish farming, bee keeping, and a direct sale pick your own style of apple fruit growing. The farming niches of three of the four participants were not addressed by any formal educational system at the time of this study. The four niche market farmers interviewed for this study provide insight into what worked and what did not work for their information searches. Their educational journeys were complicated and not without significant risk to their success. Non-traditional farmers, at the time of the interviews in 2005 to 2008, profiled in this study had wide ranging approaches and degrees of success in their pursuit of information acquisition.

Results of this study showed that the four participants came from a common background of growing up in traditional farming, embarking on other careers, and then engaging in niche market farming. However, they each had quite different methodologies for acquiring necessary information in their non-traditional farming pursuits upon their return to agriculture as a way of life and making a living. Information was acquired thru mentors, university extension, relevant published resources, niche business-oriented organizations, and trial and error research.

The outcome of this study highlights the need for a broad range of niche market commodities in need of support by university extension services. It also highlighted the need for a wide variety of information resources and delivery methods that need to be tuned to the needs of the individual more so than the group. After the study time period changes in technology have vastly altered the learning landscape for niche market farmers. The ease of finding information and like-minded farmers to collaborate with combined with vastly improved access to information have transformed niche market access and the odds of individual success.

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Chapter 1

Need for the Study

Modern farming systems and markets are very complex and to succeed as a producer of any commodity it has become necessary to become as fully informed and as educated as possible to remain competitive as an agricultural business entity. The niche market farmers frequently find themselves facing the need for further education, however, the traditional post-secondary system has until quite recently not offered any degree programs or classes beneficial to specific needs of these farmers. These farmers have depended on trade shows, business associations, and taking regular classes and then adapting the learned information to their specific business, or simply innovation from their own insights (Boehlje & King, 1998; King & Boehlje, 2013).

Prior to the advent of smart phones and high-speed internet services some niche market farmers looked to Extension as a source. Extension utilized seminars, research bulletins, and then briefly, the use of personal data assistant devices as a way of more quickly disseminating useful information. The recent explosive growth of the internet has greatly facilitated niche market farmers in finding information and educational opportunities. As the trading of information has facilitated the learning of these farmers it has also allowed public educators and private industry to search out opportunities to provide education to previously underserved groups (Boehlje & King, 1998).

It is well known that farmers in general need the very latest and best quality information and education resources to remain viable in business. Land grant universities are equally well known as an educational resource for common commodity farmers to expand their business and technical knowledge. Niche market producers face additional challenges in the information discovery process. Their niche may be so small or so new that the information resources they need may or may not exist. The intention of this study is to discover what educational and information resources are used by niche market farmers, how they found the information sources, how their searches changed through time, and their assessment of source quality and relevance (Muhammad, Isikhuemhen, & Basarir, 2009). Niche market farmers tend to be also small farmers producing non-traditional products which further complicates their information search (Muhammad, et al., 2009).

In some cases, banks are requiring farmers to get an educational upgrade to a level determined by the financial institution as being necessary for them to remain customers of the bank for loans (D. Miller, personal communication, January 10th, 2019). It is therefore more difficult for niche market farmers to satisfy such requirements for financing as the education resource they need may not be available. Knowledge is survival. In a mixture of awarding financial inputs to farmers and educational outcomes, the extension system was employed to deliver Trade Adjustment Assistance funds to farmers that were linked to their educational outcomes from participation in this program (Neibergs, et al., 2015).

Statement of the Problem

The educational pathways for agricultural niche market operators tend to follow a route that is not associated with the standard learning model of technical colleges and universities to provide educational resources during the period (2005 to 2008) covered by this study. This study was intended to highlight this discrepancy and give voice to the educational needs of the interviewees based on their responses to the twelve survey questions. After an extensive literature review it was determined that few peer reviewed articles or theses exist covering the specific niches of the farmers interviewed.

Purpose of the Study

The four interviews done for this study were structured to determine how the farmers found the knowledge they needed primarily from outside of the traditional post-secondary educational system. The interview responses provide insight as to how each of them has acquired and applied the information that has allowed them to operate on a profitable basis.

Objectives

The study objectives:

- 1) How do niche market farmers learn?
- 2) Does the university extension system adequately address niche market farmer needs?
- 3) If the extension system does not address the needs of niche market farmers, how did the farmers fill in the gaps in their knowledge?
- 4) Did they succeed in their acquisition of knowledge?

Definitions

- 1) **Agricultural Niche Market Farmer:** A farmer whose business model learning needs are not always addressed by the standard post-secondary educational system. They produce commodities not widely available such as traditional crops of corn or soybeans. (Anderson, 1990; Jackson, 2010; Muhammad, et al., 2009).
- 2) **Artisanal Learning:** Learning by apprenticeship, generational learning within families, or adopting methods found in guild structured learning. (Gowlland, 2012; T.M., 1881).
- 3) **University Extension System:** A learning system for rural education based in the land grant universities of the United States of America. (Fox, 1976; Franz, Garst, & Gagnon, 2015)
- 4) **Traditional Post-Secondary Education:** The traditional American public education system with regards to the land-grant university institutions and extension services (Comer, Campbell, Edwards, & Hillison, 2006; Gould, Steele, & Woodrum, 2014; Fox, 1976).

Assumptions

It is assumed that each farmer gave honest answers to the survey questions.

It is also assumed that the farmers in this study would have benefited from a publicly available post-secondary educational resource.

Limitations

The study is limited to the following:

- 1) The time frame in which the interviews were conducted and the contents of said interviews (2005 to 2008).
- 2) The published literary and thesis resources available and relevant to this study and how they relate to the needs of the study participants.
- 3) The new information gathered in this study is limited to the responses and context of the farmers who were interviewed.
- 4) Educational resources available to farmers in the United States.

Chapter 2

Literature Review

The cooperative extension service has provided service to US farmers since 1914 as a formalized public educational system and continues to adapt to their ever-changing needs. It is the outgrowth of the concept of a land-grant university providing a broadly available public education by literally extending the outreach to those not formally enrolled as university students (Gould, Steele, Woodrum, 2014). The extension system has been highly successful in providing this service to the extent of the knowledge base available. Peer reviewed education journals and less formal sources yielded several articles on the nature of adapting university extension and other information sources to the needs of underserved niches (Anderson, 1990; Brislen, Tanaka, Jacobsen, 2016; Diekmann & Batte, 2009; Franz, Garst, Gagnon, 2015; Muhammad, et al., 2009; Niebergs, et. al, 2015; Wolfe, et al., 2018).

For some niche market farmers, the task of acquiring new information is often not so straight forward as calling the local extension agent and requesting literature and advice (King & Boehlje, 2013). Niche markets by their very nature are often isolated courses of endeavor or business. The participants in this study have turned to their specific niche trade organization group(s) and associated meetings, fellow farmers in the niche, niche market publications, extension publications if available and relevant, as in the case of bee colony creation (Findlay, Eborn, Jones, 2015), the internet when access is relevant, and when all else failed as a resource they innovated their own solutions.

Farmers in general are increasingly turning to the internet for new information and new formats of accessibility (Jones, Doll, Taylor, 2014) as the study participants have done as well since the advent of better internet access and better connectable device technology such as smart phones and the networks capable of handling the delivery of the information (Buttles 1999; Lowry, 2014; Pfeiffer & Love, 2007). Beginning in 2007, there was an effort to contact niche market farmers by physically going to farmers markets to meet potential new users of the Extension Service (Burrows, 2008) and broadcast useful information through PDA delivery. The relatively recent ability to access information beyond the confines of a trade organization and only printed publications has transformed niche market farming in ways that are evolving at a rapid pace. Given the much larger number of Journal of Extension articles starting in 2014 it likely that the vast improvements in internet access and devices have fueled this development. Information and education resources being developed are now available quickly and efficiently to the niche market farmers and those farmers who are visible on the internet may be easily discovered by educators seeking to disseminate their findings. The extension system is adapting by simply asking the farmers what educational formats are useable and suitable to a given producer demographic through the process of surveys and gatherings of farmers at educational discussion forums where all are invited to give input on the issues important to them. The information delivery methods are widely diverse with the younger more educated farmers far more willing to use the internet for all aspects of learning while the older and often less educated farmers are looking to printed materials, personal interaction with experts and educators, and limited internet use at best. The extent of which farmers value, seek out, and implement new information and new enterprises seems to be quite linked to their dependence

on the financial outcome of the enterprise as opposed to those who have additional or primary income from non-farm sources (Diekmann & Batte, 2009).

In response to producer requests by niche market farmers in search of additional help to further develop an enterprise, Extension offices are developing staff (DeBord, 2007; Muhammad, et al., 2009) with expertise in the relevant fields. Established farmers are seeking new enterprises to supplement their income or even replace their former majority income enterprise entirely as in the case of tobacco farmers (Mendieta, Velandia, Lambert, Tiller, 2012). The cross pollination of delivery formats combined with feedback from the farmers is forming a more grassroots style-based education system that is composed of groups of niche farmers (Bardon, Hazel, Miller, 2007; Bennett, Johnson, Parker, 2009).

While most the farmers in the study during the 2006 to 2008 time period of the interviews were not yet served by traditional education programs with widely available degrees or content, there are now in 2019 several traditional educational institutions such as Custer Community College in South Dakota, the University of Pennsylvania system, University of Wisconsin – Stevens Point, and North Dakota State University that are now offering degree programs, courses, seminars, extension publications, or online clearing house pages of web links that are relevant to the farmers in this study.

Robert Yin's (2014) book on case study research has been cited in other educational qualitative studies such as (Reales & Gomez, 2015; Shumate, 2012) as the research format is similar to this study in that each person interviewed is the primary source of the information needed for analysis. Case study methodology lends itself to discovering new ideas and information within the agricultural environment as locality and the best use of resources varies greatly. The entrepreneur farmer becomes a student of their own life. The use of the case study method is the best and possibly only choice for the researcher if there is little to no previous peer reviewed literature resources for a given farming niche. All 4 farmer's niches studied here fit that description.

A study of African American farmers who participated in a USDA program designed to help them stay in farming used the case study approach to gather information in the farmer's own context (Hargrove & Jones 2004). Information was gathered regarding how well it had worked for some of the program participants utilizing an in-depth interview process in part driven by the farmer's own experience. In a recent case study of high school agricultural education programs regarding effectiveness of learning (Heinert & Roberts 2018) in entrepreneurship development the case study approach was chosen to determine what program/curriculum characteristics are most useful to achieve the intended outcomes from the interaction of a teacher and their high school students. They noted in the study that this particular aspect of learning had not been given much, if any, previous peer reviewed research attention which then favored using the case study approach.

Even further to the point, there is a rather noteworthy study conducted to examine stakeholder educational needs from and communication with extension personnel. Communication barriers in between extension personnel and producers of commodities outside the realm of the traditional crops were identified using the case study method (Kelsey & Mariger, 2002).

Chapter 3

Research Methodology

Design of this Study

Based on principles of qualitative study as outlined by Dr. Robert Yin in his book (2014) it was determined that the case study method was a good fit for this study. Very few studies of either a qualitative or a quantitative nature in agricultural education had been done prior to 2008 regarding niche market learner needs relevant to the farmers in this study. As stated in chapter 2, no thesis level studies as determined by a Proserv database search in 2008, and rechecked in 2018, have been done in the four specific farming niches covered here.

It must first be determined who the farmers are as learners. To this end a series of questions were designed to allow for the farmer to tell the story of their own path. The goal of this study was to determine the how and the why of what they do regarding learning methods, information search, and knowledge discovery. Since the approach is qualitative in nature it was necessary to remove researcher bias as much as possible and allow for the farmer participant to drive the direction of the answers to the survey questions in a flexible manner that reflects their personal story (Kelsey, 2006).

As such, the case study format is ideal to simply ask the questions and learn from the answers. The 12 questions were designed to get a good sense of where the farmers came from in terms of demographics, their background in agriculture, and how they began their information gathering. Further, what they did to improve their information collection, and what they have done, in the absence of the more traditional educational sources serving their needs, to improve their learning and their enterprises? During the interview process, it was necessary to ask a few impromptu follow up questions for a better understanding of the farmer's answer.

The study participants were chosen as they obviously were not farming in the traditional categories of common grain and livestock commodities and had also experienced personal and economic success in their chosen niches. The study participants were found using the personal and the professional contacts of the author.

Each farmer was contacted to set up a time and place for their interview that worked within their needs for availability and enough time to answer all the questions in one session. Three of the farmers chose their own homes and one chose to meet in a library reading room. It took almost a year to acquire the four sets of answers as each farmer had very little extra time in their lives for anything outside of their pursuits. The interviews which were audio recorded for accuracy. The interviews were then transcribed to facilitate analysis of the answers (Westfall-Rudd, 2011).

As revealed in the next chapter, each participant in this study was a non-traditional farmer in the sense that all of them left the farm in their early years, pursued careers in non-farm jobs, and eventually returned to farming for their livelihoods but in fields not connected to the knowledge acquired from prior agricultural experience. This study sought to shed light on what educational resources a farmer needed to basically start over from the beginning of learning a new enterprise to making a living in a personally novel way.

To this end, the questions then looked at each farmer's initial information search methods followed by how those methods evolved (or not) had suited the needs of each farmer. The last part of the survey questions asked how each farmer would structure a publicly available education system to suit their needs going forward from the perspective of the 2007 to 2008 time period of the interviews.

Chapter 4

Introduction

The interview process revealed, using the lens of knowledge acquisition-based questions, the learning pathways of four successful niche market farmers. Interview responses are grouped by question for chapter structure and for clarity of analysis. Their responses are summarized to protect the identities of the farmers and/or to condense a lengthy response while remaining true to the nature and the content of answers as given by each farmer. Some of the answers given went on at length to detail specific examples of the information and learning journey. When relevant and supportive, direct and unedited quotes from the farmers are used.

Some impromptu follow up questions were asked towards the end of the interview with the fish farmer. It became apparent the initial question list did not adequately address the large gap in information availability vs what the fish farmer needed. The original question list did not allow for a true innovator in uncharted market space to give direct and accurate answers to questions 10 and 12.

Interview Response and Analysis

1) What got you interested in farming for profit?

For all four farmers, the desire to return to agriculture as a lifestyle and finding a means of making a living to remain in that lifestyle. Each is a non-traditional farmer in that all had gone from starting out on a family farm or other family agricultural business to the age of young adults to pursuing education and a career outside of agriculture and leaving the traditional farming lifestyle behind.

The bee farmer's perspective:

"Farming got imprinted on me a child and it continues to be my passion to this day. When I grew up I had to figure out a way to make a living at it. I had learned primary, secondary, and tertiary farming skills; I liked the independence of farming. It's agribusiness now, not farming like it was years ago. The family farm is pretty much gone. I prefer to make my living with living creatures, domestic animals and plants, as opposed to wearing a suit and dealing with the bureaucracy of corporate life."

Bison farmer's perspective:

"Well, I guess I always wanted to embrace a rural lifestyle. I have spent a lot of my time growing up in the city prior to coming to the ranch, but I grew up on a horse ranch as a kid. I always had a desire to have a cattle ranch as I was growing up but when I got to the point of being able to afford it I thought why have cattle when I could have America's native cattle. I thought they would be easier to raise and I thought I didn't have as much time available as a conventional farmer as I have a job as well. So, I needed to find an animal as trouble free as possible and I had spent my lifestyle in the city and a cabin on the lake. I wanted to pursue my dream of a rural farming lifestyle."

Apple farmer's perspective:

“It was a backdoor entry. I was involved formerly in importing photographic products, consumer goods, from Europe mainly from Germany and Ireland. The orchard offered some tax advantage opportunities and a change of lifestyle.”

Fish farmer’s perspective:

“Grew up on a farm part of my life but it was sold when I was too young to take over due to cost of buying a farm. Couldn’t afford to invest in a traditional farm so I started looking for niches without the investment that traditional farming requires and still make a living.”

After a period of years in their careers, each came to the realization that they wanted an agricultural lifestyle back and set about determining how to do so. All four stated it needed to be a living as much as an address on a rural road; both are important to them. They recognized that traditional agriculture for the common commodities required investment beyond their means and/or an already producer saturated market. They found niches where the investment was primarily acquiring knowledge, sweat equity, finding an underserved market, and an enduring entrepreneurial effort to succeed. They took stock of what they knew from their early years in agriculture and applied methods and knowledge as workable to find their new niches. Also, the niche appealed to their personal interests which is another commonality.

2) Do you have a traditional farming background?

The respondents diverge on agricultural origins. The bee keeper and the fish farmer grew up on what can be considered traditional family farms and learning traditional agricultural working experience on family farms. The bison farmer started out on a horse farm and the apple farmer came from a family that had commercial greenhouses. In the general sense, they are all from an agricultural background.

The fish farmer, in his words, “Grew up both on the farm and in the city. Father was in the military.” The bee farmer stated having a complicated background, “Yes. I grew up on a farm but not absolutely not traditional. My parents divorced when I was very, very young, and my grandfather died, spent most of my teenage years working on other people’s farms, actually living on someone else’s dairy farm as a worker from age 14 to 17. Difficult question, I grew up on my grandfather’s small farm as a little boy, we did fruit trees, cattle, bees, chickens, the kind of a subsistence style farming from the Old World, everything done by hand such as using a cream separator. Farming got imprinted on me a child and it continues to be my passion to this day.”

By contrast, the bison farmer said, “No, I don’t. I was raised on a horse farm until the age of ten and then we moved to the city. There was no contact with farming until I bought the ranch and started raising bison. My wife has a traditional farming background, she grew up on a dairy farm, however she left the farm at 18 for college and was not involved in farming for 20 years after that.” The apple farmer answered, “Not as such, I was raised in the horticultural industry, my family had greenhouses, and we worked with those.”

3) What is your educational background to date?

All four farmers pursued post-secondary education that did have anything to do directly with agriculture. The apple and bison farmers earned undergraduate degrees in business. The bee farmer completed 14 years of technical school with several certificates that in summary resemble a master's degree in a professional development program. The fish farmer had 3 years of college as a biology major.

4) How did you start your information search?

All four started by networking with people they knew, if possible, and then subsequently with those they met who had their agricultural niche in common. They eventually found people who were useful and trustworthy in their niche specific business and a few became mentors to the farmers in this study. The bee farmer worked for another successful bee farmer for several years before striking out as a new single proprietor.

They found books, periodical publications, asked questions of the Extension Service personnel, attended seminars that proved to be useful, and went to trade shows to find other producers.

Not all the people they met during networking meetings were useful resources to them or even reliable. Some of the people who offered to help had their own agendas and tried to use people new to the business niche to their own advantage.

The bison farmer had this to say, "At the time we started, there were people who raised bison, a few books written, and some self-professed bison guru's that were willing to share some information. We followed what they had to say and hear-say as bison raising was fairly new. We read the books and publications, listen to the guru's, followed their advice. However, we've been doing this now for 16 years and found that everything we were told in the beginning was wrong. People we learned from in the beginning were trying to catalyze the bison industry wanted us to do the same things with bison as were done with cattle. "

The bee farmer had a less jaundiced view giving the following answer, "I started with a hobby keeping bees and as a sideline job I went to work for a commercial bee keeper to see how it was really done. I asked a lot of questions, and his operation grew quite large, and I became a full-time employee. Most of the skills I have learned are from other people in the bee keeping business, my own experience learning the hard way, and from my former employer."

Hard copy publications, if available, periodicals, and internet resources were also a mixed group of relevance, accuracy, and reliability. Where information was lacking the farmers simply began to innovate their own solutions and did a lot of trial and error R&D.

Basically, the commonality of the beginning of their information search was largely filtering sources for relevance. They implemented new ideas and observed outcomes to see what was workable or not. Sometimes the information was not to be trusted and the sources discarded.

5) Do you have a mentor?

The bee farmer ended up with 3 mentors and the others have none. The bee keeping niche is very much a hands-on learning environment.

From the bee keeper's life experience, "I learned from a 3rd generation bee keeper from Louisiana and I learned from my former employer who is my mentor. I also learned from his mentor."

The working knowledge is passed on in a guild-type of learning taking several years before they have the ability to be the person in charge and additionally economically survive as the owner of their niche business. The fish farmer said that family members did provided encouragement and support but had no knowledge in the ornamental fish business.

6) What information sources do you use regularly and why?

The bee farmer said the there was only one reasonably trusted, but not completely trusted, industry publication that had standing in their niche. The bee farmer uses this source, "The American Bee Journal, it's kind of our trade journal and they are also a supply catalog. Its where anybody who is anybody in bee keeping is connected. We advertise our products. It's sort of a meeting ground for us. There are other sources but even the university studies are published in the Bee Journal." There is an annual convention for his niche but it's difficult to get away from the day to day business operations to do so.

The bison farmer uses trade shows almost exclusively and the fish farmer uses one specific trade show and a wide variety of trade magazines as little else is available for either farmer. The apple farmer has 2 reliable trade organization memberships, trade bulletins and publications, and says Extension resources are useful and adequate.

7) How did you find the sources of information?

The apple farmer was referred to the WI Apple Growers' Association at the beginning by the former owner of the orchard. The bee farmer said, "Sooner or later, you find someone with a copy of the Bee Journal, and they give it to you." The bison farmer went to conventions and found other producers to talk to and exchange information with. The fish farmer found what little information there was on native North American sport fish and adapted it but relied almost entirely on home-based R&D to find what worked. The fish farmer summed it up saying, "A lot of trial and error, R&D, literally stumbling on ideas and techniques. Non-commercial fish information was virtually non-existent. Some information was available on Muskies and other sport fish, so we tried to adapt that to our system."

8) How satisfied are you with the quality of the information resources?

Responses to this question varied greatly from excellent ratings to nothing suitable at all. The bee farmer stated sources had to be thoroughly vetted and their recommendations tested rigorously in the field before accepting such sources as valid.

The bee farmer said, "It varies a lot. I deal with those who provide reliable services and products. Much of what's published from a lab or a research is not useful. Information and techniques may not apply outside of the controlled conditions, the single hive that was the test site, or be commercially scalable for 20,000 hives, or even cost effective at all. Some of what's published is just plain silly, what hits the media as a new threat to bees is not the case. We have been dealing with these disease and pest threats for years and it finally got published."

The bison farmer found the network of fellow bison producers was very satisfactory as an information resource meeting all their needs and had this to say, "Very satisfied, it's really worked out well the things that we have implemented. If it worked for them it has generally worked for us too. We might refine it a little for our local environment, grasses, and geography."

The apple farmer said, "Relative to the changing of varieties, and growing techniques, and integrated pest management, excellent. As far as marketing, not really."

The fish farmer is not satisfied at all with the quality or quantity of sources. According to the fish farmer regarding information source satisfaction, "Not very much at all. I have an example of the lack of information. There is no such thing as a green Gar egg and the original author had to have been color blind, and yet, this information on the green egg color persists in the literature because everyone quotes that first publication. The eggs range white to indigo blue to charcoal grey for all four species of Gar after personally observing four to five million Gar eggs. Varies even by the individual female in each species. Spawning only occurs in spring, not as often quoted by paper authors at a hatchery in TX as happening both spring and fall. Basically, nothing useful. Technology, there is some useful information."

9) How much time do you spend seeking new information and/or new sources?

Adequate and available time to pursue new information sources was a primary concern for the fish, bee, and bison farmers. They rely on trade shows and the internet for much of their information seeking. The fish farmer and the bee farmer particularly indicated that their enterprises were too small to employ workers to keep the businesses running in the absence of the owners. Thus, finding time to get to a trade show was quite limited.

The fish farmer said, "At this stage, very little. I might hit a trade show a year, maybe spend 2 weeks a year on that. Once or twice a month searching on the internet." The bee farmer echoed this statement, saying, "In my case, that's very difficult. I'm in an awkward stage, too small to hire a big crew but too big for a one-man operation so I'm spread pretty thin."

The bison farmer said, "I would say we spend about 2 weeks a year going places and talking to people." The apple farmer is also quite satisfied with the current information sources spending little if any time looking for new ones. The searching the internet for new information has become important to all four farmers.

Optional follow up question for all four farmers as part on #9:

Have you ever sought to find knowledge on a need to know only basis?

When the bee farmer has problems to solve the only sources used are mentors and associates in the bee industry. “When I have problems, I first go to my mentors, my associates in the bee industry and ask questions.”

The apple farmer answered, “yes”, and did not elaborate. The bison farmer said only if they found a need to improve their operational methods. The fish farmer has sought to broaden educational horizons and said, “Yes, books on fish that I never intended to rear but I thought might be of interest. Also, I had a partner, another farmer, for 8 years, and he travelled to South America to gain insights from other producers in different species. Just expanded knowledge to have the knowledge.”

10) Have your information resources changed in the course of time?

Only the apple farmer did not indicate a change in information sources over time. The other 3 farmers had found that their sources changed a lot with time and sometimes the current sources in no way resembled the beginning sources. Again, the internet has radically changed the availability and variety of sources for all four farmers. Even if the source has not changed, the accessibility to it has changed to include the internet.

Fish farmer said, “I’m utilizing the internet more now, once or twice a month searching on the internet, and it didn’t exist 20 years ago.”

For the bee farmer, becoming a business owner shifted focus to needing to know how to make the correct decisions in every aspect of the business to survive as a producer. The meant upgrading from operationally focused learning to business management learning by consulting mentors, other keepers, and industry experts.

The bee farmer said, “Yes. When I was the manager for someone else’s bee company I pretty much had my head down and only concerned with the day to day operations. But now I have to make financial, operational, and business decisions for myself. Now I am afforded more time to talk to experts and other keepers out of necessity. When you hit problems and you are in over your head and don’t ask for help, well, then you are a fool. My motto is *Improvise, Adapt, and Survive*.”

The apple farmer said, “No, they’ve been pretty stationary, stagnant. I usually find what I need.” The bison farmer no longer consults what they refer to as “bison gurus” as having really have nothing to offer in the way of useful information. They now have regular contact with other producers and share ideas. The fish farmer is using the internet more now and it did not exist 20 years ago (as referenced by the 2007 to 2008 interview time frame). In comparison, the fish farmer might get to a single trade show in a years’ time but is on the internet every month for the same purpose of information research.

Fish Farmer follow up questions regarding question #10.

Are there particular resources on the web that you go back to or ones that you have dropped?

“Primarily manufacturers of hatchery equipment, what’s coming on the market that is economically feasible.”

Did you ever utilize the university resources?

“The trade show that UW Stevens Point puts on. I ran into the situation that people were trying to pick my brain and not so much for techniques but trying to get at my niche market and horn in on that. Limited market of buyers and uncommon customers, small scale niche.”

11) What do you do when you can’t find the information you need?

The bee farmer said, “No one has all the answers. The industry is working on the major issues, pests and diseases spread as bees are moved around. Multiple options to solve a single problem are normally used in tandem. We work together as keepers to survive. U of MN, Ohio State, they are doing great work but it’s not widely applicable results. A few USDA bee inspectors are quite helpful but that is the very much the exception to the rule.”

The apple farmer just keeps looking for solutions and usually finds what is needed. The bison farmer said, “A lot of the information is not available, and you can’t find it.” Bison industry information is not always reliable, the bison farmer does a lot of trial and error to filter the information results. The fish farmer said, “Start thinking.” and added, “Try to adapt existing technology from industries outside of fish farming. Extension is of no help at all.”

12) How would you structure an agricultural education system to best serve your needs?

The bee farmer had quite a bit to say regarding this last question. While noting that the university system is a good first step the actual workings of a bee enterprise must be learned hands on from another bee keeper. The bee farmer said, “Scientists know things that the keeper does not, and the keeper knows things that the scientist doesn’t know; it takes working together.” The bee farmer talked about the business of bee keeping as an art passed on generationally and much is not written down. Learning to manage the details on which success or failure rides is a primary concern. The bee farmer says, “I’m a pragmatist and classroom theory is useless without also working with a commercial bee keeper. Possibly a really good internship program would help.”

The apple farmer refers to market dynamics for a small orchard and the current state of public K12 instruction and offered this commentary, “I think in any business you need to analyze the market and what is the need. The economy is evolving and the place for this type of business exists. Organic is a growing market for produce and also locally grown food. The young generation is being taught work skills and a sense of entitlement rather than how to run a business.” As an owner of an orchard, the apple farmer found it takes constant involvement of the owner and posed the question, “The business doesn’t run without the constant involvement of the single owner so is it a job or a business?”

The lack of motivated hard-working new people entering the apple industry has proved to be a concern. The apple farmer further stated, "As far as this type of niche, it's going to be interesting because the younger people of today don't want to work as hard. Through education they have been conditioned that they are entitled to everything and don't have to do anything for it. Consultants for the industry are becoming more common. The job market is changing due to the oncoming recession (2008) and that may bring young people into the industry."

The bison farmer has found trade shows as forums for sharing information are what work the best. The bison industry is rather new and there is not a lot of information. Regarding formal education, the bison farmer's response was, "Formal education, no." It is reasonable to assume this answer has resulted from the bison farmer's learning experience and success utilizing a peer to peer type of learning.

The fish farmer was stumped, saying, "I don't even know how to answer that one."

Fish Farmer follow up questions regarding question #12.

What would be the ideal set of resources to get someone started in the industry you are in?

"First and foremost, what needs to be developed are markets for non-typical agriculture, labor intensive, that one person without a whole lot of money can get started in."

How would you structure the extension system to serve your industry?

"The marketing aspect comes first. Without finding or developing a market and teaching how to access it there's no need for further education to help with making a profit in a niche enterprise."

What publicly available system would you prefer as an educational resource? Would that be extension, a university department, or other?

"Extension, way more accessible. Growing up I was told to get a high school diploma, get a college degree, and you will have good employment in agriculture. Found that wasn't true. Had to look for my niche. Primarily teach intensive market research, discovery, development, and customer education."

Through trial and error, you invented your own marketing system?

"Yes, and re-invent as needed."

Chapter 5

Introduction

Niche market farming, by its very nature, requires a unique focus of learning for a given enterprise and information gathering that suits the producer's needs. This makes comparing interview responses somewhat difficult and finding several commonalities among the participant's responses initially seemed rather unlikely due to the very diverse nature of the enterprises. As the interview process progressed, commonalities in the quest for information useful to each farmer emerged. The four farmers in this study share a common background as young people who left traditional agriculture for other careers and then returned to their roots and sought a niche they could inhabit successfully. This may have had a filtering effect on the learning style and learning success of the four farmers. An investigation into non-traditional farmer demographics regarding their backgrounds prior to entry into niche market agriculture is needed to determine what effect cultural and educational backgrounds have on the success of the farmer learner.

Analysis and Conclusions

Two intangible outcomes of the interview process showed each farmer being quite passionate about their chosen enterprise and lifestyle. Each has put tremendous time and effort both into the day to day running of the business and into the sharp focus of learning the best possible methods to succeed. Living a lifestyle of farming and being a farmer, not an urban dweller with urban mindset transplanted into the rural landscape, matters greatly to all four farmers.

The results of the interviews will be grouped in to four general areas of enquiry. First, what is the background and origin of the farmers? Second, what was their initial foray in to the search for information and success therein? Third, how did their information gathering change or mature into a reasonable and reliable structure? Fourth, what does the future of learning for their niches look like and what would they as producers recommend?

Background and Origins

All four farmers have a similar background as young people raised in families involved in some form of traditional agriculture. Each farmer interviewed desired to return to farming in some capacity that yields a living. There is sufficient diversity in their backgrounds that makes a broader statement possible of non-traditional farmers based on the study participants.

Currently active farmers with an agricultural personal history have returned to a lifestyle they initially did not choose as young adults but have retained the cultural knowledge and dynamic methods of learning to be comfortable in pursuing a renewed rural lifestyle. The passion for their enterprises displayed during the interviews showed that enthusiasm is important to enterprise and lifestyle success (Shumate, 2012, Ch. 5). When difficulties appeared, the farmers sought solutions not a repeat of industry exit.

Farmers' Initial Information Search

The farmers in this study each did a lot of information acquisition through traditional types of research. Books, publications, trade shows, and on-the-job training played a part in their

experiences. Only one farmer had a job in commercial bee keeping prior to becoming an independent operator in the same type of enterprise. The other three had no prior knowledge or experience with the niches they eventually focused on. For them, it was a complete start up learning process from discovery of their enterprise concept to making an attempt at running a business. Due to the relatively small amount of information available to both, the fish farmer and the bison farmer found the startup process particularly difficult. The apple farmer had a much more mature industry in which to pursue widely available information of high quality and relevance.

The bee, bison, and fish farmers all talked about trial and error and testing out what worked. As there were very few to non-existent formal traditional educational resources for them to initially rely on this is not a surprising outcome. Discovery of information simply became part of their business model such that it was considered normal to not always have ready answers for every question in the beginning. They remained open minded, creative, and receptive to new learning which greatly facilitated their success. As startup operators in new or relatively new niches of endeavor they represent pioneer and early adopter types of personalities willing to learn and to risk failure in pursuit of a goal. They talked about the unreliable nature of some of their first used information resources and after repeated testing of the outcomes the bison and bee farmers had abandoned some of those early sources as worthless at best or worse yet as catastrophically bad information. The sources that did survive the test of time and efficacy remain in their repertoire. Modern bee keeping is now an industry composed of backyard hobbyists with a few hives and the commercial operators each with thousands to tens of thousands of hives. The educational needs of all bee keepers are the same regarding successful hives and honey production.

To some extent this process was mirrored by the apple farmer but with the advantage of Extension resources in place that had already vetted much of the useful information. This farmer found that the quality of the information resources through Extension, apple grower associations, and the retiring farmer who sold the orchard to the apple farmer were very satisfactory resources.

Evolution of Information Sources and Gathering Techniques

It could be said the bee farmer's personal outlook on business practices is one of skepticism. In response to how information gathering and how sources had changed through time, the repeated theme was test ideas out in a minimal risk manner before broad application of new information or physical resources. The bee farmer noted that some industry suppliers did not always have the best interests of the producer in mind. This statement was echoed by the bison farmer who discovered that some of the first people who were called experts were in fact also promoting their own bison interests without saying so. An educational resource that comes with caveats and underlying interests that interfere with the quality and purpose of learning must be viewed at arm's length prior to accepting the resource as valid. The fish farmer had virtually nothing to go on besides native sport fish techniques provided through the USDA and US Department of Interior. Instead of relying on outside resources, the fish farmer turned to internal R&D and looking at other agricultural industries for adaptable ideas and technology including the tropical ornamental fish trade.

All three farmers expressed some degree of dissatisfaction up to outright contempt for some of the earlier information resources they had used. This drove their need to keep looking for other sources and to innovate novel techniques when nothing else worked. Necessity pushed them to become more self-reliant, resilient, and more discerning of information value to survive and thrive in business.

Unlike the other farmers' response to question 10 regarding changes in information sources the apple farmer said no changes needed and in fact described the search effort as "stagnant".

The one factor that all four farmers stated as crucial to their success was market development for their chosen niche. A common theme here was Extension could be of the most help by locating or participating in market development for niche farming products.

Farmers' Outlook on Future Learning

The bee farmer and the bison farmer both had much to say on the hands-on nature of their operations. Extension is seen as having some place in their list of resources but not at the top of the list (King & Boehlje, 2013).

The bee farmer said that hive location microclimate is so influential on outcome that any formal education would have to be paired with an excellent internship program and a mentoring program to be of any use to a new learner.

The bison farmer now regards fellow producers as the top information resource and doesn't see a role for Extension in terms of formal education. Possibly useful would be soil, hay crop, and pasture management techniques that can be considered general good practices.

The fish farmer thought that Extension would be the very best route to develop a publicly available and very accessible educational resource. Teaching methods of market discovery, research, development, and consumer education were the four main concepts the fish farmer felt most strongly about for the future. Noted further that survival depended on the fish farmer's own efforts to make these concepts become functioning real-world applications as virtually no one else could help him.

The apple farmer said that the current resources of Extension, apple grower's associations, USDA research and variety development, and local state agriculture department publications were sufficient to satisfy all needs.

It would seem reasonable to conclude based on the interview responses that there is a need for much more in-depth educational resources for three of the four farming niches studied here. The exact structure of the learning environment is open for debate and makes for a useful starting point for further study.

The university extension system seems to be a good fit as it has served the farming community nationwide since the 19th century (Scott, et al, 2018). The network is established and the connection to higher education is already present with a reputation for quality and competence.

There are numerous articles published on the Journal of Education website for alternative enterprises over the past 25 or so years. There is a lot to filter through to find relevant articles

and the task can be somewhat daunting to those without good internet skills and some creative search words. Often, useful ideas are found in off-topic (not the niche topic at hand) articles that address the needs of an entirely different niche, but such ideas may be completely adaptable to new areas of inquiry and learning.

Author's Recommendations and Perspective from 2019

Future study of agricultural niche farmers, markets, and consumer trends and the interactions of all of them are required for any educational program to be developed and is a well-known concept. Serving the learning needs of non-traditional farmers has been found to be needed and is a growing trend as witnessed by the large number of small producers participating in farmers markets and various forms of direct sales to consumers. The problem lies in the lag time between identification of needs for small niche farmers and the resulting needed educational resources emerging.

University based extension services have provided support to spread learning of needed information for decades and that has, to a very limited extent, benefited the farmers who were interviewed for this thesis. However, based on the answers given in the interview process it became apparent that the farmers were primarily relying on the collective knowledge of their peers and their own support/research groups such as the National Bison Association that was created and funded by the members and exists specifically for the benefit of the members.

Since the time frame of this study in 2007 to 2008 there have been positive changes in 2 of the fields studied here. Post-secondary educational resources that have emerged resulting in generally available course offerings now exist for bee keeping and for bison farming. It is now possible for almost anyone to participate in online learning which is crucial for the small operator who can't spend time traveling to a classroom or even a trade show.

Custer State University offers a degree program in bison management and North Dakota State University and Montana State University offer classes in bison studies. The Universities of Penn State and Rutgers (New Jersey) are offering bee keeping courses. Other colleges and some of the extension offices are offering more information on these subjects as driven by farmers looking for answers. These programs have a general origin time of 2014 to present which corresponds to the emergence of better internet technology and better devices that can access it. Very little was found in the literature search through 2012, however, beginning in 2014 and forward to the present there has been a large number of peer reviewed articles on a wide variety of topics. The search for niche market information has become much easier today as simply there is now published information to search through that did not exist until recently. Interestingly, a search of Proserv in 2018 did not yield any thesis level papers on the four farming niches studied here. There is a lot of research available on non-agricultural niche markets to be found in this resource. Given time this hopefully will change.

The author found through this research study that the most useful thing that could be created and of immediate use to Extension professionals and the farmers they serve would be a clearing house of information website in all aspects of niche market farmer learning needs (Jones, et al, 2014; King & Boehlje, 2013). A number of websites, mainly from public colleges, have a links page but not all of the links remain valid and some these sites are not routinely updated for

content such as the one provided by North Dakota State University. The 1st four links to what should be major niche farming relevant sites are either no longer valid/no forwarding address or the site names have been sold and now have nothing to do with the subject of farming as viewed on December 11th, 2018.

Ideally a clearing house site targeted to Extension use would provide niche-based market links, data, resource people, potential mentors, consumer education, educational programs, and new resources and ideas as they become available. The independent nature of niche farmers also gives credence to the concept of the farmers themselves serving as a community of learners and teachers helping themselves (Bardon, Hazel, & Miller, 2007; Bennett, Johnson, Parker 2009; Shumate, 2012) and their helping with Extension staff professional development in return. The outcome of this study will hopefully elicit a response from the post-secondary educational community to better address underserved learners in agricultural niche markets.

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Appendix A

The 12 twelve questions used as the basis of information gathering by the author for this study.

- 1) What got you interested in farming for profit?
 - 2) Do you have a traditional farming background?
 - 3) what is your educational background to date?
 - 4) How did you start your information search?
 - 5) Do you have a mentor?
 - 6) What information sources do you use regularly and why?
 - 7) How did you find the sources of information?
 - 8) How satisfied are you with the quality of the information resources?
 - 9) How much time do you spend seeking new information and/or new sources?
- Optional follow up question as part on #9:
Have you ever sought to find knowledge on a need to know only basis?
- 10) Have your information resources changed in the course of time?
 - 11) What do you do when you can't find the information you need?
 - 12) How would you structure an agricultural education system to best serve your needs?

Appendix B

University of Wisconsin-River Falls
 IRB HUMAN SUBJECTS RESEARCH REVIEW
 PROTOCOL PART 1. Cover
 Sheet.

Original Submission	Proposal Modification [3	Renewal C]
Date Received:	IRB USE ONLY Approval Date: 8/1/07	Protocol Number: HDG-162
Review: exempted	Expedited <input type="checkbox"/> Full Board <input type="checkbox"/> Board <input type="checkbox"/>	Signed Reapproval Date: _____ Board Members present: _____

This application is to be submitted to and approved in writing by the IRB prior to the initiation of any investigation involving human subjects, data or material.

A. Principal Investigator: James D. Fisk

Dept/Program: AGED US Mail address: 1443 300th St, Glenwood City WI 54013

Telephone: 715-781-4958

Email address: james.fisk@uwrf.edu

Sponsor (if PI is a student): Dr. Timothy J. Buttles

Project Title: Non-Traditional Farmers in Agricultural Niche Markets

Beginning Date: 8-9-2007

Ending Date: 8-9-2008

B. Is extramural funding being sought? no Potential Supporting Agency: none

C. Requested Review Level: See Appendix A of the manual for instructions on determining the appropriate level of review. Be aware that the IRB may require a level of review different from your recommendation.

Exempted review

Expedited review

Full Board Review C]

A complete protocol consists of Part I, this Cover Sheet, and a brief narrative consisting of Part II, Description of Study, and Part III, Human Subjects Protection. Follow outline for Parts II and III beginning on the next page, addressing each item. Attach a copy of the informed consent form you will administer, if any, and any instruments or questionnaires you will use. If your study will collect data at a school, institution, or place of business other than UW-RF, or if you will use data that belongs to another entity, attach a letter (on the organization's letterhead) from an official responsible for the testing site or data certifying that you have the organization's approval for the study.

Submit protocols to Bill Campbell, UW-RF Director of Grants & Research, 104 North Hall, 410 S. 3rd St., River Falls, WI 54022. If your protocol qualifies for exempted or expedited review, provide the original and one copy. If it requires full board review, provide the original and six copies.

D. Statement of assurance: I/We have read the UW-River Falls Policies and Procedures for Research Involving Human Subjects, and will comply with them, including the informed consent requirement. Further more, I/we will inform the IRB if significant changes are made in the proposed study.

James D. Frost 7/31/07 Tom Bess 2LL2