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Agribusiness Extension: The Past, Present, and Future?

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Abstract

Land Grant Universities from their inception have combined extension programs with research and teaching. This makes them unique from other universities and extension programs can have a synergistic effect on both agribusiness teaching and research programs. While being relatively young, Agribusiness Extension programs have evolved from a rich history of agricultural economics programs to meet the current needs of a changing clientele and environment. While initial emphasis in extension programming focused on the needs of farmers at the production level of the supply chain, agribusiness extension programming has reached out to involve more suppliers and buyers in support of the entire chain. This paper examines the evolution of agricultural economics into agribusiness extension programs and looks at what is currently happening with agribusiness extension programs including the linkages to research and teaching. The paper then current and predicted trends and what they might mean for agribusiness extension programs in the future. Agribusiness Extension programs have evolved into many strong programs that universities in the face of budget cuts continue to support. However, these programs face many challenges and opportunities and will need to continue to build on their success of providing answers to a changing clientele to take them into a strong future.

Keywords: agribusiness extension, future

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Introduction

Land Grant Universities (LGUs) and extension programs, from their inception over 100 years ago, have had a tradition of meeting the current needs of the agriculture community through research, teaching and extension (Anderson 2004). While initial emphasis in extension programming has focused on the needs of farmers at the production level of the supply chain, agribusiness extension programming has reached out to involve more suppliers and buyers in support of the entire chain. The combination of extension with research and teaching makes LGUs unique from other universities, and can enhance both research and teaching. Agribusiness extension programs in particular have a synergistic effect on both agribusiness teaching and research programs.

Agribusiness extension, while being relatively young, builds on a strong foundation. Agribusiness extension programs have evolved from more traditional agricultural economics extension roles to meet the current needs of a changing clientele and environment. This paper will look at past, present, and future agribusiness extension programs and their interaction with both research and teaching programs at land grant universities.

Reflections on the Past

Since their inception, agricultural economics and agribusiness extension programs have been about providing science based education to producers to help them make better business decisions and hence be more profitable/successful. Extension educational programs have changed to better meet the evolving challenges producers face and the delivery methods used. In the early 1900's, extension agricultural economists focused on three areas: management (for both producers and agribusinesses), market analysis and intelligence, and policy analysis. During the period of 1900-1914, farm management issues dealt with globalization and land allocation issues. This gave way to volatile times and an emphasis on protectionism, getting out of the Great Depression, dealing with unstable markets and many policy innovations (Chavas 2010).

Since 1945, agricultural extension economists have turned their attention to labor migration out of agriculture and the rise of farm mechanization, the increase in farm size and decrease in farm numbers, the impact on farming operations from increased productivity and the trend towards the privatization of agricultural research. (Chavas 2010). As agribusiness firms have grown in size, they continue to employ scientists and economists that increasingly conduct research activities that used to be the sole domain of universities.

The traditional role of an agricultural economics specialist was to examine the economic differences in production techniques of commodities and serve as an access point to market data collected by the USDA. In the past, the focus was on commodity agriculture and understanding how to be a low-cost producer. It was also focused on letting producers understand how supply and demand forces were affecting the prices of their commodities. Since it was based on commodity production with many producers doing similar things, the answers could be somewhat generalized. Agriculture extension economists often focused on production economics, including crop budgets showing how to optimize the choices for input uses such as

fertilizer. While their work was important, the focus was on understanding the firm-level economics associated with improved production techniques, often resulting in a marginalized role of the economist compared to crop science and animal science. Additional problems emerged relating to marketing commodities. Connections to firm-level decision making beyond the farm was largely limited to Capper-Volstead cooperative development, marketing orders, and anti-trust issues and these issues were largely left to research-oriented programs.

Much of the formative years of agricultural economics extension work centered on assisting in the formation and dissemination of agricultural outlook reports for major farm commodities. The first National Agricultural Outlook Conference was held April 20-21, 1923 at the Bureau of Agricultural Economics (BAE). With the creation of the BAE in the USDA in 1922, many in the BAE felt a procedure should be developed to disseminate the results from economic research to farmers in a manner that would serve as useful guides for their production and marketing decisions the following year (USDA 1942). The conference was designed to provide this outlook and has continued ever since (Ferris 2010).

Special committees were formed around the major agricultural commodities with additional attention provided to understanding the economics associated with domestic demand, agricultural competition and the demand in foreign countries (USDA 1942). By 1926, a few of the leading state agricultural economists were involved in preparing the annual report. The role of state research economists shifted to extension specialists who were invited to the USDA for training sessions on the outlook. A strong partnership developed between the USDA and the Land Grant institutions in which the state extension economists both gained from, and contributed to, the development of the outlook material, making it applicable to the farmer constituency (Dixon 1928).

At the outset of the Federal-State Outlook program, state specialists involved were primarily trained in farm management and served as the link between the USDA and the county extension agents to implement the program. Considerable attention was given to the process of integrating the outlook information into an ongoing farm management program, which had concentrated on budgeting, with county staff and farmers (Ferris 2010).

Over time, state outlook programs evolved and there were many common characteristics across states, including farm magazine articles, articles in departmental publications and other university and trade publications, radio programs, public speeches and the organization of state outlook meetings. Often, outlook presentations were part of programs sponsored by farm organizations. Some state specialists covered livestock and field crops, while others covered poultry, dairy, fruit and vegetables (Ferris 2010). This was an excellent foundation for today's agribusiness extension, but the needs of extension clientele began to change and so did agribusiness extension.

A traditional model of "training the trainer" is reliant on an adequate number of skilled people at both the state and county levels. This model assumes that county agents are trained by people at the state level and then deliver programming in groups and one-on-one at the county level. A considerable number of county agents in the authors' home states received their training and undergraduate education in disciplines other than agricultural economics such as animal science,

agronomy, and horticultural science. This disciplinary disconnect places the burden of transmitting agribusiness concepts on the shoulders of state specialists. Training county extension faculty in agribusiness subjects is often met with trepidation and a request by county faculty to have state specialists either deliver these agribusiness programs in person, or to provide the extension programming in the form of toolkits that can be handed out to extension clientele. This might mean even more problems for agribusiness extension that relies on different answers for different situations and using more analytical tools for the individual situation.

Cooperative extension in most developed countries like the U.S. is part of a university system, especially in land grant universities. Extension programming and advice is closely tied to the research and teaching that takes place at the university (Anderson 2004). It is this intersection of research, teaching and extension that has enabled land grant universities to serve diverse clientele bases.

A Look at the Present

What we have outlined as the history of agriculture economics extension programs describes the traditional and primarily commodity focus of agricultural economics extension. Agribusiness extension programs evolved considerably in the last 15 years. This was the time period that agribusiness programs expanded and came to the forefront, broadening the reach of the extension mission to include all businesses affiliated with food and agricultural value chains. While in some ways this was a new extension area, it was building on the foundation of agricultural economics extension programs that focused on providing science based education that helped producers make better decisions and hence improve profits and have higher probabilities of succeeding. Agribusiness extension programs were a response to a perceived need of new clientele facing new problems. They were also adapting to changes in technologies and changes in their environment including changes in how universities evaluated their budgets and programs.

State-level value-added support institutions were being created through the 1980s and 1990s, primarily attached to the Land Grant Universities, but also funded through various USDA and state programs (Woods and Hoagland 2000). These programs emphasized business development for farmers and cooperatives pursuing various forward or backward integration opportunities, as well as the creation of agribusinesses deemed to create a positive impact on farm incomes. These value-added centers created a new surge in demand for agribusiness extension programming, including feasibility study support, management and marketing training, supply chain management, economic impact studies, and financial management. As these centers expanded in scope and number, new federal programs emerged, such as the SBIR,¹ and the USDA Value-Added Producer Grant Program. The nature of these programs required ag economists that were assisting to make a careful study regarding the value-chains, competition, and financial viability

¹ Following from the stated purpose of the SBIR program which has included the USDA as a significant participant: "The SBIR program was established under the Small Business Innovation Development Act of 1982 (P.L. 97-219) with the purpose of strengthening the role of innovative small business concerns in Federally-funded research and development (R&D). Through FY2009, over 112,500 awards have been made totaling more than \$26.9 billion."

of these enterprises, and to be actively engaged with the farmers and other business leaders in enterprise development.

In the past, producers relied upon agricultural extension specialists to be the gateway to access the USDA and to generate market, financial, and business planning information. Technology changes included the development and access to agribusiness planning tools. Two such tools were FINPACK and AGPLAN, developed by the Center for Farm Financial Management at the University of Minnesota. Originally, these farm financial planning and analysis tools were delivered via computer disks. With the rise of the internet and more “user friendly” programs, producers were increasingly able to access the information themselves. Today, FINPACK and AGPLAN can be immediately accessed on line (<http://www.cffm.umn.edu/>). While FINPACK and AGPLAN were originally the product of farm management specialists, agribusiness extension economists have adopted these tools.

The Agricultural Innovation & Commercialization Center (AICC) at Purdue University is another example of providing online business planning tools for agribusinesses (<https://www.agecon.purdue.edu/planner/>). Agribusinesses can assess the potential of new ventures by completing online templates, and if necessary, contacting staff at the AICC. This website allows individuals to start writing a business plan with INventure, an online business planning tool. If participants respond to the key questions the planning tool asks, and then complete their business plan, they should be ready to present their business plan to potential partners (AICC 2011).

National online agricultural marketing web portals such as AgMRC (Agricultural Marketing Resource Center) serve as an electronic resource for producers that are interested in value-added agriculture. Producers can “browse commodities and products, investigate market and industry trends, study business creation and operation, read research results and locate value-added resources” (AgMRC 2011). This ability to search websites like the USDA (<http://www.usda.gov/wps/portal/usda/usdahome>) gives producers an understanding of how the greater world and national markets are affecting the commodity supply and demand and hence the prices they are receiving and paying. Once again, with additional information available to them, producers are able to take on more of this role themselves. The Extension Committee on Organization and Policy (ECOP) suggested that one of the challenges for extension programming would be keeping up with the advances in information technology (2002). However, cited examples show that agribusiness extension programs are successfully implementing new programs utilizing information technology.

This same technology shift (the internet) also opened up a window of opportunity for some producers to market their products directly to consumers. Occurring simultaneously were movements such as “buy local first” and “slow food”. Farmers’ markets were expanding in many U.S. states (USDA-AMS, 2011), requiring more producers to fulfill the demand. Other market trends included organic food and natural food. Many consumers were going to farmers’ markets looking for these.

Producers, rather than entering commodity markets, were integrating farther along the supply chain and engaging in both production activities and the marketing to the final customer. Rather

than attempting to be the low cost producer, these producers wanted extension programming that focused more on differentiated product strategies. This involved strategic management and supply chain management, allowing producers to move past being price takers.

Today, agribusiness extension programs focus on industry-level coordination issues, looking at economic issues within the entire supply chain. Extension agribusiness economists work with entrepreneurship and business development, industry strategic planning, market and technology innovation diffusion, and firm/local industry differentiation strategies. There is more emphasis on niche marketing, looking at the consumer and market questions rather than focusing on production. This also means that producers are doing vastly different things and the programming focuses more on business management techniques and understanding consumer preferences. Various Centers for Agribusiness have emerged within LGUs that provide services such as executive education and entrepreneurship development. While the audience is mixed, the focus is on small to medium sized producers and other non-farm supply chain partners. These changes have created both problems and opportunities.

Programs like the Quinten-Burdick Cooperative Management Center, the Consumer Cooperative Management Association, and Cooperation Works have been providing a range of extension-type programming to agricultural cooperatives leveraging strong Land Grant research and teaching connections for some time. The National Value-Added Conference, a somewhat ad hoc assembly of extension professionals working with value-added businesses, are essentially sharing and developing programs targeting farm-based businesses that are forward integrating. Technical feasibility support tools are central to this group that supports national initiatives like the USDA Value-Added Producer Grant program. Other smaller scale, geographically dispersed clients that can benefit from expanded attention from agribusiness extension can include (but are hardly limited to) specialty food channels, values-based market channel partners, national trade organizations, agritourism ventures, food processors, food wholesalers, small scale exporters, and others. Many of the economic and management tools developed for localized audiences can be readily adapted for managers within these groups. The opportunities for further reach and new program development need not be confined to domestic-based firms. Many like audiences are increasingly accessible internationally.

Anderson (2004) points out that extension faces issues of scale and complexity in countries with large numbers of farmers working relatively small acreages. Although Anderson was describing extension in a developing country context, increasingly, agribusiness economists are finding a similar situation in developed countries. With the increased interest in shorter supply chains and buying local, there is a growing interest in agricultural production from people not traditionally associated with agriculture. These agricultural entrepreneurs are passionate about pursuing agricultural interests, but they are often ill-equipped to handle all the production, distribution, packaging, and marketing needs demanded by today's food supply chains. Producing and delivering effective agribusiness extension programming to these clientele groups is costly, and their specific needs vary by region and supply channel.

Here is one example of how an agribusiness extension program has responded to these changing clientele and needs. In Florida, there has been an increasing need to serve the needs of small producers seeking to adapt their businesses to complex value chains. The last two years, the

University of Florida Small Farms team has organized a state-wide small farms and alternative enterprises conference. There were approximately 800 attendees each year from these “small farms and alternative enterprises.” Production practices, market orientation, and philosophical viewpoints represented by the attendees varied widely along the following characteristics: organic production, traditional production, sustainable practices, fruit and vegetables, meat animals, animal products (wool, alpaca, etc.), direct marketing to consumers (on the farm, at farmers markets, pick-your-own), direct marketing to intermediaries such as restaurants and schools, selling through cooperatives and brokers, and internet sales. Surveys from the conference indicate a high level of satisfaction with the overall extension programming that takes place at the conference, but it also revealed the strong demand from these small farms and alternative enterprises are for additional extension programming.

At the same time that agribusiness extension programming has been evolving, universities have been facing budget issues and there is a trend towards more accountability and the need to evaluate the impacts of extension programs in general. The increasing complexity of the food system is making it more difficult to attribute specific impacts at the producer level to extension programs. This leads to political pressures and uncertainty in budget allocation matters. Evaluating impact means measuring the relationships between extension programming, and extension clientele’s knowledge, adoption of practices, use of inputs, increased productivity and profitability, and other related improvements to their welfare (Anderson 2004). Producers are making changes over time and those changes cannot be attributed to just one conference and/or extension workshop. Instead, it is a combination of help from a variety of extension programs including workshops, conferences, one-on-one counseling and other non-extension actions. So a key question for agribusiness economists is how to properly measure the impacts of extension programming over a longer time horizon than knowledge and skills gained as surveyed upon completion of an extension program. This corresponds to ECOP’s recommendations for extension in the twenty-first century which included adopting assignment-based performance measures (2002) but highlights the issues and complexities in actually adopting such systems.

Budget issues at universities have also increased the need for agricultural economists including agribusiness extension specialists to secure external funds from grants and contracts to support their agribusiness extension programs. “Formula Funds” for extension programming in general have been decreasing over time. While this has been happening, agribusiness extension programs in the authors’ states have maintained funding or expanded funding allocated to them. This shows the importance that extension administrators have placed on agribusiness extension programs. However, it has not eliminated the need for external funds to support programming. Grants allow more programming to be done with increased funds available, but also take the specialists time away from other things as the extension specialist must serve as a grant administrator in addition to extension programming, research and teaching. Where grant dollars are available will also drive what programming is done as programming will need to fulfill the requirements of the grant. Agribusiness extension programs have expanded in part because of the grant dollars available for this type of programming. A shift in grant funds available, could affect the future of current programs. Many successful programs may not continue without grant funding. ECOP (2002) suggests that extension programs seek new funding sources and to provide incentives for faculty to acquire non-traditional funding sources. Agribusiness extension

programs have adapted to new funding sources, but realize that they come at a cost and in some cases funding sources now drive development and continuation of programs.

Agribusiness extension programs have also found acceptance and support from different partners. These include state and local government agencies interested in rural development. Traditionally, rural areas sought to attract a company or manufacturing facility to their area. This provided jobs. The problem was the dependence on a single industry or company. Today they would like to diversify their economies through creating and growing small businesses. They see agribusinesses and agriculture related products as good both because they build on the resources and industries in the area, and because they can provide bigger returns because they source more products locally and spend the profits in the region. Extension economists assist producers as they evaluate value-adding and vertical or horizontal integrating opportunities. Utah State University recently developed a rural business development conference. The conference has been held annually for 8 years and has had high visibility in Utah. The conference focuses on business management skills with emphasis on marketing issues, financial analysis, and showcasing producers that have developed differentiated products and businesses. This conference after the first year was listed as one of the five priorities for rural development in Utah by the Utah Governor's Rural Partnership Board. Agribusiness extension programming in some cases is seen as a resource for rural development.

Linkages to Research and Teaching

The issues being addressed by agribusiness extension programs are often focused on very applied situations of agribusiness. At its best, agribusiness extension programs can show how the concepts being researched and taught in agribusiness programs are being used by actual businesses. They can also highlight the needs for additional research and be the incubator for new research projects. They can also give students the opportunities to work with actual businesses to apply the techniques taught in classes to actual situations.

The Extension section of the Agricultural and Applied Economics Association has been proactive in building linkages between extension, research, and teaching by creating the Graduate Student Extension Competition that is held annually at the AAEA meetings. This competition is sponsored jointly by the Graduate Student section of the AAEA and gives graduate students the opportunity to learn to prepare and present appropriate analytical results for an extension (usually non-economist) audience. This can be based upon the graduate student's research for a thesis or dissertation. Participation in the competition enhances the professional growth of the participating students regarding extension programs (www.aaea.org/sections/extension/.../GradCompBrochure2011.pdf).

As a profession, agricultural economists continue to discuss ways to create stronger linkages between extension, research, and teaching. For example, Joseph Balagtas offered tips for assistant professors on how to specifically build synergies between two or three way appointment splits (Balagtas 2009).

The Food Distribution Research Society (FDRS) is also concerned with strengthening linkages between extension, research, and teaching. In addition to paper sessions during annual

conferences, FDRS has instituted the FDRS Food Marketing Challenge. During this competition, student teams are challenged to apply their knowledge of food distribution, economics, management, marketing, and/or merchandising to a real-world management situation. Representatives of the sponsoring agribusiness and related industry experts interact with the teams throughout competition. Extension components are often an integral part of the competition (http://fdrs.tamu.edu/FDRS/Student_Food_Marketing_Challenge.html).

The International Food and Agribusiness Management Association (IFAMA) is an international association whose members represent both industry and higher education. The mission of IFAMA to provide members with multiple vehicles for information sharing, knowledge advancement, discussion and debate, networking, and career development (IFAMA 2011). IFAMA is another venue that agribusiness extension economists have to strengthen the linkages between extension, research, and teaching.

This integration of the agribusiness teaching, research and education programs can elevate all three providing a better, more interesting, educational experience for students, increased ideas and contacts for research and better information and techniques to supply to extension clientele. With the increased focus on professors needing to show impacts of their work, it is more important to get multiple uses out of projects. For professors with 2- and 3-way splits, it is often imperative that they integrate their programs to increase their efficiency.

Exhibit 1 highlights some of the relationships between agribusiness extension, teaching, and research. Agribusiness extension draws heavily from supportive and collaborative efforts from other departments in colleges of agricultural and life sciences, from business schools, and economics (and related social science) departments. Agribusiness extension programs serve many groups outside the university. These external groups (e.g., agribusiness trade groups, input

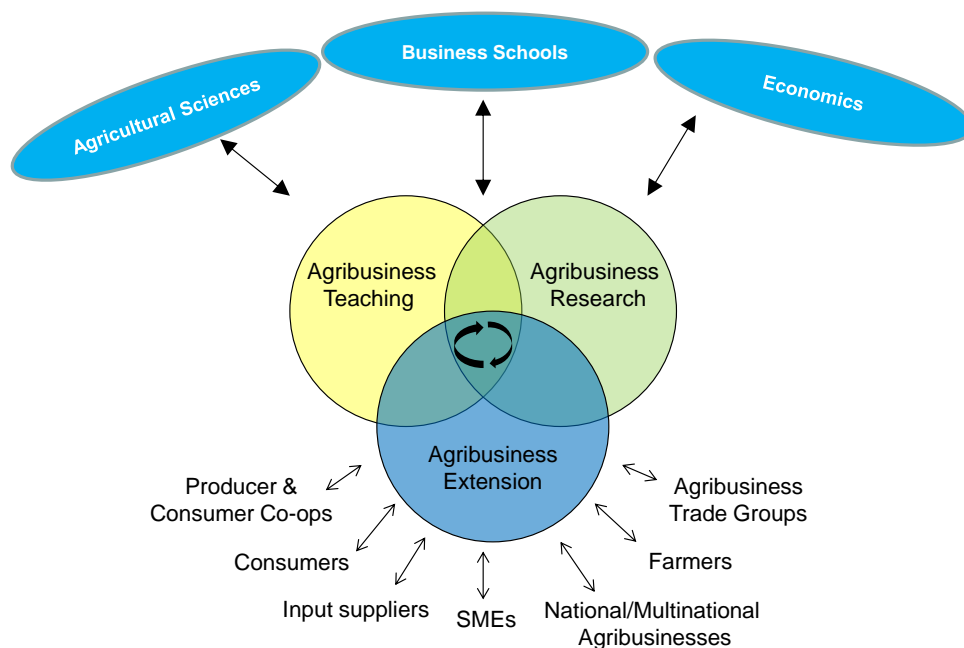


Exhibit 1. The Interconnectedness of Agribusiness Extension, Teaching, and Research

suppliers, producer and consumer cooperatives, etc.) are used to support both teaching and research through an iterative process of programming to them and learning from them. While the authors acknowledge the affect clientele groups have on teaching and research, the focus of this paper is on extension and the linkages between extension programming and clientele.

While the existence of agribusiness extension programs within a department do not guarantee integration with and support of agribusiness teaching and research programs, such integration can be used to increase the effectiveness of all three areas.

The Future of Agribusiness Extension

We are in a period where more grant funding has been made available for agribusiness in general and more NIFA grants are requiring a portion of the project be aimed at extension efforts. While in the past this has been done partly in name only, increasingly we are seeing requirements for significant extension efforts. This allows agribusiness economists to be the central part of projects rather than an after-thought or a small part. The USDA-Rural Development administers the Value-Added Producer Grants (VAPG). By sharing their knowledge with grant applicants, agribusiness extension economists can play an important role during the grant process. VAPG grants may be used for planning activities and for working capital for marketing value-added agricultural products and for farm-based renewable energy endeavors (USDA-Rural Development 2011).

Colleges of Agriculture are seeing agribusiness programs as ways to increase student numbers and programs that can grow in the future. This is increasingly important as numbers for traditional programs decline and the composition of agricultural economics faculty continues to evolve. Perry (2010) has conducted an extensive study of the agricultural economics professors as our profession celebrated its 100 year anniversary in 2010. He found there were more faculty 60 and older (233) than 40 and younger (208). Faculty in their 50's outnumbered those in their 40's by 50%. Only 18% of the extension FTE was held by faculty under 40 and 61% by faculty above 50. This is a significant challenge for agribusiness extension programming as extension clientele and technology continue to evolve.

Another trend pointed out by Perry (2010) that significantly affects all extension programming is that younger faculty tended to have smaller total FTE appointments, suggesting a great proportion of younger faculty on 9-month appointments. Regarding specializations in agricultural economics, two areas seem to be growing, agribusiness and resource and environmental economics. The reason for growth in agribusiness is likely tied to undergraduate programs, which have been trending upward in the last 20 years.

Universities are facing significant budget shortfalls requiring program cuts. The 2000 to 2008 period was a period of significant decline in tenure/tenure-track agricultural economists at the 1862 LGUs. There was significant attrition of tenured agricultural economist from 2000 to 2008 with an estimated 331 faculty (ages 59 and up) leaving their tenured positions from 2000 to 2008. Of the middle group (ages 47-58), there was a net loss of 83 faculty. In total, there was a net loss of 254 faculty from 2000 to 2008, or 20% of the faculty numbers. The reasons for the losses were at least partly demographic. The first spike of faculty born around 1941 largely

retired from 2000 to 2008. Most agricultural economics departments have experienced a net loss of positions in the early part of this century (Perry 2010).

These losses in tenured positions and budgetary pressures may cause fewer resources to be available for extension efforts and having extension be a smaller portion of the roles of professors. This can cause professors to have less time to develop new projects as they scramble to fulfill current teaching and extension needs. Additional challenges and opportunities in the future regarding agribusiness extension include potential/need for more electronic delivery of agribusiness extension programs, and developing an extension methodology that does more than just document our reflections and understanding using literature review, anecdotal information and our collective experience.

All extension programs are not the same, nor should they be. There are differences and similarities. For example, the small farm conferences in Florida and Utah are similar in scope. Many agricultural economic departments have reduced the number of extension specialists over the years due to retirements and budget cuts. A few notable exceptions to agribusiness extension efforts being limited to a few agricultural economists in a given department can be found at Texas A&M University and Oklahoma State University, where these departments appear to have a critical mass of people with agribusiness extension appointments.

There is a potential need for more electronic delivery. Whether it is the development of additional business planning, financial planning, or risk management tools, today's extension clientele are seeking online solutions to their problems. Extension entomologists at the University of Florida, for example, have developed iPest1, a downloadable iPad application that provides color photos and text describing almost 40 pest species (http://santarosa.ifas.ufl.edu/documents/lg_ipad_apps.pdf). It would not be too hard to imagine the development of agribusiness tablet applications. For example, an application that allows the user to forecast pricing trends, or an application that can help a producer to assess the risk of a given business decision. Extension programs also need to look at new information outlets to disseminate information. This does not mean just putting traditional communication forms such as fact sheets online, but also using information tools such as social media to connect with clientele. This is in line with ECOP's (2002) call for educational approaches with appropriate use of technology.

As they have in the past, agribusiness extension programs will need to continue to evolve to meet the changing needs of clientele. In doing so, they can continue to play a vital role in the LGU mission as it provides feedback to the research and teaching roles. In a similar vein, it is vital for research that creates new knowledge needed by agribusiness extension clientele. All three LGU missions are needed to maintain strong programs in agribusiness.

Agribusiness Extension programming will continue to focus on improving management skills, decision making, and strategic thinking within value-chain development. Additionally, traditional focus on improved value chain performance through coordination strategies, new roles for institutions, and management education on new business models, policy design and impact, market outlook, and firm-level feasibility and risk management strategies will continue to be important contributions from agribusiness Extension specialists. Some important changes

for agribusiness-oriented extension programs seem imminent as extension programming more generally undergoes changes in scope and focus.

Changing communication technology is reshaping business boundaries as well as how extension programs are delivered. The internet has become a quick and low cost source of information. Increased computing capacity has opened the door for many kinds of training to be made available without regard to one's geographic location. While many pieces of useful information are available to agribusiness managers on line, not all of it is vetted through unbiased sources or developed with professional economic or management expertise. Still, this media has become a highly valued source, especially for first levels of inquiry.

Improved communication technology will lead to ever-improving instructional approaches involving distance learning. Further, with the increasing ease for wider reach to specialized audiences; it becomes more justifiable for extension specialists to devote time to developing on-line management and marketing tools. These audiences are not particularly constrained to state borders. Scale economies are critical to justify most public expenditures in extension (Antholt 1994). Antholt, writing more about extension in international development, noted that a guiding principle behind such programs needed to be the creation of institutions that were responsive to the needs of farmers, agribusiness, and the public sector. The advances in communications tools has created many new possibilities to efficiently provide wider reach, even internationally, reintroducing scale economies for program development and delivery.

Not all agribusinesses are going to lean on LGU Extension services equally. Hanson and Just (2001) noted the scale advantages larger farms face as they internalize management and technical resources. Similarly, larger agribusiness entities can more readily secure internal or privatized services compared to small-medium enterprises. Still, even the larger firms can benefit from extension programs that can reach many producers quickly, perhaps facilitating technology transfer that benefits the agribusiness, or engage producers in policy formation for the mutual benefit of the industry. Further, there are many valuable connections for the larger scale agribusiness concerns to the LGU activities in the classroom and research facilities. The agribusiness extension specialists can serve as a critical link.

Continuing management education will always be in need, and especially for the small and medium enterprises. As their businesses grow and expand, they will face new challenges and opportunities. Their educational needs will also grow and change. Agribusiness extension programs will need to continue to adapt and grow with them providing relevant and reliable education based on sound scientific methodology.

Looking ahead, many of the same technologies that are transforming the classroom are going to change agribusiness extension delivery, especially where agribusinesses are often better connected to more sophisticated communication and information tools than (especially smaller) farmers. Web-based platforms, media conferencing, webinars, interactive software, and shared databases are all improving. One of the strengths of the Land Grant system is the emphasis on research, teaching, and extension linkages. One should expect numerous positive spillover effects from the many advances being made in distance education.

These technologies are changing the structure of agribusinesses, as well. Firms have improved information gathering, and extension specialists can contribute significantly to the information gathering systems. Improved information management is one of the greatest challenges for managers today. These are critical success factors for firms to remain competitive and include new challenges related to information sharing and use in management decision making. More outsourcing of specialized business functions has been greatly facilitated with new ecommerce tools, document and data exchange/security, digital images, and remote management systems. Businesses in general, and agribusinesses specifically, are transitioning into much more complex supply chains and electronic commerce, making the management task more challenging. Management training from the Land Grant universities will become more important, especially for smaller and newly established agribusinesses.

Just as undergraduate and graduate instruction in agribusiness management is growing in importance, so too is education for existing agribusiness managers. Long-term success will in part, be dependent on continuing to grow and adapt and remain relevant for the new clientele as their businesses grow and their needs evolve.

The future of agribusiness extension work would seem to be converging on collaborations to support specialized agribusinesses either in similar markets or needing to address similar issues. Tighter budgets will force collaborations that can provide synergy across borders and maximize the effectiveness of agribusiness extension specialists that will have increasing responsibilities.

There is future for agribusiness firms to grow and extension programs to grow with them. Even smaller firms are more easily connecting into a world market (Gupta and Saghalian, 2008; Swisher, Rezola, and Sterns 2009). Internationally we are seeing a strong growth in agribusiness instruction – India, Africa, Armenia, etc. extension programs in these countries will play an important role facilitating connections between these teaching programs and the local production agriculture. To remain relevant the agribusiness extension programs will need to grow with these firms and may also look internationally for clientele rather than just locally. As programs continue to grow and evolve, there will be some intersection of farm management and agribusiness as commodity operations get bigger and more integrated.

Conclusion

Agribusiness extension programs have built on a strong tradition and history of agricultural economics. These programs have developed successfully over the last 15 years within Land Grant Universities in the face of budget cuts. There are still many challenges and opportunities that agribusiness extension programs face in the future. Programs need to build on their success of providing needed answers to a changing clientele to take them into a strong future. The success of the programs was their ability to build upon what was done in the past, but reach out to new clientele with new programs, and just like they have done over the past, agribusiness extension programs will need to continue to evolve so that they continue to add value to their clientele. As the small and mid-size businesses grow, the programs will need to grow with them and/or look for new clientele.

Strong programs will need to continue to be integrated with research and teaching. With tighter budgets and more scrutiny, it will be imperative for programs to show the success and impacts of their resources. Research on developing new evaluation methodologies will be needed. Extension specialists will need to be able to document the impacts of their agribusiness extension programs.

There will also continue to be an expanding need for strong agribusiness extension programs to generate external funds both through grants and project as well as examining an increased use of fees from clientele. This creates challenges and in some cases will mean the successes of programs will be dependent on grant program dollars available. Currently, there are many grants that provide funding for agribusiness extension programs. This has led to an increase in the prominence of these the agribusiness extension programs at universities, but has also made the success of those programs somewhat dependent on the continued support of external funds. This will continue to be an important part of programs and agribusiness extension specialists will need to continue to find a way to balance being a grant administrator with their other responsibilities.

References

- Agricultural Innovation & Commercialization Center (AICC). 2011. Business Planner. Agricultural Economics Department, Purdue University. Online at: <https://www.agecon.purdue.edu/planner/>. (accessed November, 2011).
- Agricultural Marketing Resource Center. (AgMRC). 2011. Online at: <http://www.agmrc.org/>. (accessed November, 2011).
- Anderson, J. R. 2004. Agricultural Extension: Good Intentions and Hard Realities. *The World Bank Research Observer*. 19(1): 41-60.
- Antholt, Charles H. 1994. Getting Ready for the 21st Century: Technical Change and Institutional Modernization in Agriculture. *World Bank Technical Paper #217*, Asia Technical Development Series, 60.
- Balagtas, J.V. 2009. Balancing Responsibilities of a Research/Teaching/Extension Assistant Professor. GSS Track Session Presentation at the 2009 AAEA Annual Meetings, Milwaukee, July.
- Chavas, J.P. 2010. Outreach in Agricultural Economics: Historical Perspectives. Presentation at the 2010 AAEA Annual Meetings, Denver. July.
- Dixon, H.M. 1928. The Use of Agricultural Outlook Information in the Extension Program Mimeograph, U.S. Department of Agriculture, Extension Service.
- Extension Committee on Organization and Policy (ECOP). 2002. The Extension System: A Vision for the 21st Century.? A report to the National Association of State Universities and Land-Grant Colleges. Online at: <http://www.aplu.org/NetCommunity/Document.Doc?id=152>. 16 pg.

- Ferris, J. 2010. The USDA/Land Grant Extension Outlook Program – A History and Assessment. Paper presented at the 2010 AAEA Annual Meetings, Denver, July.
- Gupta, K. and Saghaian, S. 2008. Institutional Framework for Meeting International Food Safety Market Standards for Agricultural Products from a Developing Country Perspective. *Journal of Food Distribution Research* 39(1):78-83.
- International Food and Agribusiness Management Association (IFAMA). 2011. About IFAMA. Online at: <https://www.ifama.org/about/Default.aspx>.
- Perry, G.M. 2010. The Agricultural Economics Profession at 100 Years: A Profile and Projections for the Future.” Paper presented at the 2020 Applied Agricultural Economics Association meetings, Denver, CO. 20 pg.
- SBIR. 2011. Small Business Innovation Research and Small Business Technology Transfer. Online at: <http://www.sbir.gov/about/about-sbir>. (accessed November, 2011).
- Swisher, M.E., Rezola, S., and Sterns, J. 2009. Sustainable Community Development. Gainesville, FL: UF/IFAS EDIS Publication FCS7213-Eng. (Originally released September 2003. Revised August 2009): 3.
- USDA. 1942. Outlook Work: The First 20 Years. March.
- United States Department of Agriculture - Agriculture Marketing Service [USDA AMS]. 2011. “Farmers Market Growth: 1994-2011”. Online at <http://www.ams.usda.gov/AMSV1.0/ams.fetchTemplateData.do?template=TemplateS&navID=WholesaleandFarmersMarkets&leftNav=WholesaleandFarmersMarkets&page=WFMFarmersMarketGrowth&description=Farmers%20Market%20Growth&acct=frmrdirmarkt>. (accessed November, 2011).
- United States Department of Agriculture – Rural Development. 2011. “Value-Added Producer Grants (VAPG)”. Online at: http://www.rurdev.usda.gov/BCP_VAPG_Grants.html. (accessed November, 2011).
- Woods, T., and Hoagland, H. 2000, “Diversifying Agricultural Systems: An External Analysis of State Value-Added Programs, *Journal of Food Distribution Research* 31(1):204-214.

