TOP RANCH MANAGEMENT PROGRAM: TEXAS USA

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Major changes in farm and ranch structure, increased capital costs, lower profit margins and interest in environmental issues are rapidly altering the demand for education on analyses of economic issues on financial management and on information use by managers of Texas commercial farms and ranches. The importance of financial management has increased relative to production management since the financial crises of the 1980s. Real capital costs have been high, with performance and financial position documentation becoming more important to qualify for credit. Increasing world competition and rising costs of inputs relative to commodity prices have placed a premium on effective financial management in an environment characterized by relatively low profit margins. Development and implementation of educational and self-help programs to train decision makers how to develop and use management information has top priority in farm management education today.

Information is becoming more clearly recognized and widely accepted as a key management resource. Information, like any other productive resource, must be managed giving attention to the importance of developing management information systems (MIS) for commercial producers. Education of the managers of large commercial farms or ranches in MIS development and information utilization requires an approach beyond the traditional extension programs. New programs and infrastructure must be developed to meet these needs.

This paper describes the farm and ranch structure in Texas, current extension organization and new program efforts titled "Top Ranch Management," organized to meet MIS needs of commercial cattle ranchers.

Farm and Ranch Structure

Farm and ranch structure in Texas is bimodal. A small proportion of cattle ranches are considered to be commercial size where owners are fully employed by ranching production activities. The 1987 U.S. Census of Agriculture identified 188,788 farms and ranches that generated more than $1,000 in gross income. Ninety-one percent of these farms or ranches generated less than $100,000 in gross income. Texas farms and ranches having over $500,000 in gross sales represented only 1.1% (2,077) of the farms and ranches but accounted for nearly 36% of gross farm income, based on estimates using national sales distributions (Texas data is not available by size groups). Farms with less than $40,000 in gross sales accounted for 73% of the farms but only 9.4% of production (Knutson, Smith and Richardson.) Seven percent of the cattle ranchers have 46% of the cattle in Texas. The commercial farm and ranch target group for management improved is likely not more than 15,000 producers for the entire state. The goals and methodologies for education programs and information technologies applications are different for these large commercial operations that are limited in number but account for a majority of production.

Extension Education

There are three distinct segments of Extension in Texas when viewing operations, administration and programming. First, local activities are initiated and conducted within counties generally under the direction of county agents. Second, Texas is divided into 14 regional research extension districts due to the large geographic area to be covered by faculty, also called specialists. Some Extension faculty with the appropriate backgrounds are stationed at each district headquarters. Third, the main body of Extension specialists (faculty) operating state-wide are housed on the main campus of Texas A&M University.

The level of education and specialization differs considerably between county agents and specialists. County agents generally have four year degrees, primarily in animal science or agricultural education, have farm or ranch

backgrounds, and have experience with rural youth programs. More recently, agents have been encouraged to pursue advanced degrees as announcements for vacated positions begin including higher educational requirements.

It is estimated that less than 5% of the 332 county agents-agriculture have university degrees in agricultural economics or business administration. About half of the current county agents have an advanced degree, generally in adult education rather than a technical field specialization. County agents commonly function as agricultural production generalists with a major focus on youth education programs.

Most Extension specialists have Ph.D. degrees in specific disciplines. Of the 1,024 total Extension professional employees in the Texas Agricultural Extension Service (TAEX), 1.5% specialized in Extension farm and ranch management, and 1% in other applied agricultural economics fields such as marketing, finance and policy.

TAEX specialists have been unsuccessful in their attempts to facilitate development of farm business associations that form producer supported groups for record keeping and analysis quite common in the U.S., particularly in the Midwest. Farm structure differences, lack of institutional support, and pressure from the private sector are primary reasons for this lack of success in Texas.

There has been little change in the number of agricultural economics positions or change in the hiring qualifications of county agents even with the increased importance of financial and other management issues and potential for use of information technologies in the 1980s. Without institutional changes creating differences in both responsibilities and educational requirements of county agents - who are fully employed meeting the needs of the non-commercial producers - alternative approaches had to be developed by agricultural economists to effectively meet the changing education and consulting service needs of commercial farm and ranch managers.

Meeting the increased management and computer application education needs required development of an infrastructure and capacity to deliver assistance apart from county level efforts. This development began in 1981 through efforts of the Extension Farm and Ranch Management group. Delivery programs have evolved from large multi-topic awareness meetings to small (10-20 participants) in-depth, narrowly focused training courses to individual farm or ranch consultation. Over time, the broad general awareness approach has been dropped and the intensive three day courses have expanded. In 1989, 37 such courses were held in 13 different locations in Texas. Three regional Extension computer and management training laboratories are in place for producer and Extension faculty training.

The in-depth education approach differs from the short, more traditional extension information exchange meetings where economists may have 15 to 45 minutes on a multi-disciplinary program. In-depth education activities have been complemented by the development of many computerized decision aids and close linkages with private software vendors to facilitate their access to producers. This method of intense target audience education has had very positive impacts on the effectiveness of management education. Efforts progressively moved from initial computer literacy training to information literacy, or the ability to generate and use information in decision making and planning.

Top Ranch Management Program

The Top Ranch Management (Top Ranch) program is an education and consulting effort organized in 1989, by the Texas A&M Department of Agricultural Economics and College of Veterinary Medicine. The main goal of the program is to develop a target education and MIS development efforts for large commercial cattle ranches. The program currently involves ten such operations in Texas. This group accounts for over a million acres of land and nearly 40,000 head of cattle. Size of operations range from 12,000 to 300 head of cattle. All operations are economically motivated to improve management levels and develop ranch MIS.

Cattle ranch operations are cow-calf and stocker cattle or specialized stocker operations. Both types finish cattle under contract in feedlots. Owners and managers have college degrees at the bachelor's and a few at the master's level. This group has more formal education in agricultural economics or business than the average ranch management population.

The interdisciplinary group of researchers and extension specialists represent the following disciplines: farm and ranch management, marketing, veterinary medicine, and animal, forage and range sciences. In the near future the team will include wildlife management and recreation specialists. All specialists participants hold either Ph.D. degrees in their respective field or are doctors of veterinary medicine. Participating graduate students are studying in Texas A&M's agricultural economics department.

Ranchers were chosen because of their interest in economics, finance, cattle marketing, MIS and solving cattle and forage production problems. The ten ranches are from a wide spectrum of production areas, have widely varying as well as similar problems and are operated by managers with management skill levels.

The challenge is to bring this different group of ranchers to a higher level of management and simultaneously raise the level of expectations of both ranchers and specialists working with the group. Again, a new capacity or infrastructure is being built to support this activity.

Reversing the Role of Listeners

Traditionally, Extension ranch management and production specialists have educated producers through lectures in public meetings, field days or through mass media. The weakness of these methods is that they do not allow sufficient opportunity for specialists to listen to the expressed needs of the "receiver of all this good information." Nor does it provide the lecturer the opportunity to hear what producers have to say about their problems and objectives.

The first group meeting of the Top Ranch group was organized so that it reversed the role of specialists. First, managers

from each ranch described their operations to participating specialists and members of the Top Ranch group. Three topics were addressed: (1) ranch history and present resource situation, (2) organization of the present MIS and (3) specific research and education needs of ranch managers. It is important to note that a number of Texas A&M University administrators participated in this listening session. After this initial phase, concurrent group sessions were held during which Extension specialists and researchers acted as respondents to producer questions rather than giving lectures. These groups were small enough to generate good manager participation. A final session of the two day activity identified priority areas of attention for the interdisciplinary team. Examples of these topic areas are as follows:

- Cow-calf enterprise
  - Mineral nutrition, supplementation on range land
  - Vaccines and health
  - Reproductive disease problems
  - Replacement cows - buy or raise?
- Stocker or store cattle production
  - Range nutrition - forage as well as animal
  - Health - vaccination and internal parasites
  - Integrated management and marketing decision aids
- Forage
  - Native pasture improvement and utilization
  - Clover improvements
- Integrated production, inventory and finance data base
- General ranch level
  - Economic and financial impact of all research
  - Need for standardized analysis procedures in production, finance and enterprise evaluation
  - Ranch budgeting for all aspects of marketing
  - Alternative and more timely information access
  - Alternative forms of price discovery
    - Information and decision aids
  - Utilization of available pricing information

Areas defined by producers may not identify specific researchable topics but they do identify "opportunity" areas for research and extension work. Some of these reinforce commitments to existing work while some reemphasize the need to develop more complete decision aids (e.g., buy versus raise replacement cows). In general, recommendations pointed out the need for better information delivery systems that are more timely and easier to access. Also, it was determined that producers either do not have access to, or do not make use of much of the available information. Results of listening sessions demonstrated that specialists do not spend enough time together formulating and comparing interdisciplinary recommendations prior to visiting producers.

Specific Tools Developed

The clear comparative advantage of agricultural economists in management is in preparation and diagnostic analysis of data for whole ranch financial performance. Some production scientists learn marginal analysis, the use of partial budgets, and gross margin concepts. However, seldom are they willing to learn economic and financial analysis theory and concepts necessary to do whole ranch analysis or planning. Production specialists' familiarity with use of marginal analysis and enterprise budgeting tools is certainly helpful in evaluating technology adoption and resource allocation decisions. Ranch management specialists, however, must assist in overall financial feasibility evaluation. Whole ranch financial analysis requires individual assessments because of the ranches' uniqueness. This differs from the more generalized statements concerning enterprises and other particular changes provided by production specialists.

In light of recognized needs and comparative advantages, management specialists focus efforts on the following:

1. Spreadsheet decision aids
2. Agricultural Financial Analysis Expert System (AFAES)
3. Ranch-Management Information System (Ranch-MIS)

The Lotus 1-2-3® spreadsheet development, publishing and support by farm and ranch management specialists has been an ongoing activity for several years. Many decision templates have been aggregated into packages according to areas of application. Over 25,000 copies of these packages have been distributed to producers, agribusiness firms and extension educators (McGrann and Breazeale).

The Agricultural Financial Analysis Expert System (AFAES) contains software to develop multi-year financial statements and an expert or knowledge based system to perform a diagnostic evaluation of financial statements (McGrann, Karkosh, Falconer, Neibergs and Osborne). Producers must face the fact that financial statements must be prepared. Farmers and ranchers should realize also, that they can learn to use this information in diagnostic analysis and forward planning whether they prepare the statements or whether they pay someone else to prepare them. AFAES software is proving to be a very useful tool for this analysis. This software is licensed to be marketed by private software firms.

The Ranch-MIS is an integrated inventory-production-herd health and financial management data base software designed for large commercial ranch operations (McGrann). Producers in the Top Ranch program are involved in using, testing or financing the development of this software. Upon completion, the software will be made available to the public either through a distribution unit of TAEX or a private firm. Ranch-MIS is partially financed by a Top Ranch participant who will share in revenues generated from software sales.

University ranch management research and extension specialists can combine efforts to meet computer software development needs. These needs will not be met by private sector developers because of the limited number of sales which, in the case of the Ranch-MIS, is not expected to surpass 1,000 copies.

Products of Effort

Development of useful decision aids and MIS starts with one-on-one work followed by continued interaction with users. Little

can be learned about MIS development in a lecture-meeting environment. Direct consultation with members of the Top Ranch group has yielded many insights into what material should be included and issues addressed in decision aids, AFAES and the integrated Ranch-MIS software. These ideas will be reflected in products developed for, and distributed to, the public and Extension educators.

The Top Ranch effort serves as a training ground and an arena for exchange of ideas and information between participating extension and research specialists. These ideas can be incorporated into other education programs for producers, county agents and specialists. The infrastructure to deliver products to commercial producers is being built through these described efforts.

Having producers identify research and education needs is informative for administrators, participating specialists and graduate students. Thus producers' comments likely will impact on the long term research and extension agenda.

Finally, and most importantly, direct work with individuals and small groups of producers yields a great deal of personal satisfaction for faculty and graduate students. Participants can see directly results and impacts of assistance provided and made. Creativity and motivation toward improvement helped establish positive attitudes within the Top Ranch group.

Institutional Change

Land grant universities carrying out Extension and research activities have had difficulty modifying delivery systems, targeting audiences and developing funding approaches with the changing agricultural structure and increased importance of management, economics, finance and application of information technologies. The political reality of clientele, education level and responsibilities of County Extension Agents virtually eliminates them as the persons providing the education and consulting services requested and required by large commercial ranchers. The infrastructure for this activity must be built from the ground up.

Extension farm and ranch management specialists in Texas have been able to develop balanced programs to meet local non-commercial agricultural needs while maintaining state-of-the-art education and software development and support for commercial producers. Conflicts with private firms have been minimized by constant interaction, having joint agreements and keeping producers informed about private sector alternatives. Over time as specialists become more involved in audience targeting, cost sharing and allocating more time to fee based consulting, conflicts likely will rise with county agents and other specialists. Progressive institutional changes that recognize different audiences and producers' willingness to share costs are needed. Another alternative is that public support for agricultural extension education will decline to the point that the institution is forced to target commercial agriculture with extension and research on a fee basis as has happened in a number of countries. The Top Ranch approach appears to be a progressive step that allows interdisciplinary specialists to target efforts on commercial agriculture and beneficiaries to share costs. When not more than 10% of the traditional audience is at a scale to make agriculture a primary economics activity, institutional changes will have to be made.

Until now, most Extension efforts have sought political support from the masses by broadening areas of responsibility of Extension faculty. Meeting education and research needs to make agriculture competitive nationally and internationally has been a stated goal, but there have been few visible institutionally led changes that have characteristics like the Top Ranch program. Subject matter groups working with target audiences must lead this change.

The privatization of extension for commercial agriculture as observed in other countries may be the most viable option in Texas - time will tell. In the meantime, efforts are being made to develop this delivery capacity within the existing institutional framework.

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