Partnering Across the U.S.-Mexico Border: Perceptions of Ranchers and Service Providers Concerning Technology-Transfer Activities in South Texas and Northeast Mexico

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Abstract
Like many international borders, the border between the United States and Mexico divides one ecological region into two political regions. The similarities between the two sides of the border present opportunities for bi-national collaboration among members of the ranching industry. This study was developed as part of a collaborative project to improve longterm livestock production, forage production, and wildlife management in south Texas and northeast Mexico.

The purpose of this bi-national study was to determine the type, nature, and extent of existing extension and technology-transfer activities provided to livestock producers, forage producers, and wildlife managers in south Texas and three states of northeast Mexico. The researcher from Texas A&M University and a co-principal investigator from the Universidad Autónoma de Tamaulipas, in Ciudad Victoria, Mexico worked together to conduct the study on both sides of the border.

Data were collected in 2001 from 103 livestock producers, forage producers, and wildlife managers, and 55 forage-based service providers through personal interviews. Quantitative and qualitative methods were used to collect and analyze data. Among producers, the information most commonly used came from government or university sources in south Texas and livestock producers’ unions or associations in northeast Mexico. Service providers used a combination of mass media and interpersonal channels of communication, while producers more commonly used interpersonal channels of communication. Conclusions and recommendations were made based on these findings for use by individuals and organizations seeking to effect change among livestock producers, forage producers, and wildlife managers.
Introduction

Like many international borders, the border between the United States and Mexico divides one ecological region into two political regions. Similarities in climatic conditions, land characteristics, flora, and fauna justify the classification of south Texas and northeast Mexico as one ecological region. This area, the Tamaulipan Biotic Province, encompasses south Texas and the three Mexican states of Coahuila, Nuevo León, and Tamaulipas (Blair, 1950). The ecological similarities between the two sides of the border logically encourage bi-national collaboration among members of the ranching industry. However, the social, economic, political, and cultural differences in the two countries have constrained bi-national collaboration for decades. Now, a consortium of universities in the United States and Mexico is seeking to reverse that trend.

Researchers, educators, and change agents in Texas and Mexico are currently in the initial stages of implementing a multi-million dollar project to improve livestock production, forage production, and wildlife management in south Texas and northeast Mexico (Consorcio Técnico del Noreste de México Asociación Civil & Center for Grazinglands and Ranch Management, 2000). The project encompasses a number of activities, including quantification of resources, development of technologies, improvement of producer marketing strategies, and dissemination of information. The project is bi-national, drawing on funding, ideas, and manpower from both sides of the border. Partnering across the border in this way is expected to create synergy and avoid duplication of efforts. Prior to the implementation of many of the project’s activities, the project coordinators wished to conduct an assessment of extension and technology transfer services from the perspectives of both the service providers and the producers who received services. This study was designed for that reason.

Purpose

The purpose of this study was to determine the type, nature, and extent of existing extension and technology-transfer activities provided to small, medium, and large livestock producers, forage producers, and wildlife managers in south Texas and three states of northeast Mexico. This study was a collaborative effort between partners in Mexico and Texas. The Mexican partner, María Cecilia Montemayor Marín, is the director of the Centro de Investigación Social (Center for Social Research) at the Universidad Autónoma de Tamaulipas (Autonomous University of Tamaulipas) in Ciudad Victoria, Mexico. The Texan partner, Wendy Folsom, was a graduate student in the Department of Agricultural Education at Texas A&M University, College Station. The bi-national nature of the study allowed each partner to conduct research on her own side of the border while ensuring that the results of that research would be useful for assessment throughout the region.

Specific objectives of the study were:
1. Identify organizations engaged in agriculturally related extension activities in the defined region.
2. Determine the type, nature, and extent of extension activities provided.
3. Determine types of extension services received as perceived by producers.
4. Develop a directory of agriculturally related extension service providers.
Methodology

The data for this study were collected in the spring and summer of 2001 from two samples. The first sample came from the population of individuals and organizations that provide extension and technology-transfer activities to livestock producers, forage producers, and wildlife managers in 16 counties in south Texas and the northeast Mexican states of Coahuila, Nuevo León, and Tamaulipas. Snowball sampling was used to identify 55 service providers - 49 in Mexico and six in Texas (Gall, Borg, & Gall, 1996). The researchers developed a survey instrument corresponding to the first and second objectives of the study.

The second sample in this study came from the population of livestock producers, forage producers, and wildlife managers in the designated region who could have had contact with service providers. A purposive approach was selected to obtain this sample for two reasons (Lincoln & Guba, 1985). First, an exhaustive list of producers was not available. Second, members of this population were known for being solitary and especially skeptical of researchers. The nature of the sampling method allowed the researchers to identify themselves with an individual or organization that producers trusted. In Texas, a sample was obtained by asking the agricultural extension agent in each county for names of three cattle producers in his or her county—one small producer, one medium producer, and one large producer. Although the sampling procedure focused on cattle producers, interviews included questions about livestock production of several other species as well as forage production and wildlife management. In Mexico, the sample of livestock producers, forage producers, and wildlife managers was obtained from lists of participants in programs and from references given by other producers. The total number of producers who completed surveys was 103 - 41 in Texas and 62 in Mexico.

The survey instrument that was used for interviewing producers contained two sections. The first section consisted of demographic and ranch information, including education, age, location, experience, and size of operation for the purpose of categorizing the producer. The second section covered the sources of information that producers used and trusted and the communication channels that producers used. In addition to conducting surveys with the producers, the researchers made observations, which are summarized as qualitative observations in this report.

Data from both samples were analyzed by frequency of responses. Cross tabulations were used to compare data by respondents’ geographical location for both samples, and by categorization based on public or private sector for the service provider sample. The constant comparative method was used to conduct qualitative analysis of the researchers’ observations.

Summary of Findings

The findings for this study are presented by objective.

Objective One: Organizations engaged in agriculturally related extension activities.

The 49 surveys completed in Mexico represented 42 private sector organizations and seven public sector organizations. In Texas, of six completed surveys, three private sector organizations and three public sector organizations were represented.
Objective Two: Type, nature, and extent of extension activities.

The second objective was addressed by the interviews with service providers. The responses for target audiences indicated by service providers were as follows: livestock producers, 34; forage producers, 24; wildlife managers, 14. With respect to size of cattle production operation, seven respondents (36.8% of those who answered this question) primarily served small producers. Four respondents (21.1%) primarily served medium producers, and three respondents (15.8%) primarily served large producers. Five respondents (26.3%) did not serve one primary category of producers.

The most common types of activities provided by private sector respondents to livestock producers, forage producers, and wildlife managers were sales, credit, and veterinary services. Among public sector respondents, the most common types of services included animal management practices and forage/plant production practices.

The nature of services was defined as the method or channel through which providers rendered services. The most common responses were as follows: consultations in the provider’s office or workplace; bulletins, brochures, and pamphlets at offices; and visits to producers’ farms, ranches, or workplaces. Rogers (1995) defined interpersonal channels as those means of communication that occur face-to-face. In the context of this study, some examples of interpersonal channels of communication were ranch visits, field days, and workshops. Mass media channels include means of communication that do not require face-to-face interaction, such as newsletters, radio broadcasts, and posters. Among service providers in this study, mass media channels and interpersonal channels were interspersed, suggesting that service providers used a combination of mass media and interpersonal methods to provide services.

Objective Three: Types of extension services perceived as being received.

Producers were asked to indicate which sources of information provided information to them, which sources of information they trusted, and which communication channels they used.

For the overall region, the most common category of information received as indicated by respondents was the category of specific communication channels, followed by unions/associations and government/universities. The “union,” as used in Mexico and in this report, corresponds to a production and marketing association. In Mexico, the most common response pertained to unions and associations. In Texas, the most common responses were for the category of government and universities and for the category of specific communication channels.

The most trusted sources of information overall were government or universities, friends or other producers, and unions or associations. However, when calculated as percentages of those who stated that they used that source of information, the most common responses were livestock shows/auctions and friends or other producers.

When producers were asked to indicate which of 14 communication channels were ones that they used, five of the six most common responses were interpersonal channels rather than mass media channels. Six of the eight least common responses were mass media channels. These responses indicated that producers used more interpersonal channels of communication than they used mass media channels.
**Objective Four:** Directory of extension service providers.

Based on the Texas and Mexico partners’ findings for Objective One, a directory of service providers was developed. The directory includes contact information and organizational descriptions for 44 service providers organized by region.

**Qualitative Observations**

Most of the interviews conducted in this study were done in person. This interpersonal approach allowed the researchers to make detailed observations of respondents on their respective sides of the border. The qualitative analyses of the researchers’ observations provide insights into perceptions of livestock producers, forage producers, and wildlife managers. The following sections describe the researchers’ observations in Mexico and Texas.

**Northeast Mexico**

Producers in Mexico trusted government and university sources, but they did not implement many production or management practices because they lacked resources. In other words, sometimes practices that were recommended by government and university sources were not adopted because the producers could not afford them, not because they did not trust the sources. Further, when producers adopted practices, they often implemented the technology only partially.

Producers perceived that they needed governmental funds to implement technology. However, governmental funds were difficult to obtain. Producers perceived that belonging to an association allowed them to receive governmental assistance more easily. Many producers belonged to an association for this reason. The researcher observed that governmental agencies could interact better with producers by providing better accessibility to programs, by offering more practical programs, and by improving advertising of programs.

**South Texas**

“Ranching is not profitable,” said a large producer in Dimmit County. Other producers echoed this concern. Ranchers perceived that they must either have very large livestock operations or work on the side in other occupations to make a living. When asked about why they continued to ranch despite the lack of profitability, several respondents replied that they could not imagine doing anything else. Ranching was simply their way of life. “It doesn’t produce a lot of money. It produces a lifestyle,” said a medium-sized producer in McMullen County. Some specific examples of the constraints on ranching will allow the reader to understand better the difficult situations in which ranchers found themselves.

The concern of drought was consistently mentioned in the interviews. Drought was closely tied to perceptions of effectiveness. When asked about the usefulness of innovations that he had tried recently, one producer mused, “If you do something and it rains, you’re very intelligent. If you do something and it doesn’t rain, you’re not very smart.” As a producer in Jim Wells County put it, “Rain determines everything.” Further, some producers expressed disdain for service providers who minimized the negative effects of drought. One small producer emphasized that some service providers oversimplified the issue by telling producers to feed their cattle during the drought, without taking into account that feed is very
expensive. He elaborated, “They (Texas Agricultural Extension agents) do field days when we have a good (rain) year, so they can impress themselves.”

Issues regarding governmental services and university sources extended beyond the effects of drought. The quantitative data showed a high degree of trust in government and university sources, and some respondents offered positive comments regarding Texas Agricultural Extension Service (TAEX). “Extension Service is always on the cutting edge,” said a medium-sized producer in Live Oak County. On the other hand, some other producers spoke negatively of TAEX and academic environments. A small producer in Cameron County said, “Most county agents don’t know a lot about what’s going on in their counties.” A medium-sized producer said, “You can learn more in a summer from an old-time rancher than you ever can from a professor.”

Perceptions of diversified land use among respondents were multi-faceted. To the casual observer, the trends of urban encroachment and wildlife management may seem discrete. However, many producers saw these trends as closely linked. There was a perception among some respondents that leasing land for hunting was an act of pandering to urban dwellers. One large producer acknowledged the potential for profits in leasing land for hunting, but said that he refused to “prostitute” himself that way, meaning that to allow strangers on his land for money was equivalent to selling out or abandoning his values. Other producers expressed concern over the idea that individuals from cities were buying land for hunting and building vacation homes. Producers with this concern hinted at the fear of losing their way of life to the highest bidder.

Some of the concerns articulated above may seem inapplicable to this study on the sources of information that producers use and trust. However, the qualitative findings suggest that the reasons for a producer’s use and trust of a source of information may stem from the way that a particular source of information addresses those concerns.

Conclusions

The findings and conclusions in this study are not necessarily generalizable to the entire population of interest because the sample was purposive, not random. However, this study provides some insight into the perceptions of selected forage-based service providers, livestock producers, forage producers, and wildlife managers.

Among service providers in the private sector in both south Texas and northeast Mexico, the category of sales was the most common type of service provided. However, respondents were especially skeptical of salespeople. An implication exists that salespeople might not be as successful as other forage-based service providers are in effecting change. This inference is consistent with the work of researchers examining other populations (Rogers, 1995). Further, the abundance of sales services suggests that there are many opportunities for service providers in the public sector to collaborate with individuals and organizations that offer sales. However, the low degree of producer trust in salespeople implies that the endeavors of service providers in the public sector to collaborate with private service providers who offer sales may be met with low levels of trust from producers. On the other hand, private service providers who offer sales may receive higher levels of trust if they collaborate with service providers in the public sector. Forage-based service providers in the public sector on both sides of the border should exercise caution when approaching opportunities for collaboration with service providers who offer sales, because producers’ low level of trust in salespeople could be transferred to the collaborative endeavor.
Service providers offered both mass media channels and interpersonal channels of communication, but producers used interpersonal channels more than mass media channels. Although both types of communication channels played important roles at different stages of the innovation-decision process, the findings of this study imply that the value of in-person contact should not be underestimated. The finding that producers favored situations of technology transfer in which they interact personally with individuals implies that service providers should not discard interpersonal channels of communication in favor of mass media. Instead, they should focus primarily on interpersonal channels, using mass media channels to supplement their interpersonal activities. Personal relationships between producers and the individuals who provide information are especially important to foster trust.

Mass media channels of communication are probably the easiest way for forage-based service providers to disseminate information to livestock producers, forage producers, and wildlife managers, especially when one considers the geographical isolation of many producers and the abundance of mass media channels that today’s technology allows. Therefore, it is recommended that forage-based service providers use these channels systematically and continuously, but without disregarding interpersonal channels of communication, which producers in both countries favor.

In Texas, the majority of producers received production information from government or university sources. However, in Mexico, less than half of the producers received information from government or university sources. The most common source of information used in Mexico was the category of producer-related unions or associations. For the entire region, government and university sources were trusted the most by producers. However, some producers in south Texas expressed negative perceptions about government and university sources. Therefore, the quantitative findings about high levels of trust in government and university sources should not be misconstrued to conclude that government and university sources were universally trusted. Of particular concern is the perception among producers that solutions proposed by service providers are often too expensive or otherwise impractical.

**Educational Importance**

This study provides insight into the similarities and differences in needs for information about technology, services, and production and management practices among livestock ranchers, forage producers, and wildlife managers on two sides of a common political border. To develop collaborative efforts in research and extension endeavors, such similarities and differences must be understood. Undertaking collaborative efforts successfully was demonstrated. Thus, this study provides a model for future bi-national studies of extension and technology-transfer activities. The conclusions of this study also provide insight and guidance for change agents who provide services to individuals in the agricultural sector.
References
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