how extension stacks up

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Introduction

Cooperative Extension has long been recognized as a link between the producers and the users of scientific knowledge. According to the Smith-Lever Act of 1914, Cooperative Extension work consists "of diffusing among the people useful and practical information on subjects relating to agriculture and home economics," and to encourage applying such information in meeting individual and societal needs.

. . . Extension professionals have an important role in educating farm leaders, supplying dealers with appropriate literature, and working with media to effectively diffuse rural information. . . .

A recent study conducted in Lewis County, in the North Country region of New York State, focused on these and similar concerns. The study, part of a major inquiry into the "Extension Linkage System" and barriers to agricultural information utilization, wanted to identify:

1. The principal communication channels used by Lewis County dairy farmers.
2. Farmers' perception of Extension credibility.
3. Socioeconomic characteristics of the farmers that might have a bearing on their relationship with Extension.

Background

Central to the problems of information production, dissemination, and use is the question of "linking roles." Many investigators, including Havelock, have noted that research and practice represent two systems, each having its own characteristics—subcultural norms, values, communication patterns, etc. The arguments for a link between the knowledge production and use systems is that scientists and farmers are the products

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of two distinct "worlds." The implication is that when left to their own devices, the two systems will probably communicate at cross purposes.[1]

The theoretical model that emerges from this reasoning (see Figure 1) recognizes Extension's role in bridging the knowledge gap between the land-grant university and its rural and urban clients.

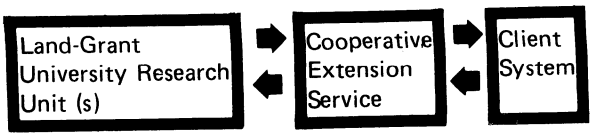

Figure 1. Bridging the gap between knowledge producer and user.

In its linking role, Extension gathers research-based knowledge, derives practical information from it, and transmits it in an understandable form to potential users.

Lewis County in rural upstate New York, was the site of the study. While Lewis County is located within the influence of a major urban area (Watertown), it isn't economically dominated by the city. According to a recent census, 84.5% of the county's population is rural.

Method

Sampling Procedure

On written request, a directory of Lewis County dairy farmers, maintained by the county Extension personnel, was given to the investigators. From the directory, 60 farmers were randomly selected.

Data Collection

Data were collected by personal interviews, using a semi-structured format. During their training sessions, the interviewers (a male and a female) were asked to collect "soft" data—spontaneous and solicited comments about respondent's experience in the North Country.

Data Analysis

For several reasons (attrition, incompleteness of questionnaires, etc.) only 53 of the interview forms were processed. Since our main interest was in creating a rounded picture of the subpopulation of dairy farmers in the area, together with their communication links with Extension and other sources, data were analyzed in descriptive, summary statistics.

Results

Characteristics

Table 1 presents the demographic characteristics of the respondents. It shows the respondents were basically middle-aged farmers and high school graduates. The size of operations, number of cows kept, and gross incomes were quite representative of the larger population of the area dairy farmers.[2]

Table 1. Summary characteristics of Lewis County dairy farmers.

Characteristic	Mean	Mode	Range
Age	47 years	56	26-61
Education	11 years	12	8-18
Acreage	346 acres	225	30-2,000
Herd size	68 cows	60	1-390
Gross income	$57,323	$80,000	$1,000-225,000
Adjusted income*	$17,194	$24,000	$300-67,500

*Adjusted income was calculated with the help of Cornell University's Agricultural Economics Department. (About 70% of a farmer's gross income goes to cover operating expenses.)

What Table 1 doesn't show, however, is that 90% of the respondents held membership in the Extension dairy association. This information may seem insignificant, however, it shows fellowship with Extension personnel, and the privilege of receiving Extension newsletters and other printed materials.

Information Sources

Table 2 shows information sources mentioned by respondents and thought to be most helpful and trustworthy. Two sources—Extension and magazines—stand out as the dominant messengers of relevant messages for dairy farmers. Special interest magazines (such as *American Agriculturalist, Hoards Dairyman, and Successful Farmer*) tended to provide the most up-to-date agricultural information and technical developments, but Extension was also frequently mentioned for these types of information.

Respondents were asked to indicate whether magazines, newspapers, radio, or television were: (1) the most important and (2) the most convenient source for area agricultural information. Magazines were chosen by 56.6% of the farmers as the most important source for such information, followed by newspapers, 28.3% and radio, 13.2%. Magazines were chosen as the most convenient source by 52.8% of the farmers, while radio and newspapers were chosen by 26.4% and 17.0%, respectively. Television didn't emerge as a significant selection in either case.

The relative dominance of the print media, and magazines in particular, can be attributed to several factors. Many of the farmers said that magazines, such as the special interest type, contained articles relevant to their own farming situations. Most said that the feature articles in these magazines focused on indepth analyses of specific farming problems and current developments. This is consistent with Lionberger's finding

Table 2. Information sources used.

Attributes	Extension	Friends & relatives	Commercial dealers	Magazines	Other*	No answer
Most helpful	41.5%	15.1%	11.3%	9.4%	18.9%	3.8%
Most trustworthy	39.6	9.4	9.4	0.0	15.2	26.4
Most often used for agricultural science or technical information	30.2	0.0	11.3	41.5	9.5	7.5
Most likely to have latest agricultural developments	18.9	0.0	15.1	49.1	15.0	1.9
Most influential when making farm practice decisions	26.4	34.3	26.4	0.0	11.9	1.0

*Included in this category were infrequent responses (mentioned by only one or two respondents), such as ASCS, Vets, Farmers Cooperatives, and own experience.

that farmers "have come to rely on newspapers and magazines to get ideas about new developments quickly." Furthermore, these media were mentioned as convenient sources of information because they could be read while "relaxing" and were available for later use.

While many of the farmers said they listened to radio while working in the barn, they indicated that radio and television offered very little farm-oriented programming and that broadcast hours (especially for television) were incompatible with their work schedules. Radio is frequently used for weather reports, and newspapers were cited for their "localness" and timely analyses of farm market prices.

Reference Groups

The importance of reference group influence on the *adoption of agricultural technology has been shown in many* studies. Our data (see Table 2) support the findings of Lionberger that "interpersonal networks of farmers" influence information dissemination and adoption of new farm practices.[4] In general, the respondents in our study had a desire to talk with another farmer (usually a friend or relative) who had tried a new practice before venturing to invest in it. Extension agents and commercial dealers were seen as secondary sources to be contacted only at the "decision-confirmation" stage.

Extension Credibility

To probe the importance of Extension agents, the farmers were asked to choose between agents and commercial dealers as the primary source for agricultural information. They were also asked to indicate which they would tend to believe—Extension or commercial agents—if presented with two differing reports on a new agricultural development.

Our findings indicate that while farmers showed a slightly greater reliance on commercial agents for information (37.7% for commercial dealers and 35.8% for Extension agents), if they were faced with conflicting reports, they would overwhelmingly choose an Extension agent (81.1% as opposed to 5.7% for commercial dealers).

These findings are consistent with the data in Table 2, which shows that Extension agents and commercial dealers were selected by 26.4% of the farmers as the most influential source when making farm practice decisions. Extension, however, was considered the most trustworthy source by 39.6% of the farmers, compared to only 9.4% who chose commercial dealers.

Many of the farmers said that dealers were more convenient and more frequently contacted (for example, when buying farm supplies) than the Extension agent. But they also indicated a distrust of dealers, saying they were "always trying to sell something." The Extension agent, on the other hand, was seen as unbiased towards any particular practice or product.

Recent diffusion/adoption studies have found an increased use of commercial dealers at the awareness, information, and evaluation stage. While our findings support the importance of commercial dealers as influential sources of information, they also raise questions about their credibility and farmers' receptivity to their influence attempts.

Extension Communication Efforts

The respondents were asked to express their opinions of Extension communication efforts. Table 3 shows what Extension programs the farmers perceived as most and least effective. The data show that printed information was considered the most effective means of Extension communication by a majority (60.4%) of the farmers who responded. Many of them said they received Extension printed materials on a regular basis, but had infrequent contact with the county agent himself. This would explain why only 17.0% felt that interpersonal contact was the most effective method of Extension communication.

What is surprising in Table 3 is the large percentage of farmers with "no opinion" on the least effective means of

Table 3. Respondents' assessment of Extension communication efforts.

Channel	Most effective	Least effective
Interpersonal contacts—farm visits	17.0%	0.0%
Printed Media—flyers, bulletins, etc.	60.4%	0.0%
Radio	0.0%	18.9%
Television	0.0%	20.8%
No opinion	22.6%	60.4%

communication. We can only speculate that the farmers were reluctant to express a negative opinion. Note also that the electronic media were seen as the least effective: radio was judged the least effective by 18.9%, while television was judged similarly by 20.8% of the respondents.

These findings are consistent with similar findings from Awa's investigation of communication with low-income rural audiences in Yates County, New York. Data from this study revealed that many rural inhabitants "regularly read most printed materials they receive." The implication of this finding for Extension communication efforts was that bulletins, flyers, and newsletters are more effective than audio-visual media in reaching "low-income families with situationally relevant information."[5] Our data show this is true with other audiences as well.

Conclusions and Implications

Those concerned with disseminating scientific information to farmers must recognize the diversity of sources and communication channels through which farmers seek agricultural information. Our findings show that Lewis County dairy farmers don't depend on any one source, but instead try to gather as much agricultural information as possible. Clearly, some sources fill the farmers' needs better than others (as in the case of magazines and also Extension printed materials), but all are recognized as potentially useful. The farmers interviewed emerge as "rational information seekers" who rely on both the mass media and interpersonal networks for farm-oriented information.

It's possible that television didn't have a strong impact because it's used primarily for entertainment and hasn't been established as a farm information source. Radio, however, has the potential to be used for farm information programs that may be heard by a sizeable farm audience. The inherent

problem with television and radio is that they lend themselves only to limited orderly presentations. The print media, however, have the advantage of being receiver-controlled—a farmer can read and reread a printed material whenever he desires.

Commercial dealers were found to be readily accessible sources and are in a strategic position to communicate with farmers when their credibility has been established. Clearly, they're a determining force in decisions to adopt new farm practices. However, when a final decision must be made, it's fellow farmers who are most often consulted.

Extension agents aren't always the primary nor the most frequently contacted source, but they do seem important as "information validators." Farmers know that they can depend on Extension for timely information about new farming developments. In general, our findings indicate a tendency for farmers to look to other sources for initial information, with the Extension agent assuming an intermediate role.

This implies that Extension agents should focus their efforts on identifying and providing information to primary sources. Extension professionals have an important role in educating farm leaders, supplying dealers with appropriate literature, and working with media to effectively diffuse rural information. This means Extension agents have to develop and use the communication skills necesary to prepare understandable messages for the mass media. In short, Extension agents should assume an active role in which they function as one of many communication links.

Footnotes

1. Ronald G. Havelock, *Planning for Innovation* (Ann Arbor: University of Michigan, Center for Research on Utilization of Scientific Knowledge, 1969), 12.
2. See for example, C. A. Bratton, *1976 Farm Business Summary: Northern New York* (Ithaca, New York: Department of Agricultural Economics, Cornell University, March, 1977), p.6.
3. Herbert F. Lionberger, *Adoption of New Ideas and Practices* (Ames, Iowa: Iowa State University Press, 1960), p. 49.
4. Herbert F. Lionberger, Chii-jeng Yeh, and Gary D. Copus, *Social Change in Communication Structure: Comparative Study of Farmers in Two Communities,* Rural Sociology Monograph Number 3 (Morgantown: West Virginia University, 1975), pp. 66-67.
5. Njoku E. Awa, "Communicating with the Rural Poor," *Journal of Extension,* XII (Winter, 1974), 8-13.